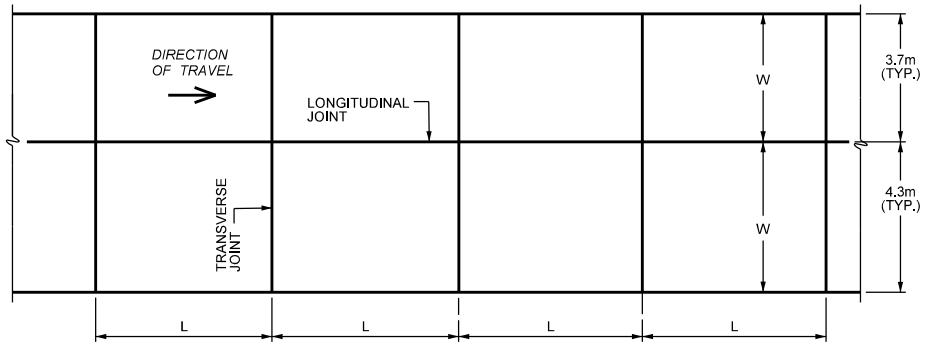
**T** = DESIGN THICKNESS OF CONCRETE LAYER
(EXCLUDING LOSS FOR DIAMOND GROUND TEXTURING)

**L** = LENGTH OF CONCRETE PANEL IN DIRECTION OF TRAVEL = 20 x T (4.5m MAX.)

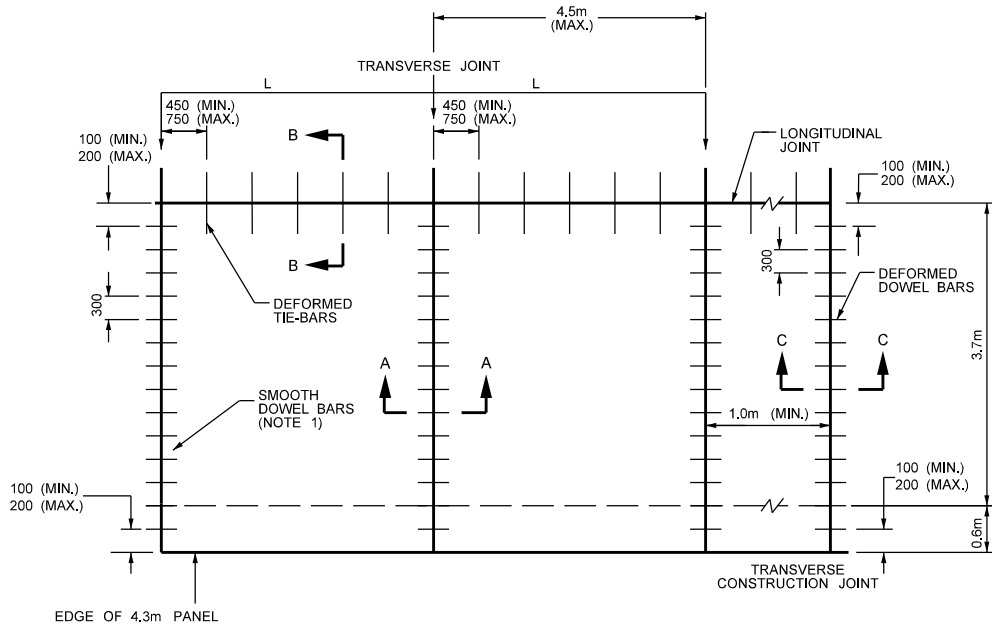
**W** = WIDTH OF CONCRETE PANEL (TYP. 4.3m OUTER PANEL AND 3.7m INNER PANEL)

NOTES:

1. TWELVE (12) DOWELS IN 3.7m WIDE PANELS AND FORTEEN (14) DOWELS IN 4.3m WIDE PANELS
2. ASPECT RATIO BETWEEN PANEL WIDTH AND LENGTH = 1.25 (MAX.)
3. FOR CONCRETE JOINT, STEEL, AND SAW CUT DETAILS, REFER TO SHEETS 2, 3, AND 4
4. FOR DETAILS OF EXPANSION AND ISOLATION JOINTS, REFER TO SHEET 5




**TYPICAL LAYOUT OF CONCRETE PANELS**




**DOWEL AND TIE-BAR PLACEMENT DETAILS**

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CONCRETE JOINT, DOWEL AND TIE-BAR PLACEMENT DETAILS

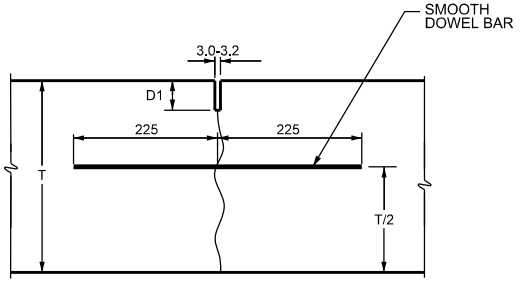
Manitoba
Transportation and Infrastructure

