SLAB UNITS - TYPICAL SECTIONS

BOX BEAMS - TYPICAL SECTIONS

SLAB UNIT PROPERTIES

<table>
<thead>
<tr>
<th>TYPE</th>
<th>AREA (in²)</th>
<th>DISTANCE FROM C.G. TO BOTTOM (in)</th>
<th>MOMENT OF INERTIA (in⁴)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B36&quot;x24&quot;</td>
<td>596.6</td>
<td>1.5&quot;</td>
<td>346.392,2</td>
</tr>
<tr>
<td>B36&quot;x27&quot;</td>
<td>596.6</td>
<td>1.9&quot;</td>
<td>583.642,0</td>
</tr>
<tr>
<td>B36&quot;x30&quot;</td>
<td>596.6</td>
<td>2.3&quot;</td>
<td>883.642,6</td>
</tr>
<tr>
<td>B36&quot;x33&quot;</td>
<td>596.6</td>
<td>2.7&quot;</td>
<td>1300.723,1</td>
</tr>
<tr>
<td>B36&quot;x36&quot;</td>
<td>596.6</td>
<td>3.1&quot;</td>
<td>1990.272,3</td>
</tr>
<tr>
<td>B36&quot;x42&quot;</td>
<td>746.6</td>
<td>4.1&quot;</td>
<td>3571.368,2</td>
</tr>
<tr>
<td>B36&quot;x45&quot;</td>
<td>746.6</td>
<td>4.5&quot;</td>
<td>4870.045,2</td>
</tr>
<tr>
<td>B36&quot;x54&quot;</td>
<td>996.6</td>
<td>5.4&quot;</td>
<td>8204.045,2</td>
</tr>
</tbody>
</table>

BOX BEAM PROPERTIES

<table>
<thead>
<tr>
<th>TYPE</th>
<th>AREA (in²)</th>
<th>DISTANCE FROM C.G. TO BOTTOM (in)</th>
<th>MOMENT OF INERTIA (in⁴)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B36&quot;x24&quot;</td>
<td>596.6</td>
<td>1.5&quot;</td>
<td>346.392,2</td>
</tr>
<tr>
<td>B36&quot;x27&quot;</td>
<td>596.6</td>
<td>1.9&quot;</td>
<td>583.642,0</td>
</tr>
<tr>
<td>B36&quot;x30&quot;</td>
<td>596.6</td>
<td>2.3&quot;</td>
<td>883.642,6</td>
</tr>
<tr>
<td>B36&quot;x33&quot;</td>
<td>596.6</td>
<td>2.7&quot;</td>
<td>1300.723,1</td>
</tr>
<tr>
<td>B36&quot;x36&quot;</td>
<td>596.6</td>
<td>3.1&quot;</td>
<td>1990.272,3</td>
</tr>
<tr>
<td>B36&quot;x42&quot;</td>
<td>746.6</td>
<td>4.1&quot;</td>
<td>3571.368,2</td>
</tr>
<tr>
<td>B36&quot;x45&quot;</td>
<td>746.6</td>
<td>4.5&quot;</td>
<td>4870.045,2</td>
</tr>
<tr>
<td>B36&quot;x54&quot;</td>
<td>996.6</td>
<td>5.4&quot;</td>
<td>8204.045,2</td>
</tr>
</tbody>
</table>

REMARKS

1. Unit shear key from shears of size 12" on beam.
2. Unit shear keys on both sides of box beam configurations.
FRAMING PLAN FOR SPANS OVER 65' (SKEWS ≤ 20°)

FRAMING PLAN FOR SPANS OVER 65' (SKEWS > 20°)

NOTE:
THE CONTRACTOR IS RESPONSIBLE FOR ASSURING STABILITY OF ALL BOX BEAMS DURING ALL PHASES OF CONSTRUCTION.

DESIGNER NOTES:
LOCATION OF EXTERNAL INTERMEDIATE DIAPHRAGMS -
1) NO DIAPHRAGMS ON SPANS UP TO 65'.
2) MIDPOINT FOR SPANS GREATER THAN 50'.
3) FOR SKEWS GREATER THAN 20° BUT LESS THAN 50°,
   LOCATIONS OF INTERNAL (INTERMEDIATE) DIAPHRAGMS -
   1) NO DIAPHRAGMS ON SPANS UP TO 65'.
   2) MIDPOINT FOR SPANS GREATER THAN 65'.
   3) FOR ALL SKEWS, SHOW ONLY ONE SKEW HOLE AND PLACE AS SHOWN.

FOR STEEL DIAPHRAGM DETAILS, SEE BD-PC6E.
DESIGNER SHALL DETAIL UTILITY SUPPORTS WHERE APPLICABLE.
FRAMING PLANS FOR SPANS OVER 65' (SKEWS > 20°)

LOCATION OF EXTERNAL INTERMEDIATE DIAPHRAGMS -
1) NO DIAPHRAGMS ON SPANS UP TO 65'.
2) MIDPOINT FOR SPANS GREATER THAN 65'.
3) ' POINTS FOR SPANS GREATER THAN 50'.

INTERNAL DIAPHRAGMS SHALL BE PERPENDICULAR TO BEAMS AND PLACED AS SHOWN.
IN ALL AZIMUTHS, IF E OF BEARINGS ARE THE SAME, SHOW ONLY ONE SKEW HOLE AND ONE AZIMUTH, LABELED TYPICAL.
NOTE:
ALL STEEL SHALL BE INCLUDED IN THE PRICE BID FOR THE BEAM TYPE.
INTERMEDIATE AND END DIAPHRAGMS SHALL BE FABRICATED WITH THEIR EXCESS VERTICAL.

ALL HOLES IN STEEL ADJACENT TO STEEL INSERTS AND FORMED HOLE PERMITTED TO BE FIELD DRILLED.
ALL CONNECTIONS BETWEEN STEEL ELEMENTS SHALL BE MADE ACCORDING TO THE NEW YORK STATE STEEL CONSTRUCTION MANUAL.

THE CONTRACTOR MAY PLACE DIAPHRAGMS ON EITHER SIDE OF THE STRUCTURAL ELEMENT AS NECESSARY TO CORRECT ALIGNMENT PROVIDED THERE WILL BE NO INTERFERENCE WITH OTHER STRUCTURAL DETAILS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS TO BE USED WITH INSERTS SHALL BE ASTM A325 TYPE 1 ACCORDING TO THE NEW YORK STATE STEEL CONSTRUCTION MANUAL.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

ALL HOLES IN STEEL ADJACENT TO STEEL INSERTS AND FORMED HOLE PERMITTED TO BE FIELD DRILLED.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.

THREADED INSERTS FOR \( \frac{1}{2} \)" DIA. BOLTS SHALL BE CAST INTO THE STEEL TO STEEL CONNECTIONS SHALL BE MADE USING ASTM \( \frac{1}{2} \)" A325 BOLTS.
The document contains detailed information about the reinforcement of box beams, including the placement of bars, stirrups, and dowel holes. It specifies the dimensions and spacing for various components such as shear reinforcement, transverse tendon, and expansion anchor dowel holes. The document also includes notes for the design and construction of integral abutments and the letting of contracts. The plans, sections, and details are provided with clear annotations and labels to guide the construction process.
**Typical Slab Unit Section**

### Slab Thickness Table

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.600</td>
<td>5/8</td>
<td>3/4</td>
<td>5/8</td>
<td>5/8</td>
<td>5/8</td>
</tr>
<tr>
<td>0.750</td>
<td>3/4</td>
<td>3/4</td>
<td>3/4</td>
<td>3/4</td>
<td>3/4</td>
</tr>
<tr>
<td>0.900</td>
<td>3/4</td>
<td>3/4</td>
<td>3/4</td>
<td>3/4</td>
<td>3/4</td>
</tr>
</tbody>
</table>

**Camber Table (Mid-Span)**

- **Camber Due to Prestressed Force and Beam Dead Load at Transfer**
- **Camber Due to Prestressed Force and Beam Dead Load with Grout**
- **Deflection Due to Slab Dead Load**
- **Deflection Due to Superimposed Dead Load**

**Notes:**
- Camber values are taken at centerline of slab units.
- All measurements are taken at centerline of slab units.

