Design Detail Standard Sheets for Concrete Pavement Transition Area

1. Continuously Reinforced Concrete (CRC) Pavement to CRC Pavement Thickness Transition.
2. CRC Pavement to CRC Pavement Construction Joint Transition.
3. CRC Pavement to Jointed Concrete (JC) Pavement Transition.
4. CRC Pavement to Flexible Pavement Transition.
5. JC Pavement to Flexible Pavement Transition.
6. JC Pavement to JC Pavement Transition.
7. CRC Pavement to Bridge Approach Slab Transition.
8. JC Pavement to Bridge Approach Slab Transition.
9. Intersection Transition.
10. Overlay-Unbonded, Bonded, Asphalt Concrete (AC) Overlays Transition.
11. CRC Bonded Overlay to CRC Pavement Transition.
12. Drop Inlet/Drainage Box.
13. Ramp/Gore Area Transition.

The sketches of the transition details are checked for consistency with the guidelines. The transition detail sheets will be evaluated by TxDOT for implementation.
DESIGN DETAIL STANDARD SHEETS FOR CONCRETE PAVEMENT TRANSITION AREA

by

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<td>25. Ramp/Gore Area Transition</td>
<td>25</td>
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</table>
TRANVERSE TYPE B (DB)

EXIST CRCP  NEW CRCP

① 25" LAP SPLICE

ALL STEEL IS IN SAME PLANE

9" MIN.

DRILL & EPOXY

12.5" 12.5"

18" WHEEL PATH ONLY

d2" STEEL FOR T2

20' TRANSITION LENGTH

SUBBASE (REFER TO TYPICAL SECTION)

d1" STEEL FOR T1

10' CENTER OF SPLICE

CLASSIFICATION AND NOTATION OF JOINT

<table>
<thead>
<tr>
<th>TYPE</th>
<th>JOINT DESCRIPTION</th>
<th>MODIFIER</th>
<th>ABBREVIATION</th>
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<tbody>
<tr>
<td>A</td>
<td>CONSTRUCTION JOINT</td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>B</td>
<td>ISOLATION JOINT</td>
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LONGITUDINAL STEEL SIZE AND SPACING

<table>
<thead>
<tr>
<th>THICKNESS</th>
<th>BAR SIZE</th>
<th>SPACING</th>
</tr>
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<tbody>
<tr>
<td>6</td>
<td>#5 (0.17&quot;)</td>
<td>6&quot;</td>
</tr>
<tr>
<td>8</td>
<td>#5 (0.17&quot;)</td>
<td>6&quot;</td>
</tr>
<tr>
<td>10</td>
<td>#5 (0.17&quot;)</td>
<td>7&quot;</td>
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<td>11</td>
<td>#5 (0.17&quot;)</td>
<td>8.5&quot;</td>
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<tr>
<td>12</td>
<td>#5 (0.17&quot;)</td>
<td>8.5&quot;</td>
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<tr>
<td>13</td>
<td>#5 (0.17&quot;)</td>
<td>9.5&quot;</td>
</tr>
<tr>
<td>14</td>
<td>#5 (0.17&quot;)</td>
<td>10.5&quot;</td>
</tr>
<tr>
<td>15</td>
<td>#5 (0.17&quot;)</td>
<td>11.5&quot;</td>
</tr>
<tr>
<td>16</td>
<td>#5 (0.17&quot;)</td>
<td>12.5&quot;</td>
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<tr>
<td>17</td>
<td>#5 (0.17&quot;)</td>
<td>13.5&quot;</td>
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② BASED ON #5 BAR FOR OTHER BAR SIZES LAP SPLICE = 3X6'

T1 = THICKNESS OF EXISTING CRC PAVEMENT
T2 = THICKNESS OF NEW CRC PAVEMENT

CRC PAVEMENT TO CRC PAVEMENT (THICKNESS TRANSITION)
EDGE OF CRC PAVEMENT OR LONGITUDINAL JOINT

12" FROM THE EDGE

18"

18"

② WHEEL PATH: 36" WIDTH

REINFORCING STEEL

5'-6' (TYP)

① 25" LAP SPlice

AS A MINIMUM, PLACE ADDITION DEFORMED BARS (36" SAME DIA. & SPACING WITH LONGIT. STEEL) IN EACH WHEEL PATH FOR LOAD TRANSFER