Revised drawing Oct. 20, 2025

T = DESIGN THICKNESS OF CONCRETE LAYER
(EXCLUDING LOSS FOR DIAMOND GROUND TEXTURING)

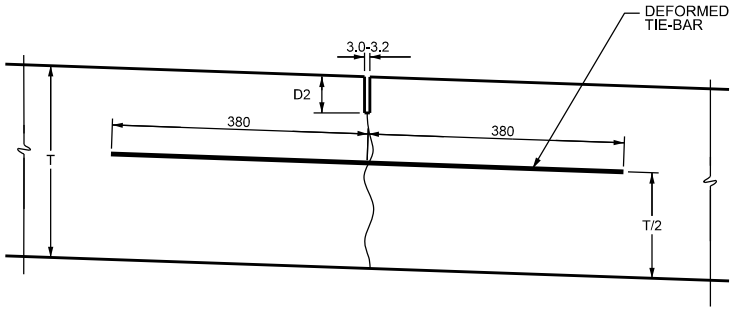
D1 = DEPTH OF TRANSVERSE SAW CUT

D2 = DEPTH OF LONGITUDINAL SAW CUT



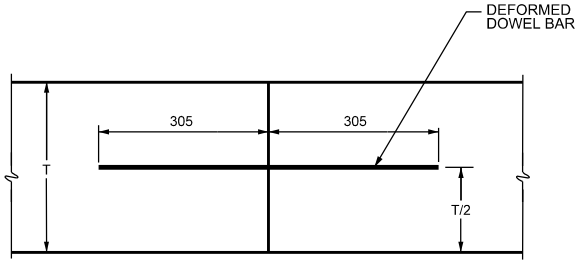

**SECTION A-A**
**STEEL AND SAWCUT DETAILS OF UNSEALED TRANSVERSE CONTRACTION JOINT**
(NOT TO SCALE)

SEE TABLES 1 & 2 ON SHEET 4 FOR SAW CUT AND STEEL SIZE AND SPACING




**SECTION B-B**
**STEEL AND SAWCUT DETAILS OF UNSEALED LONGITUDINAL JOINT**
(NOT TO SCALE)

SEE TABLES 1 & 3 ON SHEET 4 FOR SAW CUT AND STEEL SIZE AND SPACING




**SECTION C-C**
**STEEL DETAIL OF TRANSVERSE CONSTRUCTION JOINT**
(NOT TO SCALE)

SEE TABLE 4 ON SHEET 4 FOR STEEL SIZE AND SPACING

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CONCRETE JOINT, DOWEL AND
TIE-BAR PLACEMENT DETAILS

Manitoba
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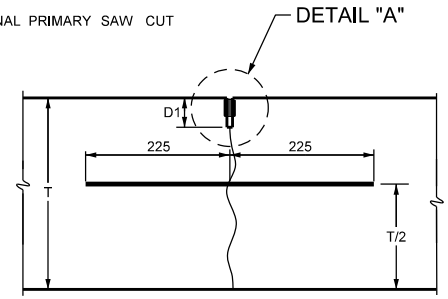
T = DESIGN THICKNESS OF CONCRETE LAYER
(EXCLUDING LOSS FOR DIAMOND GROUND TEXTURING)

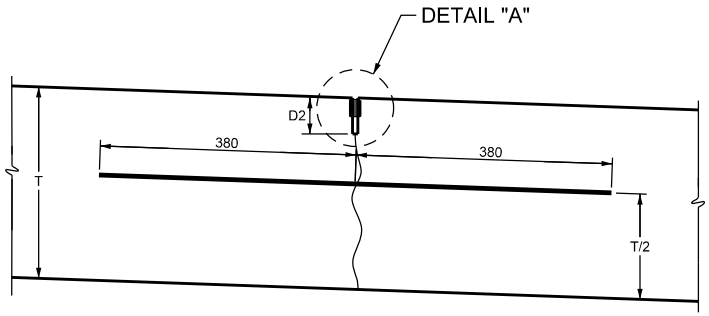
D1 = DEPTH OF TRANSVERSE PRIMARY SAW CUT