### Design Load Table

- **Unit Weight:**
- **Beam Unit:**
- **Slab Unit:**
- **Utilities:**
- **Rest:**

**Notes:**
- The prestressing strands shall be 0.6" dia. low relaxation steel strands in a balanced tendon configuration. The minimum strands shall consist of 2 strands.
- The total strands required shall be determined by the designer.
- The minimum strands shall be used for the design.
- The designer shall verify that the strands are placed to accommodate the design.
- The tensioned strands shall be tensioned to a jacking force of 270 ksi.

### Prestressed Concrete Slab Unit Reinforcement

<table>
<thead>
<tr>
<th>Mark</th>
<th>No.</th>
<th>Length</th>
<th>Type</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>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I</td>
<td>2</td>
<td>V</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>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>2</td>
<td>II</td>
<td>2</td>
<td>V</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>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>3</td>
<td>III</td>
<td>2</td>
<td>V</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>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>4</td>
<td>IV</td>
<td>2</td>
<td>V</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>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

**Notes:**
- Camber notes are assumed to be 1" at the centerline of the slab units.
- All dimensions are taken at centerline of slab units.
- All measurements are taken at centerline of slab units.

### Epoxy Bars

- **Pre-Coating Bar Reinforcement:**
- **Total Epoxy Bars:**
- **Concrete Bars:**
- **Complementary Bar Reinforcement:**
- **Total Complementary Epoxy Bars:**

**Notes:**
- The epoxy bars shall be coated with a moisture impermeable material.
- The epoxy bars shall be securely attached to the concrete.
- All calculations shall be performed using the theoretical slab thickness.
1) Place stage-I bearings as shown on the contract plans.
2) Place the box beams or slab units.
3) Remove and clean dowel holes in the bridge seat.
4) Install anchor sleeves with appropriate gasket material.
5) Wash shear keys thoroughly to remove any foreign material.
6) Clean and pre-wet the top surfaces of the beams prior to placing concrete for the stage-I deck.
7) Tension stage-I transverse tendons no sooner than 24 hours after placement of the stage-I deck.
8) Clean and pre-wet the top surfaces of the beams prior to placing concrete for the stage-I deck.
9) Tension stage-II transverse tendons no sooner than 24 hours after placement of the stage-II deck.
10) Clean and pre-wet the top surfaces of the beams prior to placing concrete for the stage-II deck.

Sequence of Stage-II Superelevation Construction

Sequence of Stage-I Superelevation Construction

Stage I Construction

Stage II Construction

Transverse Tendon Placement for Spans < 50 ft.

For Spans ≥ 50 ft., add quarter point tendons.

Stage Construction Transverse Tendon Recess @ 50° Skew

Stage Construction Transverse Tendon Recess @ 0° Skew

End Block and Transverse Tendon Detail for Integral Abutments

Section A-A

Section B-B

NOTES:

- 6" × 6" × 6" galvanized sheets and plates shall be perpendicular to the longitudinal axis of the tendon in all planes.
- Beam reinforcement shown for clarity.
- No header applied to the recess for transverse tendons.

Design Notes:

- The stage-I deck is not possible with slab units.
- Fully enclose tendons and pour the section prior to stress application with the plates.
- For integral abutment, use one header.
- See stage construction and transverse tendon placement instructions.
PARTIAL PLAN - 0° SKEW

BEARING PLACEMENT DETAILS

Designer Notes:
Riveting plate must be completely embedded into bearing with 1° "wedge" cover above and 21/4" minimum cover to size of the riveting shell. Riveting plate must clear the beam end.

If additional restrictions limit the longitudinal placement of elements shown in bearing anchorage plan above, 1 special plate must be provided with embedment into slab form only. See Notes. For additional joint system information see Appendix 4A, sheet 7.
A plan view of the bearing anchorage shall be shown for each section as shown above. The ends of all beams shall follow the shear. The anchor bars shall consist of a 9/32" #11 bar, 3/4" long. Anchor heads are not necessary when using bonded anchors.

Sequence of Construction
Single Stage Adjacent Box Beams or Slab Units:
1) Place bearings as shown on the contract plans.
2) Place the box beams or slab units on the bearings.
3) Drill and anchor bolts in the vicinity seat.
4) Install anchor dowels.
5) Grout shear keys thoroughly to remove any foreign material. Install anchor bolts in the shear keys.
6) Install and flex the shear keys with an approved steel fiber post-tensioning system.
7) Place the concrete or slabs as shown above. All shear keys shall be completely filled.
8) Solder the transverse tendons to 90° and secure to anchor dowels. Install shear keys after placement of shoots in the last shear keys.
9) Clean and pre-wet the top surfaces of the beams prior to placing concrete. Coat the slab with appropriate admixtures.

Typical Spread Beam Haunch Detail

Suggested Form Support Detail for Spread Beams

Notes:
The Contractor shall be responsible for the design of the form seat and need.

Notes:
 Swords: 705-0700 - Asphalt Filler. Fixed End Material Options:
- N.Y.S. Mat. Spec. 701-05 - Concrete Grouting Materials for Slab and Bridge Seat. Expansion Joint Filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.

For expansion anchor bolt details, see Appendix 4A.
- Anchor anchors are squared off for steels and over minimum allowable shear angle is 50°.

Reinforcement:
- Location of reinforcement shall be shown. Details of reinforcement shall be shown. See Appendix 4A.
- Special joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
- Joint filler shall meet the requirements of N.Y.S. Mat. spec. 721-03. Fully filled.
PRESTRESSED UNIT

NOTE:
- ALL JOINTLESS BEAMS WITH 2'-0" DEEP SLAB UNITS TO END OF BEAM.
- THE BEAM ENDS SHALL NOT BE NOTCHED.
- SEE FIXED END FILL MATERIAL NOTE AND EXPANSION END FILL MATERIAL OPTION NOTE ON BD-PC12E.
- FOR JOINTLESS DETAIL SEE DESIGNER NOTES.
- FOR ANCHOR DOWEL DETAIL SEE BD-PC7E.
- "NOTCHOUT DETAIL TO BE USED ONLY WHEN A MULTI-CELL MODULAR JOINT SYSTEM IS USED. IMPOSED SHEAR AND END BLOCK REINFORCEMENT NOT SHOWN." (MULTI-CELL MODULAR JOINTS ONLY)

SUCCESS OF ENOUGH TO BE USED WITH STYROFOAM OR OTHER APPROVED NON-REMovable CORK MATERIAL. DESIGN REINFORCEMENT IN SECTION OF BEAM NOT SUPERSTRUCTURE SHALL BE PLACED AS SHOWN TO AVOID INTERFERENCE WITH OTHER PROJECT DETAILS.

HOLE DETAIL, SEE BD-ID6AE. FOR JOINTLESS DETAIL ONLY SHOWN FOR CLARITY.

NOTE:
- THE #4 LONGITUDINAL BARS (LAP TO #4 BARS IN BEAM)
- THE #5(E) BARS (TYP.)
- END FILL MATERIAL OPTION NOTE ON BD-PC12E.
- SEE FIXED END FILL MATERIAL NOTE AND EXPANSION END FILL MATERIAL OPTION NOTE ON BD-PC12E.
- FOR JOINTLESS DETAIL SEE DESIGNER NOTES.
- FOR ANCHOR DOWEL DETAIL SEE BD-PC7E.
- "NOTCHOUT DETAIL TO BE USED ONLY WHEN A MULTI-CELL MODULAR JOINT SYSTEM IS USED. IMPOSED SHEAR AND END BLOCK REINFORCEMENT NOT SHOWN." (MULTI-CELL MODULAR JOINTS ONLY)
LETTING OF 09/01/17

EFFECTIVE WITH THE ORIGINAL SIGNED BY

THE USE OF THE PCEF BULB TEE OR AASHTO I-BEAMS.

