GENERAL: See CMS 622 for additional information. The minimum design strength of the concrete is 4,000 psi, and it will meet the requirements of CMS 499.

PORTABLE CONCRETE BARRIER (PCB): As shown is not to be used on bridge deck edges, or similar dropoffs. The only suitable barrier in this situation is a 50" PCB as detailed on Structural Engineering's Standard Drawing PCB-91 or approved alternatives as posted on the Office of Roadway Engineering's website.

50° TRANSITION SECTION: Only segments shown on SCD RM-4.1, or approved impact attenuators, may be attached to the 50° side of a 50° transition section. Do not connect an impact attenuator to a 50° barrier end.

HINGE AND REINFORCING BARS: The 1/4" hinge bars may be ASTM A 36. Reinforcing steel shall meet the requirements of CMS 559 (ASM A 615 Grade 60). Wire mesh shall meet CMS 709. Black steel is permitted.

CONNECTING HARDWARE: Galvanize bolts, washers and hex nuts after fabrication per CMS 711.02 and meeting the requirements of CMS 711.09, except that the Rotational Capacity test specified in ASTM A 325 shall be waived.

HANDLING DEVICES: Such devices may be used in lieu of the lifting slot for moving the barrier. They may be of any design sufficient to handle the weight of the section being lifted. No handling devices shall protrude from the surface of the barrier when in place.

MARKING: All barrier segments are to be marked as shown, where XX indicates the year cast. Permanently impress these markings on the barrier using a minimum of 2 inch high lettering.

On the top of each barrier segment, including the transition section, permanently mark a unique identification as to its manufacturer. And somewhere on the barrier, permanently mark the day and month the barrier was manufactured.

REFLECTORIZATION: Install barrier reflectors in accordance with Traffic Engineering Standard and meeting the requirements of CMS 622 for additional information.

PAYMENT: This barrier is paid for in feet as ITEM 622 - Portable Barrier, 50". Approved Drawing MT-101.70, when specified in the plans.

PORTABLE CONCRETE BARRIER (PCB): As shown is not to be used on bridge deck edges, or similar dropoffs. The only suitable barrier in this situation is a 50" PCB as detailed on Structural Engineering's Standard Drawing PCB-91 or approved alternatives as posted on the Office of Roadway Engineering's website.

NOTE: All barrier segments are to be marked as shown, where XX indicates the year cast. Permanently impress these markings on the barrier using a minimum of 2 inch high lettering.

On the top of each barrier segment, including the transition section, permanently mark a unique identification as to its manufacturer. And somewhere on the barrier, permanently mark the day and month the barrier was manufactured.

REFLECTORIZATION: Install barrier reflectors in accordance with Traffic Engineering Standard Drawing MT-101.70, when specified in the plans.

PAYMENT: This barrier is paid for in feet as ITEM 622 - Portable Barrier, 50". Approved Drawing MT-101.70, when specified in the plans.

PORTABLE CONCRETE BARRIER (PCB): As shown is not to be used on bridge deck edges, or similar dropoffs. The only suitable barrier in this situation is a 50" PCB as detailed on Structural Engineering's Standard Drawing PCB-91 or approved alternatives as posted on the Office of Roadway Engineering's website.

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REFLECTORIZATION: Install barrier reflectors in accordance with Traffic Engineering Standard Drawing MT-101.70, when specified in the plans.

PAYMENT: This barrier is paid for in feet as ITEM 622 - Portable Barrier, 50". Approved Drawing MT-101.70, when specified in the plans.
Hinge Bar Type A
\( \frac{3}{4} \)" dia. x 81.37".
Four per segment.

Hinge Bar Type B
\( \frac{3}{4} \)" dia. x 66.43".
Four per segment.

**Hinge Bar Details**

Connecting Pin is a \( \frac{1}{4} \)" diameter by \( \frac{1}{4} \)" Grade 5 galvanized high strength steel bolt, with 3" of threads. Each bolt passes through eight hinge bar loops - four on each segment.

The assembly requires two F436 \( \frac{1}{4} \)" flat washer with an ID of \( \frac{1}{4} \)" and on OD of 2.35". The thickness is 0.156". The flat washer is hot dipped galvanized.

The assembly also requires one \( \frac{1}{4} \)"-7 heavy hex nut. The nut is hot dipped galvanized and waxed and is categorized 2H/DH.