D2 = DEPTH OF LONGITUDINAL PRIMARY SAW CUT




**SECTION A-A**
**STEEL AND SAWCUT DETAILS OF SEALED TRANSVERSE CONTRACTION JOINT**
(NOT TO SCALE)

SEE TABLES 1 & 2 ON SHEET 4 FOR SAW CUT AND STEEL SIZE AND SPACING

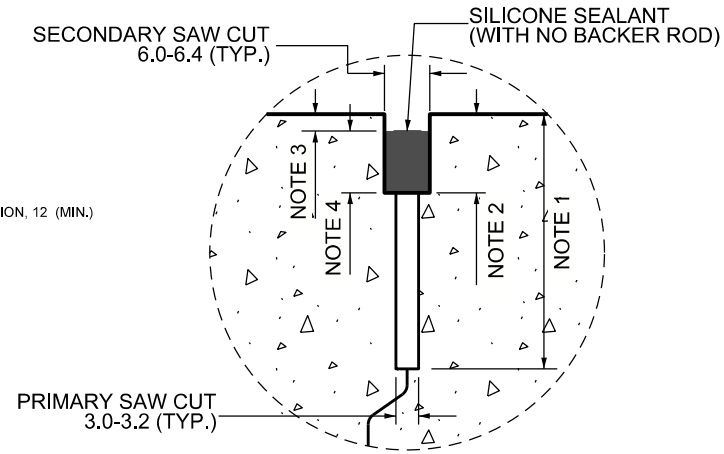



**SECTION B-B**
**STEEL AND SAWCUT DETAILS OF SEALED LONGITUDINAL JOINT**
(NOT TO SCALE)

SEE TABLES 1 & 3 ON SHEET 4 FOR SAW CUT AND STEEL SIZE AND SPACING

NOTES:

1. REFER TO TABLE 1 ON SHEET 4 FOR PRIMARY SAW CUT DEPTHS
2. DEPTH OF SECONDARY SAW CUT AS PER SEALANT MANUFACTURER'S RECOMMENDATION, 12 (MIN.)
3. RECESS DEPTH AS PER SEALANT MANUFACTURER'S RECOMMENDATION, 3 (MIN.)
4. SEALANT THICKNESS AS PER MANUFACTURER'S RECOMMENDATION, 9 (MIN.)




DETAIL "A"

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CONCRETE JOINT, DOWEL AND
TIE-BAR PLACEMENT DETAILS

Manitoba
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Table 1: Depth of Transverse and Longitudinal Primary Saw Cuts

| Design Thickness T | Depth of Transverse Saw Cut D1 | Depth of Longitudinal Saw Cut D2 |
|---|---|---|
| 200 | 55 | 65 |
| 225 | 65 | 70 |
| 250 | 70 | 80 |
| 275 | 80 | 90 |
| 300 | 85 | 95 |
| All other PCC thicknesses | (0.27 x T) to (0.29 X T) | (0.31 x T) to (0.33 X T) |

Table 3: Size and Spacing of Deformed Bars at Longitudinal Contraction and Construction Joints

| Roadway Element | PCC Thickness | Deformed Bar Diameter | Deformed Bar Length | Maximum Spacing | Number of Tie Bars in 4.5m Long Panel |
|---|---|---|---|---|---|
| Through lanes | <280 | 15M or Equivalent | 760 | 750 | 5 (*) |
| | ≥280 | 15M or Equivalent | 760 | 720 | 6 (*) |
| Acceleration, deceleration, weaving, and turning lanes including taper and cut-off and interchange ramps/loops | <280 | 15M or Equivalent | 760 | 600 | 7 (*) |
| | ≥280 | 20M or Equivalent | 760 | 600 | 7 (*) |

(*) Number of tie bars shall be reduced for shorter than 4.5m long PCC panels based on the spacing requirements, minimum three (3) tie bars per panel.

Table 2: Steel Type and Size for Transverse Contraction Joints

| Design Thickness | Smooth Dowel Bar Diameter | Smooth Dowel Bar Length |
|---|---|---|
| 180 to 250 | 32 | 450 |
| 255 to 280 | 35 OR 38 | 450 |
| 285 to 305 | 38 | 450 |

Table 4: Steel Type and Size for Transverse Construction Joints

| Design Thickness | Deformed Dowel Bar Diameter | Deformed Dowel Bar Length |
|---|---|---|
| 180 to 195 | 30M or Equivalent | 610 |
| 200 to 280 | 35M or Equivalent | 610 |
| ≥285 | 40M or Equivalent | 610 |