TYPICAL SECTIONS

PRESTRESSED CONCRETE

Office of Structures

<table>
<thead>
<tr>
<th>Type</th>
<th>Weight (kips/lin ft)</th>
<th>Area (in²)</th>
<th>Distance from C.G. to Bottom (in)</th>
<th>Moment of Inertia (in⁴)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>0.845</td>
<td>611</td>
<td>12.78</td>
<td>2.0931E5</td>
</tr>
<tr>
<td>Type II</td>
<td>0.875</td>
<td>645</td>
<td>16.08</td>
<td>3.527E5</td>
</tr>
<tr>
<td>Type III</td>
<td>0.820</td>
<td>825</td>
<td>26.76</td>
<td>1.020E6</td>
</tr>
<tr>
<td>Type IV</td>
<td>1.220</td>
<td>979</td>
<td>33.62</td>
<td>6.741E5</td>
</tr>
<tr>
<td>Type V</td>
<td>1.478</td>
<td>1035</td>
<td>37.29</td>
<td>8.741E5</td>
</tr>
</tbody>
</table>

AASHTO I BEAM PROPERTIES

<table>
<thead>
<tr>
<th>Type</th>
<th>Weight (kips/lin ft)</th>
<th>Area (in²)</th>
<th>Distance from C.G. to Bottom (in)</th>
<th>Moment of Inertia (in⁴)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>0.804</td>
<td>398</td>
<td>15.83</td>
<td>5.089E5</td>
</tr>
<tr>
<td>Type II</td>
<td>0.745</td>
<td>542</td>
<td>24.37</td>
<td>1.267E6</td>
</tr>
<tr>
<td>Type III</td>
<td>0.865</td>
<td>795</td>
<td>26.37</td>
<td>2.827E6</td>
</tr>
<tr>
<td>Type IV</td>
<td>1.205</td>
<td>1013</td>
<td>31.26</td>
<td>5.310E6</td>
</tr>
<tr>
<td>Type V</td>
<td>1.115</td>
<td>1080</td>
<td>38.28</td>
<td>1.020E7</td>
</tr>
</tbody>
</table>

DEsigned with:

Consult the Kentucky Bridge Manual for guidance regarding the use of the PCEF BULB TEE or AASHTO I-BEAM.

PRESTRESSED CONCRETE PCEF & AASHTO I-BEAM TYPICAL SECTIONS

Department of Transportation Office of Structures

PREPARED DATE: 7/27/17

REVIEWED BY: M.开局

APPROVED DATE: 7/27/17

ISSUED UNDER 13-000

DESIGNED BY: R. האון

LETTING NO: 11/28/17
INERTIA Ix(in. )

NEBT BEAM FORMS WERE ORIGINALLY DETAILED IN SI UNITS AND HAVE BEEN CONVERTED TO US CUSTOMARY UNITS.

DESIGNER NOTES:
CONSULT THE NYSDOT BRIDGE MANUAL FOR GUIDANCE REGARDING THE USE OF THE NORTHEAST BULB TEE BEAMS.

NEBT BEAM TYPES HAVE BEEN SIMPLIFIED IN 2 LISTS AND HAVE BEEN CONVERTED TO US CUSTOMARY UNITS.

NEBT BEAM PROPERTIES:

<table>
<thead>
<tr>
<th>BEAM TYPE</th>
<th>DEPTH (in.)</th>
<th>WEIGHT (k/ft.)</th>
<th>AREA (in.²)</th>
<th>DISTANCE FROM CAL TO BOTTOM (in.)</th>
<th>MOMENT OF INERTIA (in.⁴)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEBT 39</td>
<td>33.27</td>
<td>9.77</td>
<td>746</td>
<td>15.64</td>
<td>702197</td>
</tr>
<tr>
<td>NEBT 47</td>
<td>47.24</td>
<td>8.58</td>
<td>914</td>
<td>20.49</td>
<td>128496</td>
</tr>
<tr>
<td>NEBT 55</td>
<td>55.62</td>
<td>8.89</td>
<td>988</td>
<td>26.49</td>
<td>202961</td>
</tr>
<tr>
<td>NEBT 63</td>
<td>62.08</td>
<td>9.02</td>
<td>1049</td>
<td>29.28</td>
<td>286044</td>
</tr>
<tr>
<td>NEBT 71</td>
<td>71.61</td>
<td>1.021</td>
<td>1100</td>
<td>35.03</td>
<td>404932</td>
</tr>
<tr>
<td>NEBT 79</td>
<td>78.44</td>
<td>1.043</td>
<td>1135</td>
<td>37.43</td>
<td>448453</td>
</tr>
</tbody>
</table>
PAY LIMITS FOR LONGITUDINAL SAWCUT GROOVING

NOTE:
- If the contractor elects to use precast or cast-in-place concrete superstructure, he must submit a proposal designed and stamped by a professional engineer licensed to practice in the state of New York to the Deputy Chief Engineer Structures.

SUPERSTRUCTURE SLAB CLASS HP CONCRETE FOR SUPERSTRUCTURE SLAB

FASCIA LINE

NOTE:
- DESIGNER NOTES: LETTING OF 09/01/17 EFFECTIVE WITH THE ISSUED UNDER EB 17-010
- ORIGINAL SIGNED BY RICHARD MARCHIONE, P.E.
- APPROVED: 02/17/17

NOTE:
- For steel diaphragm details, see BD-PC18E and BD-PC19E.
- For deck slab reinforcement, see BD-SS SHEETS.
- See NYSDOT BRIDGE MANUAL SECTION 5 FOR MINIMUM OVERHANG REQUIREMENTS.
- If the high point of the slab is offset from the station line, the horizontal distance must be indicated and the station labeled "looking up station".
- See appropriate BD-SS sheets for jointless details at abutments.
- A see Notes of Bridge Manual Section 5 for minimum overhang requirements.
- For deck slab reinforcement, see BD-SS sheets.

NEBT/PCF TRANSVERSE SECTION

AASHTO I-BEAM TRANSVERSE SECTION

NOTES:
- Not shown for schematic purposes only, composite buying-handler type shall be determined based upon site conditions.
- If the high point of the slab is offset from the station line, the horizontal distance must be indicated and the station labeled "looking up station".
- See appropriate BD-SS sheets for jointless details at abutments.
- A see Notes of Bridge Manual Section 5 for minimum overhang requirements.
- For deck slab reinforcement, see BD-SS sheets.
- For steel diaphragm details, see BD-PC18E and BD-PC19E.
DESIGNER NOTE:
SPACING OF DIAPHRAGMS - NO INTERMEDIATE DIAPHRAGMS ON SPANS UP TO 50 ft.
RECOMMENDATIONS FOR SPANS GREATER THAN 50 ft. AND UP TO 100 ft.
DIAPHRAGMS AT THE END POINTS FOR SPANS GREATER THAN 100 ft.
NOTE: NO DIAPHRAGMS AT THE END FOR BEAMS WITH CONTINUOUS FOR LIVE
LOADS FOR SIMPLE SPANS AT THE END. THE DIAPHRAGMS MUST BE ADDED TO THE END POINT BEAMS.

IF ALL AZIMUTHS OF E TO E OF DIAPHRAGMS ARE THE SAME, THEN ONLY ONE DIAPHRAGM
SHOULD BE DETAIL AT THE END. E TO E OF DIAPHRAGMS

DESIGNERS SHOULD DETAIL UTILITY SUPPORTS WHERE APPLICABLE.

REVISED: 02/17/17

ERRATA

DESIGNED BY 
RICHARD_MARCHIONE, P.E.

ISSUED UNDER EB 17-010

ORIGINAL SIGNED BY

DEPUTY CHIEF ENGINEER

LETTING OF 09/01/17

EFFECTIVE WITH THE

OFFICE OF STRUCTURES

DEPARTMENT OF TRANSPORTATION

PRESTRESSED CONCRETE

NEBT/PEF/ASHTO I-BEAM

FRAMING PLANS

NOTES:

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING STABILITY OF ALL BEAMS DURING ALL PHASES OF CONSTRUCTION.