TRANSVERSE TYPE B (DB)
ALL STEEL IS IN SAME PLANE

CRC PAVEMENT TO CRC PAVEMENT
(HEADER JOINT - OPTION 2)
TRANVERSE TYPE A (DB)  TRANSVERSE TYPE B (SD)  TRANSVERSE TYPE A (SD)

CRCP 30% STEEL  TRANSITION ZONE  JOINTED CONCRETE SLAB

REINFORCING STEEL  ① OPTIONAL DOWEL  ① OPTIONAL DOWEL  DOWEL  STANDARD CAP  DOWEL

SUBBASE (REFER TO TYPICAL SECTION)

PROFILE VIEW

SAW CUTS OR INDUCED DESIGN CRACK

CRC PAVEMENT  JC PAVEMENT

TRANSVERSE TYPE B (SD)

CRCP LONGITUDINAL STEEL

100% STEEL ZONE  60% STEEL TRANSITION ZONE  30% STEEL TRANSITION ZONE

① PLACE OPTIONAL DOWEL THROUGH 30% STEEL TRANSITION ZONE IF LOAD TRANSFER BY AGGREGATE INTERLOCKING ONLY IS INSUFFICIENT BASED ON CURRENT DESIGN SLAB LENGTH AND THICKNESS

LONGITUDINAL STEEL SIZE AND SPACING

<table>
<thead>
<tr>
<th>THICKNESS, T. (IN.)</th>
<th>BAR SIZE</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
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</thead>
<tbody>
<tr>
<td>8</td>
<td>#6 (0.177)</td>
<td>12&quot;</td>
<td>18&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>10</td>
<td>#8 (0.197)</td>
<td>15&quot;</td>
<td>21&quot;</td>
<td>27&quot;</td>
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<tr>
<td>11</td>
<td>#8 (0.197)</td>
<td>15&quot;</td>
<td>21&quot;</td>
<td>27&quot;</td>
</tr>
<tr>
<td>12</td>
<td>#6 (0.177)</td>
<td>12&quot;</td>
<td>18&quot;</td>
<td>24&quot;</td>
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<tr>
<td>13</td>
<td>#6 (0.177)</td>
<td>12&quot;</td>
<td>18&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>14</td>
<td>#6 (0.177)</td>
<td>12&quot;</td>
<td>18&quot;</td>
<td>24&quot;</td>
</tr>
</tbody>
</table>
| 15                  | #6 (0.177) | 12"  | 18"  | 24"

DOWELS REQUIREMENTS

<table>
<thead>
<tr>
<th>THICKNESS, T. (IN.)</th>
<th>DOWELS, SMOOTH BAR</th>
<th>10&quot;</th>
<th>12&quot;</th>
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</thead>
<tbody>
<tr>
<td>9</td>
<td>① 3/8&quot; x 10&quot;  12&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>① 3/8&quot; x 10&quot;  12&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>① 5/16&quot; x 10&quot;  12&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>① 3/8&quot; x 10&quot;  12&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>① 3/8&quot; x 10&quot;  12&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>① 3/8&quot; x 10&quot;  12&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>① 5/16&quot; x 10&quot;  12&quot;</td>
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</tr>
</tbody>
</table>

CRC PAVEMENT TO JOINTED CONCRETE PAVEMENT (OPTION 3)
TRANSVERSE TYPE A (SD)

JC PAVEMENT

9"

DOWEL

STANDARD CAPPED END

9"

JOINTED SLAB

TRANSVERSE TYPE C

(1" ELASTOMERIC CONCRETE)

FLEXIBLE PAVEMENT
(REFER TO TYPICAL SECTION)

SUBBASE (REFER TO TYPICAL SECTION)

S'
IF PCC PAVEMENT THICKNESS IS DIFFERENT WITH BRIDGE APPROACH SLAB, EMPLOY PAVEMENT THICKNESS TRANSITION BEFORE THE TRANSITION TO BRIDGE APPROACH SLAB.
1. IF PCC PAVEMENT THICKNESS IS DIFFERENT WITH BRIDGE APPROACH SLAB, EMPLOY PAVEMENT THICKNESS TRANSITION BEFORE THE TRANSITION TO BRIDGE APPROACH SLAB
1. If PCC pavement thickness is different with bridge approach slab, employ pavement thickness transition before the transition to bridge approach slab.