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CONCRETE JOINT, DOWEL AND TIE-BAR PLACEMENT DETAILS

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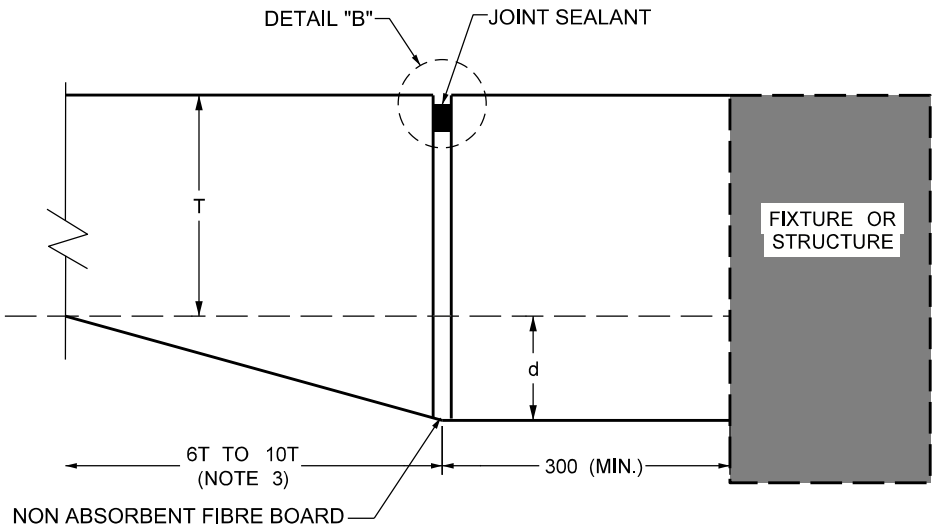



# DETAIL OF ISOLATION JOINT

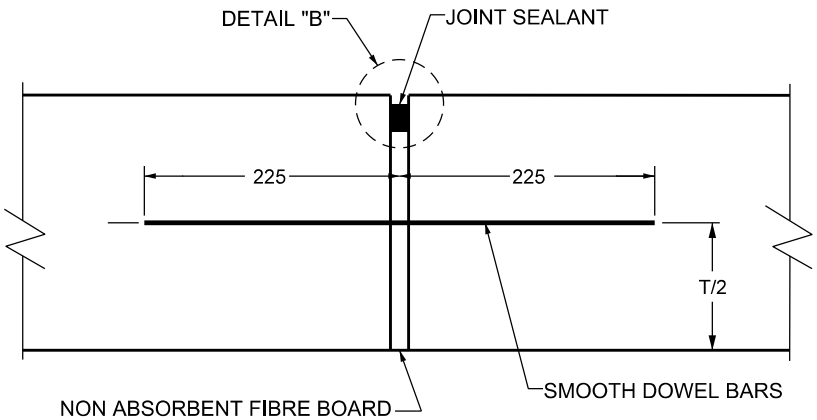
(NOT TO SCALE)

T = DESIGN THICKNESS OF CONCRETE LAYER

d = 50 (MIN.) for T<= 250, and 60 (MIN.) for T>250.

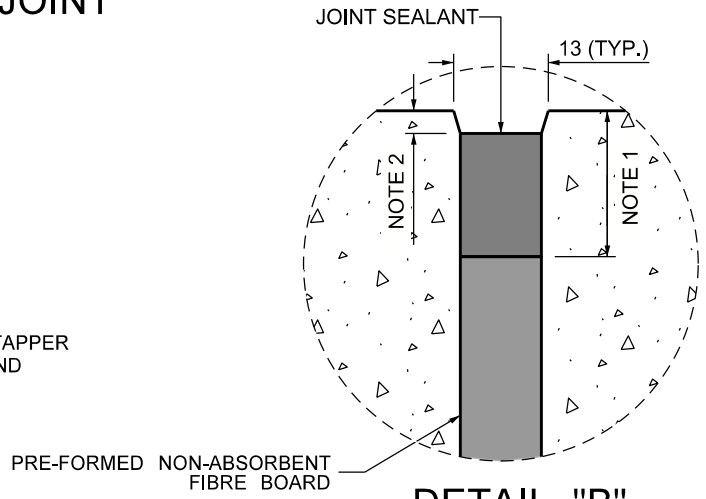
NOTES:

1. REFER TO NOTES 3 AND 4 ON SHEET 3 FOR RECESS DEPTH AND SEALANT THICKNESS
2. THE WIDTH OR RADIUS OF CHAMFER SHALL BE SAME AS THE RECESS DEPTH
3. THE CONCRETE SHALL BE THICKENED WITHOUT ANY TAPPER IF THE AVAILABLE SPACE BETWEEN THE ISOLATION AND ADJACENT TRANSVERSE/LONGITUDINAL JOINTS IS <6T




# STEEL DETAIL OF EXPANSION JOINT

(NOT TO SCALE)




# DETAIL "B"

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CONCRETE JOINT, DOWEL AND TIE-BAR PLACEMENT DETAILS

Manitoba Transportation and Infrastructure

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