PLAN - SIMPLE SPAN
(0° < SKW < 20°)

PLAN - CONTINUOUS SPANS
(0° < SKW < 20°)

PLAN - SIMPLE SPAN
(SKW > 20°)

PLAN - CONTINUOUS SPANS
(SKW > 20°)
UTILITY SUPPORT DETAILS

**DESIGNER NOTES:**

- The number of bolts and inserts at the utility support connections must be determined.
- Openings may be cut in the web of the girder to accommodate utilities.
- The distance from the bottom of the girder to the top of the web openings shall be set equal for each girder, and the distance from the top of the web openings to the bottom of the girder shall be set equal for each girder.

**CONSOLES, SPACER BARS, SPACER TUBES, WASHERS, NUTS, ETC. WILL BE INSTALLED OR PROVIDED BY THE UTILITY COMPANY, AND THE CONTRACTOR SHALL PROVIDE HOLES IN DIAPHRAGM ANGLES FOR UTILITY CONNECTIONS.**

**NOTES:**

- Threads for 1/2" pipe shall be cast in the prestressed concrete. The 1/2" pipe should be installed in conjunction with the minimum ultimate tensile capacity of 11 kips in 7.5 ksi concrete.
- Threads for 1/2" pipe shall remain unobstructed for each girder.
- The 1/2" pipe shall be mechanically connected with the number of thread inserts indicated, in accordance with the N.Y.S. STD. MATERIAL SPECIFICATION 719-01.

**SPECIFICATIONS SUBSECTION 719-01:**

- Threads for 1/2" pipe shall remain unobstructed for each girder.
- The 1/2" pipe shall be mechanically connected with the number of thread inserts indicated, in accordance with the N.Y.S. STD. MATERIAL SPECIFICATION 719-01.

All bolts shall be calibrated in accordance with the N.Y.S. STD. SPECIFICATIONS SUBSECTION 719-01.
For beams made continuous for live load.

There are no diaphragms at the piers.

Additional detail necessary to make beams continuous for live load.

Partial section-beam connections for continuous spans at piers (I-beam shown)

Additional detail necessary to make beams continuous for live load.

Partial section-beam connections for continuous spans at piers (PCEF/NEBT shown)

Prestressed concrete beams continuous for live load details

There are no diaphragms at the piers.

Additional detail necessary to make beams continuous for live load.

Partial section-beam connections for continuous spans at piers (PCEF/NEBT shown)
COST OF BEAM REINFORCEMENT TO BE PAID FOR UNDER BEAM ITEM.

Type V

Deputy Chief Engineer

Letting of 09/01/17

All dimensions are out to out dimensions.

Effective with the

Richard_Marchione, P.E.

Issued under EB 17-010

Approved: 02/17/17

For designer notes, see BD-Pcem.

Alternate Section A-A

For bottom flange reinforcement options, see Section B-B.

The prestressing strands shall be G450 with low relaxation

strand with a guaranteed ultimate strength of 270 kpsi.

Design values for the initial stress at transfer = 0.7

ksi. The allowable tension of the prestressed concrete

unit at service limit state = 0.7 ksi, HL-93 permit validated.

All exposed corners, except the top, shall be chamfered 0.5

in. All temporary inserts shall be approved by the Deputy Chief

Engineer (Structures) and detailed on the Prestressed Concrete

Structure.

The tops of prestressed units shall receive a transverse

chamfered finish with an amplitude of 3/4 in.

Notes:

The Prestressing Strands shall be G450 with low relaxation

strand with a guaranteed ultimate strength of 270 kpsi.

Design values for the initial stress at transfer = 0.7

ksi. The allowable tension of the prestressed concrete

unit at service limit state = 0.7 ksi, HL-93 permit validated.

All exposed corners, except the top, shall be chamfered 0.5

in. All temporary inserts shall be approved by the Deputy Chief

Engineer (Structures) and detailed on the Prestressed Concrete

Structure.

The tops of prestressed units shall receive a transverse

chamfered finish with an amplitude of 3/4 in.

Notes:

The prestressing Strands shall be G450 with low relaxation

strand with a guaranteed ultimate strength of 270 kpsi.

Design values for the initial stress at transfer = 0.7

ksi. The allowable tension of the prestressed concrete

unit at service limit state = 0.7 ksi, HL-93 permit validated.
The prestressed strands shall be 8 in. (203 mm), with low relaxation. Strand with a guaranteed ultimate strength of 270 ksi. A minimum tension of 15 ksi. is required for all prestressed concrete units.

Required minimum concrete strength at transfer = 7 ksi.

Recommended minimum concrete strength at 28 days = 15 ksi.

Recommended minimum concrete strength at 56 days = 30 ksi.

The strands shall be protected against corrosion by the application of zinc paint in accordance with AASHTO M 546-85.

The tops of prestressed units shall receive a transverse reinforcement with an amplitude of 0.6 in. for a distance of 1.5 x beam depth.

The allowable tension in the prestressed concrete units:

<table>
<thead>
<tr>
<th>Section</th>
<th>Prestressed Concrete Unit</th>
<th>Allowable Tension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prestressed Rights</td>
<td>15 ksi.</td>
</tr>
<tr>
<td>2</td>
<td>Prestressed Left</td>
<td>15 ksi.</td>
</tr>
</tbody>
</table>

The tensile force shall be 43.9 kips per strand for a strand with a guaranteed ultimate strength of 270 ksi.

The top flange reinforcement shall be ASTM A615, Grade 60.

The cost of beam reinforcement to be paid for under beam item.

**NOTE:**

- For bottom flange reinforcement options, see Section A-A.
- End zone reinforcement.
- Required minimum concrete strength at 56 days = 10 ksi.

**PRESTRESSED CONCRETE NEBT REINFORCEMENT**

<table>
<thead>
<tr>
<th>Material</th>
<th>Length</th>
<th>Type</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>#4</td>
<td>(E or G) composite shear bars at #8, design spacing</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>#4</td>
<td>(E or G) composite shear bars at #8, design spacing</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>#4</td>
<td>(E or G) composite shear bars at #8, design spacing</td>
<td></td>
</tr>
</tbody>
</table>

**END ZONE REINFORCEMENT**

- #4 top flange reinforcement
- #4 bottom flange reinforcement
- #4 (E or G) composite shear bars at required design spacing

**REINFORCEMENT AT TRANSFER**

- #4 top flange reinforcement
- #4 bottom flange reinforcement
- #4 (E or G) composite shear bars at required design spacing

**REINFORCEMENT AT SERVICE LIMIT STATE**

- #4 top flange reinforcement
- #4 bottom flange reinforcement
- #4 (E or G) composite shear bars at required design spacing

**TOTAL WEIGHT**

- #4 top flange reinforcement
- #4 bottom flange reinforcement
- #4 (E or G) composite shear bars at required design spacing

**BEAM DEPTH**

- #4 top flange reinforcement
- #4 bottom flange reinforcement
- #4 (E or G) composite shear bars at required design spacing

**NOTE:**

- For bottom flange reinforcement options, see Section A-A.
- End zone reinforcement.
- Required minimum concrete strength at 56 days = 10 ksi.

**PRESTRESSED CONCRETE NEBT PLAN AND ELEVATION**

- #4 top flange reinforcement
- #4 bottom flange reinforcement
- #4 (E or G) composite shear bars at required design spacing

**SECTION A-A**

- #4 top flange reinforcement
- #4 bottom flange reinforcement
- #4 (E or G) composite shear bars at required design spacing

**NOTE:**

The prestressed strands shall be 8 in. (203 mm), with low relaxation. Strand with a guaranteed ultimate strength of 270 ksi. A minimum tension of 15 ksi. is required for all prestressed concrete units.

Recommended minimum concrete strength at 28 days = 15 ksi.

Recommended minimum concrete strength at 56 days = 30 ksi.

The strands shall be protected against corrosion by the application of zinc paint in accordance with AASHTO M 546-85.

The tops of prestressed units shall receive a transverse reinforcement with an amplitude of 0.6 in. for a distance of 1.5 x beam depth.

The allowable tension in the prestressed concrete units:

<table>
<thead>
<tr>
<th>Section</th>
<th>Prestressed Concrete Unit</th>
<th>Allowable Tension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prestressed Rights</td>
<td>15 ksi.</td>
</tr>
<tr>
<td>2</td>
<td>Prestressed Left</td>
<td>15 ksi.</td>
</tr>
</tbody>
</table>

The tensile force shall be 43.9 kips per strand for a strand with a guaranteed ultimate strength of 270 ksi.