**Connecting Pin Assembly**

**Reinforcing Bar List**

<table>
<thead>
<tr>
<th>Mark</th>
<th>Bar</th>
<th>Bar Length</th>
<th>Shape</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>X501</td>
<td>#5</td>
<td>11'-6&quot; to 13'-4&quot;</td>
<td>Str.</td>
<td>5</td>
</tr>
<tr>
<td>X502</td>
<td>#5</td>
<td>5'-0&quot; to 5'-4&quot;</td>
<td>Str.</td>
<td>3</td>
</tr>
<tr>
<td>X503</td>
<td>#5</td>
<td>5'-4&quot; to 5'-8&quot;</td>
<td>Str.</td>
<td>2</td>
</tr>
</tbody>
</table>

**Section A-A**

**Closed Joint**
Barriers shall initially be placed close together so that bolts can be easily inserted through hinge bar loops.

**Normal Operation**
Barrier joints shall be fully open before the Nut is tightened onto bolt.
**NOTES**

- **GENERAL:** See CMS 622 for additional information. The minimum design strength of the concrete is 4,000 psi, and will meet the requirements of CMS 499.

- **PORTABLE CONCRETE BARRIER (PCB):** As shown is not to be used on bridge deck edges, or similar dropoff. The only suitable barrier in this situation is a 50" PCB as detailed on Structural Engineering's Standard Drawing PCB-R10 or approved alternatives as posted on the Office of Roadway Engineering's website.

- **50° TRANSITION SECTION:** Only segments shown on SCD RM-4.2, or approved Impact Attenuators, may be attached to the 32" side of a 50° transition section. Do not connect an impact attenuator to a 50° barrier end.

- **HINGE AND REINFORCING BARS:** The ½" hinge bars may be ASTM A 36. Reinforcing steel shall meet the requirements of CMS 509. (ASTM A 615 Grade 60). Black steel is permitted.

- **CONNECTING HARDWARE:** Galvanize bolts, washers and hex nuts after fabrication per CMS 711.02 and meeting the requirements of CMS 711.09, except that the Rotational Capacity test specified in ASTM A 325 shall be waived.

- **HANDLING DEVICES:** Such devices may be used in lieu of the lifting slot for moving the barrier. They may be any design sufficient to handle the weight of the section being lifted. No handling devices should protrude from the surface of the barrier when in place.

- **MARKING:** All barrier segments are to be marked as shown, where XX indicates the year cast. Permanently impress these marking on the barrier using a minimum of 2 inch high lettering.

- **PAYMENT:** This barrier is paid for in feet as ITEM 622 - Portable Barrier, 50". Approved Payment: Drawing MT-101.70, when specified in the plans.

- **REFLECTORIZATION:** Install barrier reflectors in accordance with Traffic Engineering Standard and meeting the requirements of CMS 711.09, except that the Rotational Capacity test specified in ASTM A 325 shall be waived.

- **GENERAL:** See CMS 622 for additional information. The minimum design strength of the concrete is 4,000 psi, and will meet the requirements of CMS 499.

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- **GENERAL:** See CMS 622 for additional information. The minimum design strength of the concrete is 4,000 psi, and will meet the requirements of CMS 499.
**Hinge Bar Type A**

\( \frac{3}{8} \)" dia. x 81.5".

Four per segment.

**Hinge Bar Type B**

\( \frac{3}{8} \)" dia. x 85.4".

Four per segment.

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**Hinge Bar Details**

* WWF Elevation*

Showing mesh before bending

* WWF Section*

Showing mesh bent to shape

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**REINFORCING BAR LIST**

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</tr>
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<td>#5</td>
<td>9'-6&quot;</td>
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<td>X503</td>
<td>#5</td>
<td>5'-4&quot;</td>
<td>Str.</td>
<td>2</td>
</tr>
</tbody>
</table>

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**Connecting Pin Assembly**

Connecting Pin is a 1 1/4" diameter by 41/2" Grade 5 galvanized high strength steel bolt, with 3" of threads. Each bolt passes through eight hinge bar loops - four on each segment.

The assembly requires two F436 1 1/4" flat washer with an ID of 1 1/8" and an OD of 2 1/2". The thickness is 0.056". The flat washer is hot dipped galvanized.

The assembly also requires one 1 1/4"-7 heavy hex nut. The nut is hot dipped galvanized and waxed and is intergared with bolt.

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**SECTION A-A**

**Closed Joint**

Barriers shall initially be placed close together so that bolts can be easily inserted through hinge bar loop.

**Open Joint**

Normal Operation

Barrier joints shall be fully open before the Nut is tightened onto Bolt.

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**Joint Connection Detail**