**Classification and Notation of Joint**

<table>
<thead>
<tr>
<th>Type</th>
<th>Joint Description</th>
<th>Modifier</th>
<th>Abbreviation</th>
<th>Dowels (Smooth Bars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Construction Joint</td>
<td></td>
<td></td>
<td>8 1&quot; x 18&quot; 12&quot;</td>
</tr>
<tr>
<td>B</td>
<td>Isolation Joint</td>
<td></td>
<td></td>
<td>9 1&quot; x 18&quot; 12&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 1 1/2&quot; x 18&quot; 12&quot;</td>
</tr>
</tbody>
</table>

**Dowels Requirements**

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Dowels (Smooth Bars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>1&quot; x 18&quot; 12&quot;</td>
</tr>
<tr>
<td>9</td>
<td>1&quot; x 18&quot; 12&quot;</td>
</tr>
<tr>
<td>10</td>
<td>1 1/2&quot; x 18&quot; 12&quot;</td>
</tr>
</tbody>
</table>

**Transverse Type A (SD)**

- JC Slab
- Standard Capped End
- Dowel

**Transverse Type B (SD)**

- JC Slab
- Standard Capped End
- Dowel
- Bridge Approach Slab

**Subbase** (Refer to Typical Section)**

---

**JC Pavement to Bridge Approach Slab**

---
LONGITUDINAL TYPE C (WF OR SS OR TE)

LONGITUDINAL TYPE B (TIED)

LONGITUDINAL TYPE C (WF OR SS OR TE)

LONGITUDINAL TYPE A OR TYPE B (TIED)

FRONTAGE ROAD CRCP

THE LENGTH BETWEEN LONGITUDINAL JOINT IS LARGER THAN 500 FT.

SPECIAL AREA: ROUTE TRAFFIC TO FACILITATE THE JOINTING PLAN, BUT AVOID ADDITIONAL TRANSVERSE (I.E. HEADER) JOINTS IN THIS REGION, IF POSSIBLE.

FRONTAGE ROAD CRCP

1) LONGITUDINAL TYPE C (WF OR SS OR TE)

2) TYPE B (SD)

2'

CROSS ROAD CRCP

1) LONGITUDINAL TYPE C (WF OR SS OR TE)

1) EMPLOY LONGITUDINAL TYPE C (1" ELASTOMERIC CONCRETE) WHEN CROSS ROAD TYPE IS FLEXIBLE PAVEMENT
LONGITUDINAL TYPE C (WF OR SS OR TE)

① LONGITUDINAL TYPE A OR TYPE B (TIED)

① LONGITUDINAL TYPE C (WF OR SS OR TE)

SPECIAL AREA: ROUTE TRAFFIC TO FACILITATE THE JOINTING PLAN, BUT AVOID ADDITIONAL TRANSVERSE (I.E. HEADER) JOINTS IN THIS REGION, IF POSSIBLE.

CONTRACTION DESIGN: THE LENGTH BETWEEN LONGITUDINAL JOINTS IS LESS THAN 500 FT.

① LONGITUDINAL TYPE C (WF OR SS OR TE)

CROSS ROAD CRCP

FRONTAGE ROAD CRCP

FRONTAGE ROAD CRCP
**CROSS ROAD CRCP**

**LONGITUDINAL TYPE C (TIED)**

**LONGITUDINAL TYPE B (TE)**

**LONGITUDINAL TYPE C (WF OR SS OR TE)**

**LONGITUDINAL TYPE A OR TYPE B (TIED)**

**SPECIAL AREA: ROUTE TRAFFIC TO FACILITATE THE JOINTING PLAN, BUT AVOID ADDITIONAL TRANSVERSE (I.E. HEADER) JOINTS IN THIS REGION, IF POSSIBLE.**

**THE LENGTH BETWEEN TRANSVERSE JOINT IS LARGER THAN 500 FT.**

**EMPLOY LONGITUDINAL TYPE C (1" ELASTOMERIC CONCRETE) WHEN FRONTAGE ROAD TYPE IS FLEXIBLE PAVEMENT**
CRACK RESISTANT LIFT OF HOT MIX OR HOT RUBBER SEAL COAT
BONDED AC OVERLAY GRADE TRANSITION

MIN. 1" AC BOND BREAKER (UNBONDED)

THIS DETAIL ALSO APPLIES TO UNBONDED OVERLAYS

OVERLAY - UNBONDED, BONDED, AC OVERLAYS
TRANSVERSE TYPE B (SD)

MIN. 1'

TRANSVERSE TYPE B

SAW CUT MATCH JOINT PATTERN, IF FEASIBLE

TRANSVERSE TYPE B (SD)

MIN. 2'

TRANSVERSE TYPE B

DIRECTION OF PAVING