The top flange reinforcement shall be ASTM A615, Grade 60.

The cost of beam reinforcement to be paid for under beam item.

**NOTE:**

- For bottom flange reinforcement options, see Section A-A.
- End zone reinforcement.
- Required minimum concrete strength at 56 days = 10 ksi.
**Embedded Bearing Connection Plate Details**

(PCEF Shown, NEBT Similar)

**Notes:**
- The bearing connection plate is not required for integral abutment.
- Embedded bearing connection plates shall be 3/16" after service to steel, and shall be included in accordance with material specifications. The bearing connection plate shall be attached to the beam prior to galvanizing.
- Anchor stud must meet the requirements listed in the embedded bearing plate details.
- Impact of bearing plates not in contact with concrete shall be calculated in accordance with material specifications. The bearing connection plate shall be treated with an approved galvanized material.
### HAUNCH TABLE

<table>
<thead>
<tr>
<th>REQ'D BOTTOM OF SLAB ELEVATION</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP OF BEAM EL. (FIELD MEASURE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEPTH OF HAUNCH TEST</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:**
- The contractor shall provide the engineer with the completed haunch table prior to setting the bottom framework of the deck.

### CAMBER TABLE (MED-SPAN)

- Camber due to prestressed force and beam bending at transfer.
- Camber due to prestressed force and beam bending with growth.
- Camber growth is assumed to be 50% of the camber at transfer.

### DESIGN LOAD TABLE

<table>
<thead>
<tr>
<th>UNIT</th>
<th>REQ'D AT MID-SPAN</th>
<th>MAX. SU.</th>
<th>WGT PER FT</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEAM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLAB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLAP FORMS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UTILITIES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNDERR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHADED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIRE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NYSDOT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Optional Flange Clipping Detail

- Top of beam reinforcement.

### Typical Haunch Detail

- Steel shim plates shall be provided for Type D beams without overlays.
- Use minimum 2" for spans < 100'. For spans > 100', use 2" minimum.

### Sample Stay in Place Form Attachment Detail

- The contractor shall be responsible for the design of the FSP form seat and welds.
- The contractor shall be responsible for removing the concrete form seat and weld.
- The designer shall provide complete haunch tables, camber tables, and design load tables.

### Miscellaneous Details

- The contractor shall remunerate the engineer for the haunch detail shown on the attached plate before installing the FSP form.
**Design Notes:**

The top surface of Type B next beams shall receive a polyester fiber-reinforced concrete (PFRC) overlay as an initial overlay with water-based primer on the surface to be ground and painted.

- If a polyester fiber-reinforced concrete overlay is used, it shall be a minimum 1/4" thick.
- An asphalt overlay is not permitted. Diamond grinding shall not be used as a method of achieving the required surface texture.

- Diamond grinding shall be used to improve porosity in the top surface of the deck, but it shall not be used as a method of achieving the required surface texture.

- The top surface of Type C next beams shall receive a polyester fiber-reinforced concrete (PFRC) overlay as an initial overlay with water-based primer on the surface to be ground and painted.

- The top surface of Type D next beams shall receive a polyester fiber-reinforced concrete (PFRC) overlay as an initial overlay with water-based primer on the surface to be ground and painted.

- The top surface of Type E next beams shall receive a polyester fiber-reinforced concrete (PFRC) overlay as an initial overlay with water-based primer on the surface to be ground and painted.

**Beam Layout Plan:**

- Total Length: 100'
- Beam Type: Type A
- Beam Width: 8'
- Beam Spacing: 20'
- Beam Depth: 6'
- Beam Material: Steel
- Beam Ends: Reinforced Concrete
- Beam Splices: Reinforced Concrete

**Design Details:**

- **Face of Barrier:** See Detail "A"
- **Top of Overlay:** Diamond grinding option
- **Overlay Option:** Detail "B"
- **Overlay Option:** Detail "C"
- **Overlay Option:** Detail "D"
- **Overlay Option:** Detail "E"
- **Overlay Option:** Detail "F"

**Joint Options:**

- **Overlaid Joint Options:**
  - Type A: Joint with Overlay
  - Type B: Joint with Overlay
  - Type C: Joint with Overlay
  - Type D: Joint with Overlay
  - Type E: Joint with Overlay

**Performance:**

- High Performance Internal Curing Concrete Joint (HPC Joint)
- Ultra High Performance Concrete Joint (UHPC Joint)

**Materials:**

- High Performance Internal Curing Concrete Joint
- Ultra High Performance Concrete Joint
- Polyester Fiber-Reinforced Concrete (PFRC)
- Asphalt Overlay
- Water-Based Primer
- Water-Proof Membrane

**Section:**

- Section 9 of the N.Y.S. Bridge Manual for Recommended Methods of Camber Management.
### Design Load Table

<table>
<thead>
<tr>
<th>Unit</th>
<th>Dead Load</th>
<th>Live Load</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MAXIMUM ALLOWABLE TENSION IN THE PRESTRESSED CONCRETE UNITS:**
- 96.00 kips
- PRETENSIONING IF REQUIRED BY DESIGN.

### Camber Table (Mid-Span)

<table>
<thead>
<tr>
<th>Camber Due to Pretensioning Force and Beam Reaction at Abutments</th>
<th>Camber Due to Pretensioning Force and Beam Reaction at Midpoint</th>
<th>Camber Due to Precast Beam Moment</th>
<th>Deflection Due to Precast Joint Reaction Load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>CAMBER SPREAD IS AVERAGE TO THE SIZE OF THE CAMBER AT TRANSVERSE.</strong></td>
</tr>
</tbody>
</table>

### Typical Section & Strand Details

- **BEAM OVERHANG PAST END**
- **B E A M**
- **LETTING OF 09/01/17 EFFECTIVE WITH THE RICHARD_MARCHIONE, P.E.**
- **1727**
- **19.49**
- **1658**
- **13.75**
- **29.00**
- **120.00**
- **NEXT 28 D APPROVED: 02/17/17**
- **1841**
- **22.17**
- **1767**
- **13.50**
- **33.00**
- **120.00**
- **NEXT 32 D**
- **2061**
- **280397**
- **1979**
- **41.00**
- **120.00**
- **NEXT 36 D**
- **1502**
- **95413**
- **1442**
- **13.75**
- **29.00**
- **96.00**
- **NEXT 28 D**
- **1952**
- **193181**
- **1658**
- **13.25**
- **37.00**
- **96.00**
- **NEXT 36 D**
- **1836**
- **26.26**
- **1763**
- **41.00**
- **96.00**
- **NEXT 40 D**

### Typical Strand Locations

- **A** = DENOTES STRAIGHT BONDED STRAND
- **D** = DENOTES STRAIGHT DEBONDED STRAND
- **N** = DENOTES STRANDS TENSIONED TO 2.2 kips

### Camber Table

<table>
<thead>
<tr>
<th>BEAM TYPE</th>
<th>BEAM PLANES (INCHES)</th>
<th>BEAM SPANS (INCHES)</th>
<th>FRAMES (INCHES)</th>
<th>D (IN.)</th>
<th>A (IN.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEXT 6 D</td>
<td>46.20</td>
<td>12.00</td>
<td>13.20</td>
<td>1763</td>
<td>259788</td>
</tr>
<tr>
<td>NEXT 8 D</td>
<td>54.20</td>
<td>12.00</td>
<td>13.20</td>
<td>1593</td>
<td>259788</td>
</tr>
<tr>
<td>NEXT 10 D</td>
<td>62.00</td>
<td>12.00</td>
<td>13.20</td>
<td>1593</td>
<td>259788</td>
</tr>
<tr>
<td>NEXT 12 D</td>
<td>62.00</td>
<td>12.00</td>
<td>13.20</td>
<td>1593</td>
<td>259788</td>
</tr>
<tr>
<td>NEXT 14 D</td>
<td>70.00</td>
<td>12.00</td>
<td>13.20</td>
<td>1593</td>
<td>259788</td>
</tr>
</tbody>
</table>

