### Designed Beams (Straight Strands)

<table>
<thead>
<tr>
<th>STANDARD 5BBS-B20-30</th>
<th>SPAN</th>
<th>NO.</th>
<th>BEAM TYPE</th>
<th>PATTERN</th>
<th>END</th>
<th>SIZE</th>
<th>STRESS</th>
<th>DESIGN STRESS</th>
<th>MOMENT DISTRIBUTION</th>
<th>TENSILE LOAD REQUIRED</th>
<th>CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>30' Roadway</td>
<td>40</td>
<td>3-5</td>
<td>4B20</td>
<td>6</td>
<td>0.6</td>
<td>7.31</td>
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<td>24</td>
<td>6</td>
<td>4.000</td>
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<tr>
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<td>4B20</td>
<td>8</td>
<td>0.6</td>
<td>7.31</td>
<td>0</td>
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<td>16</td>
<td>0</td>
<td>4.000</td>
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<tr>
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<td>2.50</td>
<td>8</td>
<td>0</td>
<td>4.000</td>
</tr>
</tbody>
</table>

**Fabrication Notes:**
- Provide Grade 60 reinforcing steel bars.
- Provide Class H concrete.
- Skew.
- Prestress losses for the designed beams have been calculated for a relative skew.
- Designed in accordance with AASHTO LRFD Bridge Design Specifications.
- Concrete strain at release for prestress tendon is 0.1%.
- Required moment capacity is based on the following allowable stresses (ksi):
  - Compression = 0.65 f'ci
  - Tension = 0.24 f'ci

**Design Notes:**
- Standard designs are applicable for 5" concrete slabs without overhang and 0 degree skew.
- Fabrication notes must likewise conform.
- Optional designs are subject to the approval of TxDOT.
- Providing drawings and shop drawings must be signed, sealed, and dated by a Professional Engineer registered in the State of Texas.