## CROSS STITCHING BAR DIMENSIONS AND LOCATION OF DRILL HOLES

<table>
<thead>
<tr>
<th>Angle</th>
<th>Slab Thickness (T)</th>
<th>Distance to Hole (D)</th>
<th>Length of Bar (L)</th>
<th>Epoxy Coated Bar Number (#)</th>
<th>Cross Stitching Bar Dimensions and Location of Drill Holes</th>
<th>Plan View</th>
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</thead>
<tbody>
<tr>
<td>35°</td>
<td>12 (1.50)</td>
<td>6.50</td>
<td>9.50</td>
<td>6</td>
<td>CROSS-STITCH HOLE (TYP.)</td>
<td><img src="image1" alt="Plan View" /></td>
</tr>
<tr>
<td>40°</td>
<td>16 (2.00)</td>
<td>10.50</td>
<td>12.50</td>
<td>6</td>
<td>CROSS-STITCH HOLE (TYP.)</td>
<td><img src="image2" alt="Plan View" /></td>
</tr>
<tr>
<td>45°</td>
<td>20 (2.50)</td>
<td>12.00</td>
<td>14.00</td>
<td>6</td>
<td>CROSS-STITCH HOLE (TYP.)</td>
<td><img src="image3" alt="Plan View" /></td>
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**GENERAL NOTES**

1. There shall be a minimum 1 inch gap from the ends of the deformed rebars to the top or bottom of the concrete slab.
2. Do not drill hole completely through the slab so that the epoxy/grout will be contained in the hole while back filling.

**Cross Stitching Details**

For PCCP 8" or more in thickness.

For distances of drilled hole dia., max. size should be calculated for each hole as per above table. Cross-stitching with epoxy-coated steel reinforcing bars should be done in concrete slabs less than 1" thick.

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- **Designer Initials:** JBK
- **Last Modification Date:** 10/07/19
- **Detailer Initials:** LT A
- **CAD Ver.:** MicroStation 8.7

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**Sheet Revisions Colorado Department of Transportation**

- **Project Development Branch:** JBK
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**Concrete Pavement Crack Repair**

- **Standard Plan No.:** M-412-2
- **Standard Sheet No.:** 1 of 4
PLAN VIEW

SECTION B-B

SLOT STITCHING DETAILS

FOR REPAIR OR TIE IN THICKNESS

SECTION C-C

EXISTING CONCRETE PavEMENT

AS REQUIRED

CONCRETE BACKFILL MATERIAL AFTER TIE BAR INSTALLATION

CONCRETE BACKFILL MATERIAL

TIE BAR

CHAIR

BOTTOM OF SLOT IS PARALLEL TO PAVEMENT SURFACE

EXISTING CONCRETE PAVEMENT

CONCRETE BARTICAL MATERIAL

CHAIR TO REST PARALLEL TO SURFACE

CONCRETE BACKFILL MATERIAL

TIE BAR

CHAIR

CONCRETE PAVEMENT STANDARDS PLAN NO.

M-412-2

CONCRETE PAVEMENT CRACK REPAIR

STANDARD PLAN NO.

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CONCRETE PAVEMENT CRACK REPAIR

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NOTES
1. If a longitudinal joint is present in the wheel path or at the middle of the slab, contact the engineer.
2. Dowels shall be a minimum of 1 ft. - 6 inches away from any longitudinal joint.

PLAN VIEW
Dowel Bar Retro Fit
For each lane in divided highway (two way traffic)
or for multiple divided highway (one way traffic)

PLAN VIEW
Dowel Bar Retro Fit
For single lane retrofit

PLAN VIEW
Skewed Joint Detail

Dowel Bar Retrofit Details

SECTION D-D

SECTION E-E

SECTION F-F