### Type D Next Beam Properties

<table>
<thead>
<tr>
<th>BEAM TYPE</th>
<th>BASE PLANE (INCHES)</th>
<th>SLOPE (IN.)</th>
<th>F (INCHES)</th>
<th>120.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEXT 6 D</td>
<td>46.20</td>
<td>12.00</td>
<td>13.20</td>
<td>1763</td>
</tr>
<tr>
<td>NEXT 8 D</td>
<td>54.20</td>
<td>12.00</td>
<td>13.20</td>
<td>1593</td>
</tr>
<tr>
<td>NEXT 10 D</td>
<td>62.00</td>
<td>12.00</td>
<td>13.20</td>
<td>1593</td>
</tr>
<tr>
<td>NEXT 12 D</td>
<td>70.00</td>
<td>12.00</td>
<td>13.20</td>
<td>1593</td>
</tr>
</tbody>
</table>

### Camber Notes

- IN BEAMS WHERE THE TOP SURFACE OF THE CONCRETE UNITS IS ALLOWED TO DEFORM IN A BENT DAG HINT WITHOUT DEFORMATIONS UNLESS ALTERED BY THE DESIGN-CERTIFIED ENGINEER'S INSTRUCTIONS, THE BEAM SHALL BE TOSTED TO FULL PRETENSIONING IF REQUIRED BY DESIGN.

### Section 719.01

- THE COST OF COATING THE STRANDS SHALL BE INCLUDED IN THE PRICE BID FOR THE BEAM ITEM.

### Additional Notes

- **DESIGNER NOTES:**
  - AX x AX = AREA MIN. (IN.²)
  - W x H = WIDTH X HEIGHT (IN.)
  - D x L = DEPTH X LENGTH (IN.)
  - 90° = CHAMFER (TYP.)
  - 2" = CHAMFER (TYP.)

### Typical Strand Locations

- **A** = DENOTES STRAIGHT BONDED STRAND
- **D** = DENOTES STRAIGHT DEBONDED STRAND
- **N** = DENOTES STRANDS TENSIONED TO 2.2 kips

### Design Load Table

- **MAXIMUM ALLOWABLE TENSION IN THE PRESTRESSED CONCRETE UNITS:**
  - 96.00 kips
  - PRETENSIONING IF REQUIRED BY DESIGN.

### Camber Table (Mid-Span)

- **CAMBER SPREAD IS AVERAGE TO THE SIZE OF THE CAMBER AT TRANSVERSE.**

### Typical Strand Locations

- **A** = DENOTES STRAIGHT BONDED STRAND
- **D** = DENOTES STRAIGHT DEBONDED STRAND
- **N** = DENOTES STRANDS TENSIONED TO 2.2 kips

### Type D Next Beam Properties

<table>
<thead>
<tr>
<th>BEAM TYPE</th>
<th>BASE PLANE (INCHES)</th>
<th>SLOPE (IN.)</th>
<th>F (INCHES)</th>
<th>120.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEXT 6 D</td>
<td>46.20</td>
<td>12.00</td>
<td>13.20</td>
<td>1763</td>
</tr>
<tr>
<td>NEXT 8 D</td>
<td>54.20</td>
<td>12.00</td>
<td>13.20</td>
<td>1593</td>
</tr>
<tr>
<td>NEXT 10 D</td>
<td>62.00</td>
<td>12.00</td>
<td>13.20</td>
<td>1593</td>
</tr>
<tr>
<td>NEXT 12 D</td>
<td>70.00</td>
<td>12.00</td>
<td>13.20</td>
<td>1593</td>
</tr>
</tbody>
</table>

### Camber Notes

- IN BEAMS WHERE THE TOP SURFACE OF THE CONCRETE UNITS IS ALLOWED TO DEFORM IN A BENT DAG HINT WITHOUT DEFORMATIONS UNLESS ALTERED BY THE DESIGN-CERTIFIED ENGINEER'S INSTRUCTIONS, THE BEAM SHALL BE TOSTED TO FULL PRETENSIONING IF REQUIRED BY DESIGN.
#4 (E) @ 8" (ANCHOR BAR FOR BRUSH CURB OPTION)

#5 (X) BARS @ 8" MAX. (BOT.)

#5 (X) BARS @ 8" MAX. (TOP)

SECTION B-B FOR PLACEMENT STEM) LAP TO STIRRUPS (SEE #4 PLAIN BARS (TYP. EACH STEM))

BEAM PLAN

*B30 BARS @ 6" WALL TO E BRGS. TOP, hooking at FASCIA

*B30 BARS @ 6" WALL TO E BRGS. TOP, hooking at FASCIA

#4 PLAIN BARS (TYP.) LAP TO TRANSVERSE BARS

REINFORCEMENT PLAN

*B30 BARS @ 6" WALL 1 TO 1 BRGS. LAP TO TRANSVERSE BARS

#4 PLAIN STIRRUP BARS @ DESIGN SPACING (TYP. EACH STEM) (PLAIN BAR)

REINFORCEMENT ELEVATION

#4 PLAIN STIRRUP BARS @ DESIGN SPACING (TYP. EACH STEM) (PLAIN BAR)

ADDITIONAL END-ZONE REINFORCEMENT (TYP. EACH STEM) (PLAIN BAR)

ADDITIONAL END-ZONE REINFORCEMENT (TYP. EACH STEM) (PLAIN BAR)

NOTES:

01 DESIGNER'S NOTES

02 DESIGNER'S NOTES

DESIGNER'S NOTES:

ALL REINFORCEMENT TO BE VERIFIED BY DESIGNER.

FOR SECTIONS A-A AND B-B, SEE DRAWING BD-PC33E.

FOR SECTIONS A-A AND B-B, SEE DRAWING BD-PC33E.

FOR SECTIONS A-A AND B-B, SEE DRAWING BD-PC33E.

FOR SECTIONS A-A AND B-B, SEE DRAWING BD-PC33E.

FOR SECTIONS A-A AND B-B, SEE DRAWING BD-PC33E.

FOR SECTIONS A-A AND B-B, SEE DRAWING BD-PC33E.

FOR SECTIONS A-A AND B-B, SEE DRAWING BD-PC33E.

FOR SECTIONS A-A AND B-B, SEE DRAWING BD-PC33E.
ADDITIONAL #4 BARS @ 6" (FOR TOP FLANGES OVER 11\1/2" THICK)

ADDITIONAL TOP MAT REINFORCEMENT 2" C.O.V.

STANDARD BEAM REINFORCEMENT

ADJUSTMENT WHEN NECESSARY.

BEAMS AFTER ERECTION, AND PROVIDE BEARING SHIM DETAILS FOR THE PLANS SHOULD INCLUDE NOTES REQUIRING SURVEY OF THE VERTICAL CURVE ORDINATE.

TOP FLANGE MINIMUM AT MIDSPAN DUE TO BEAM CAMBER AND SAG VERTICAL CURVE:
- VERTICAL CURVE ORDINATE IS GREATER THAN BEAM CAMBER.
- IS LESS THAN BEAM CAMBER.
- TOP FLANGE MINIMUM AT ENDS IF TOP FLANGE MINIMUM AT MIDSPAN IF VERTICAL CURVE ORDINATE IS GREATER THAN BEAM CAMBER.

TANGENT GRADE:
- ADDITIONAL FLANGE THICKNESS.
- PROFILE. THE DESIGN OF THE BEAM SHALL ACCOUNT FOR ANY ESTIMATED BEAM CAMBER (INCLUDING GROWTH) AND THE ROADWAY SURFACE.

DIFFERENCE OF 1" OR MORE BETWEEN THE TOP OF CAMBERED BEAM AND THE ROADWAY SURFACE.

FOR TYPE "D" NEXT BEAMS WITHOUT AN OVERLAY, THAT HAVE A FLANGE TRANSITION SCHEMATIC SHALL BE SHOWN IN THE PLANS FOR THE TOP FLANGE THICKNESS SHOWN IN OVERLAY. THAT HAVE A

THE VERTICAL CURVE ORDINATE SHALL BE CALCULATED BASED ON THE ESTIMATED BEAM CAMBER INCLINED GROWTH AND THE CURVE PROFILE. THE DESIGN OF THE BEAM SHALL ACCOUNT FOR ANY ASSUMED FLANGE THICKNESS.

THE PLANS SHOULD INCLUDE NOTES REGARDING SURFACING OF THE ROAD AFTER ERECTION, AND PROVIDE SURVEY DETAILS FOR ADJUSTMENT WHEN NECESSARY.

ADDITIONAL TOP MAT REINFORCEMENT (FOR TOP FLANGES OVER 11\1/2" THICK)
PRESTRESSED CONCRETE "NEXT" (TYPE F) BEAMS @ X'-X" EA. AND ... JOINTS @ 1/8" = X'-X"

**DESIGNER NOTES:**
- Number is shown for schematic purposes only. Bridge railing type shall be determined based upon site conditions.
- For details of concrete barriers or steel railings, see appropriate BD sheets.
- For deck slab reinforcement, see BD-SSE sheets.
- Maximum allowable skew angle is 15°. The ends of the beams shall be skewed for safety design.
- Dimensions must be calculated for each individual structure at each fascia.

**NOTE:**
- The differential height H between the beams exceeds 1/8". The contractor shall adjust the beam ends to ensure shear interfaces meet the requirements of Wooden Western Code. The differential height shall be included in the unit price for the next beam item.

**FASCIA LINE**

**BEAM LAYOUT PLAN**

**DETAIL "A"**

**TRANSVERSE SECTION**

**REVERSED (STRUCTURES)**

**DEPUTY CHIEF ENGINEER**

**Office of Structures**

**ERRATA 28- FEB - 2017 9:49**

**B D - P C 3 5 E**
**Typical Section - Type F Next Beam**

### Slab Thickness Table

<table>
<thead>
<tr>
<th>Beam Type</th>
<th>Slab Elevation</th>
<th>Mid-Span</th>
<th>½ Span</th>
<th>Slab Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beam Type</td>
<td>Slab Elevation</td>
<td>¼ Span</td>
<td>MID-Span</td>
<td>Slab Elevation</td>
</tr>
<tr>
<td>Beam Type</td>
<td>Slab Elevation</td>
<td>½ Span</td>
<td>MID-Span</td>
<td>Slab Elevation</td>
</tr>
</tbody>
</table>

### Camber Table (Mid-Span)

- **Camber Due to Prestressed Force and Stress Loss following Transfer**
- **Deflection Due to Slab Dead Load**
- **Deflection Due to Superimposed Dead Load**

**Camber Growth is Assumed to be 60% of the Camber at Transfer.**

### Design Load Table

- **Unit**: Length of Beam @ Maximum Slab Thickness
- **Material**: Normal Weight: 145 lbs/ft

**Assumed Live Load**: 14.0 kips and Next Beam Vehicle for L.P. = 75 for 100 Y.P.
INDICATE SKEW ANGLE

FOR SECTIONS A-A AND B-B, SEE DRAWING PC38E.

* BAR REINFORCEMENT SHOWN IS PARALLEL TO SKEW.

NOTES:

- BEAM PLAN
  - #4 BARS @ 2" (TYP.) SPACED BETWEEN STRANDS
  - #4 BAR (BUNDLED TO THE #4 BARS @ 6"
  - THE #4 BARS @ 6" (MAX.) #4 BARS @ 1'-3" (MAX.) TO STIRRUPS (SEE SECTION B-B)

- REINFORCEMENT PLAN
  - #4 BARS @ 6" (TYP.) LAP TO STIRRUPS, (SEE SECTION B-B)
  - #4 PLAIN STIRRUP BARS @ DESIGN SPACING (TYP. EACH STEM)
  - #4 PLAIN STIRRUP BARS @ DESIGN SPACING (TYP. EACH STEM) (MAX. 6"
  - THE #4 BARS @ 6" (MAX.) #4 BARS @ 1'-3" (MAX.) TO STIRRUPS (THE #4 BARS @ 6"

- REINFORCEMENT ELEVATION
  - ADDITIONAL END ZONE REINFORCEMENT
  - SKEW BETWEEN STRANDS AS NEEDED
  - BY DESIGN, (TYP. EACH STEM PLAN BAR)
  - #4 BARS @ 2" (TYP.) EACH STEM LAP TO STIRRUPS SEE SECTION B-B FOR PLACEMENT

- DESIGNER NOTES:
  - ALL REINFORCEMENT TO BE VERIFIED BY DESIGNER.
  - THE TOP FLANGE IS INTENDED TO ACT AS A DECK FORM ONLY. A PRESTRESSED CONCRETE SHEET SHALL BE DESIGNED TO SUPPORT THE WET DECK CONCRETE ONLY.
  - SHEAR REINFORCING SHOULD BE KEPT TO #4 BARS IN SPORT TO SUPPORT THE WET DECK CONCRETE ONLY.
  - ADDITIONAL END ZONE REINFORCEMENT SHALL BE PLACED ON EACH PRESTRESSED BEAM SHALL BE PLACED ON EACH PRESTRESSED BEAM (PLAIN BAR)
  - THE #4 BARS @ 2" TO THE #4 BARS @ 6"

- NOTATIONS:
  - "O" BAR REINFORCEMENT SHOWN IS PARALLEL TO SHEAR.
  - FOR SECTIONS A-A, B-B, SEE DRAWING PC38E.
PRESTRESSED CONCRETE NEXT BEAM REINFORCEMENT (TYPE F)

**SECTION A-A**

**SECTION B-B**

**PRESTRESSED CONCRETE NEXT BEAM REINFORCEMENT (TYPE F)**

<table>
<thead>
<tr>
<th>WITH</th>
<th>TYPE</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>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDX</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDX</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDX</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDX</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional End Zone Reinforcement**
- Place between strands as needed by designer (Type F plain bar)

**DESIGNER NOTES**
- The number and placement of strands shall be determined by the designer.
- In the bar list, designer to replace X'-X" with actual dimension required.

**NOTES**
- The tops of prestressed units shall receive a 1/4" deep transverse rake finish.
- For location of sections A-A and B-B, see BD-PC37E.
- The contractor's attention is directed to the inherent instability of the beams during shipping and handling, and shall take measures to ensure that the beams are not damaged. For samples and handling shall be shown in the shop drawings.

**HANDLING SHALL BE SHOWN IN THE SHOP DRAWINGS.**

**INSTALLATION METHODS OF STABILIZING THE BEAMS FOR SHIPPING AND HANDLING, AND SHALL TAKE THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE INHERENT INSTABILITY OF THE BEAMS DURING SHIPPING AND HANDLING, AND SHALL TAKE MEASURES TO ENSURE THAT THE BEAMS ARE NOT DAMAGED. FOR SAMPLES AND HANDLING SHALL BE SHOWN IN THE SHOP DRAWINGS.**

**LETTERING OF 09/01/17**

**EFFECTIVE WITH THE ISSUE OF 10-20-17**

**RICHARD_MARCHIONE, P.E.**

**APPROVED: 02/17/17**

**ORIGINAL SIGNED BY**

**DEPUTY CHIEF ENGINEER**

**Office of Structures**

**Department of Transportation**

**PRESTRESSED CONCRETE NEXT BEAM REINFORCEMENT SECTIONS**
INTO BEAM STEM (TYP.)
THREADED INSERT CAST

VARIES
SECTION B-B
BEAM BOTTOM OF
HEADED ANCHOR STUD

PRESTRESSED CONC. NEXT BEAM UNIT
COST TO BE INCLUDED IN PRICE BID FOR

TYP. BLOCKOUT
4"

OF BEAM STEM
1"
MIN. COV. (TYP.)

STUD (TYP.)

#4 STIRRUPS

OF BEAM STEM
2"

ƒ"
1"
2"
2"
2" CHAMFER (TYP.)
END OF BEAM

1"
MIN. (TYP.)

THREADED INSERTS IN BEAMS SHALL BE MECHANICAL CONNECTORS
OF 11 kips IN 7.5 ksi CONCRETE.
THE ‡" DIA. H.S. THREADED
THREADED INSERTS FOR ‡" DIA. ASTM A307 GRADE A BOLTS SHALL
WITH COST TO BE INCLUDED IN THE PRICE BID FOR THE UTILITY ITEM.
WILL BE FURNISHED AND INSTALLED BY THE UTILITY COMPANY
CONDUITS, CONDUIT SUPPORTS, WASHERS, NUTS, ETC.

UTILITY NOTES:
APPROVED GALVANIZING MATERIAL.
WELDING TO BEARING, THE WELDED AREA SHALL BE RECOATED WITH AN
BE GALVANIZED IN ACCORDANCE WITH MATERIAL SPEC. 719-01.  AFTER
SURFACES OF BEARING PLATES NOT IN CONTACT WITH CONCRETE SHALL
709-05, STUD SHEAR CONNECTORS.
ANCHOR STUDS SHALL MEET THE REQUIREMENTS LISTED IN SUBSECTION
STEEL, AND SHALL BE GALVANIZED IN ACCORDANCE WITH MATERIAL
EMBEDDED BEARING CONNECTION PLATES SHALL BE ASTM A709 (GRADE 50)
EMBEDDED BEARING PLATE CONNECTION NOTES:
THE PLATES PRIOR TO GALVANIZING.
THE HEADED ANCHOR STUDS SHALL BE ATTACHED TO
STEEL, AND SHALL BE GALVANIZED IN ACCORDANCE WITH MATERIAL
EMBEDDED BEARING CONNECTION PLATES SHALL BE ASTM A709 (GRADE 50)
THE SHIM PLATE DETAIL SHOWN ON THIS DRAWING SHALL BE
DESIGNED NOTION
THE SHIM PLATE DETAIL SHOWN ON THIS DRAWING SHALL BE USE FOR TYPE D NEXT BEAMS REPORTS DEPARTMENTS.
THE BEARING CONNECTION PLATES SHALL BE PROVIDED FOR ALL NEXT BEAMS REGARDLESS OF ABUTMENT TYPE. A WELD BETWEEN BEARING PLATE AND BEARING PAD SHALL ALIGN WITH THE CUSHION SEAL AND ARE NOT REQUIRED FOR SPECIAL ABUTMENT APPLICATIONS.

BEARING PAD PLAN
SECTION C-C
BEARING PAD PLACEMENT
AND SHIM PLATE DETAIL
(INTEGRAL ABUTMENTS)

BEARING PAD PLAN
SECTION C-C

END OF BEAM

ANCHOR STUD CLEARANCE DETAIL

EMBEDDED BEARING CONNECTION PLATE

EMBEDDED BEARING PLATE CONNECTION NOTES:
EMBEDDED BEARING PLATE CONNECTIONS SHALL BE ATTACHED TO CONCRETE IN ACCORDANCE WITH MATERIAL SPECIFICATION 719-01. THE PLATES SHALL BE ATTACHED TO THE PLATES Prior To Galvanizing. ANCHOR STUDS MUST MEET THE REQUIREMENTS LISTED IN SUBSECTION 100-05, STUD SHEAR CONNECTIONS.

SURFACES OF BEARING PLATES NOT IN CONTACT WITH CONCRETE SHALL BE CALIBRATED IN ACCORDANCE WITH MATERIAL SPECIFICATION 719-01. AFTER MELDLING TO BEARING, THE WELDED AREA SHALL BE RECOATED WITH AN APPROVED GALVANIZING MATERIAL.

UTILITY NOTES:
CONDUITS, CONDUIT SUPPORTS, WASHERS, NUTS, ETC. WILL BE FURNISHED AND INSTALLED BY THE UTILITY COMPANY. THE COST TO BE INCLUDED IN THE PRICE BID FOR THE UTILITY ITEM.

THREADED INSERTS FOR ‡" DIA. BOLTS SHALL BE CUSHION SEALS. THE CUSHION SEAL SHALL BE DESIGNED TO ALLOW FOR ADJUSTMENTS IN THE FIELD IF NECESSARY.
THREADED INSERTS IN BEAMS SHALL BE MECHANICAL CONNECTORS PROVIDING 11 KIPS IN 7.5 KSI CONCRETE IN ACCORDANCE WITH MATERIAL SPECIFICATION 719-01.

INTEGRAL ABUTMENTS
AND SHIM PLATE DETAIL

BEARING PAD PLACEMENT
AND SHIM PLATE DETAIL
(INTEGRAL ABUTMENTS)

BEARING PAD PLAN
SECTION C-C

END OF BEAM

ANCHOR STUD CLEARANCE DETAIL

EMBEDDED BEARING CONNECTION PLATE

EMBEDDED BEARING PLATE CONNECTION NOTES:
EMBEDDED BEARING PLATE CONNECTIONS SHALL BE ATTACHED TO CONCRETE IN ACCORDANCE WITH MATERIAL SPECIFICATION 719-01. THE PLATES SHALL BE ATTACHED TO THE PLATES Prior To Galvanizing. ANCHOR STUDS MUST MEET THE REQUIREMENTS LISTED IN SUBSECTION 100-05, STUD SHEAR CONNECTIONS.

SURFACES OF BEARING PLATES NOT IN CONTACT WITH CONCRETE SHALL BE CALIBRATED IN ACCORDANCE WITH MATERIAL SPECIFICATION 719-01. AFTER MELDLING TO BEARING, THE WELDED AREA SHALL BE RECOATED WITH AN APPROVED GALVANIZING MATERIAL.

UTILITY NOTES:
CONDUITS, CONDUIT SUPPORTS, WASHERS, NUTS, ETC. WILL BE FURNISHED AND INSTALLED BY THE UTILITY COMPANY. THE COST TO BE INCLUDED IN THE PRICE BID FOR THE UTILITY ITEM.

THREADED INSERTS FOR ‡" DIA. BOLTS SHALL BE CUSHION SEALS. THE CUSHION SEAL SHALL BE DESIGNED TO ALLOW FOR ADJUSTMENTS IN THE FIELD IF NECESSARY.
THREADED INSERTS IN BEAMS SHALL BE MECHANICAL CONNECTORS PROVIDING 11 KIPS IN 7.5 KSI CONCRETE IN ACCORDANCE WITH MATERIAL SPECIFICATION 719-01.

INTEGRAL ABUTMENTS
AND SHIM PLATE DETAIL

BEARING PAD PLACEMENT
AND SHIM PLATE DETAIL
(INTEGRAL ABUTMENTS)

BEARING PAD PLAN
SECTION C-C

END OF BEAM

ANCHOR STUD CLEARANCE DETAIL

EMBEDDED BEARING CONNECTION PLATE

EMBEDDED BEARING PLATE CONNECTION NOTES:
EMBEDDED BEARING PLATE CONNECTIONS SHALL BE ATTACHED TO CONCRETE IN ACCORDANCE WITH MATERIAL SPECIFICATION 719-01. THE PLATES SHALL BE ATTACHED TO THE PLATES Prior To Galvanizing. ANCHOR STUDS MUST MEET THE REQUIREMENTS LISTED IN SUBSECTION 100-05, STUD SHEAR CONNECTIONS.

SURFACES OF BEARING PLATES NOT IN CONTACT WITH CONCRETE SHALL BE CALIBRATED IN ACCORDANCE WITH MATERIAL SPECIFICATION 719-01. AFTER MELDLING TO BEARING, THE WELDED AREA SHALL BE RECOATED WITH AN APPROVED GALVANIZING MATERIAL.

UTILITY NOTES:
CONDUITS, CONDUIT SUPPORTS, WASHERS, NUTS, ETC. WILL BE FURNISHED AND INSTALLED BY THE UTILITY COMPANY. THE COST TO BE INCLUDED IN THE PRICE BID FOR THE UTILITY ITEM.

THREADED INSERTS FOR ‡" DIA. BOLTS SHALL BE CUSHION SEALS. THE CUSHION SEAL SHALL BE DESIGNED TO ALLOW FOR ADJUSTMENTS IN THE FIELD IF NECESSARY.
THREADED INSERTS IN BEAMS SHALL BE MECHANICAL CONNECTORS PROVIDING 11 KIPS IN 7.5 KSI CONCRETE IN ACCORDANCE WITH MATERIAL SPECIFICATION 719-01.