

<b>HNTB</b>	Made by	Date	Job No.
	RSB	09/27/11	49663
Calculations For <b>WALL I</b>	Checked by HDA	Date 9-28-11	Sheet No.
	Backchecked by	Date	

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**EXPANSION JOINT AT APPROACH SLAB - MOMENT SLAB INTERFACE  
EMSEAL - DSM SYSTEM**

**INPUT**

L = 122 ✓ FT (2/3)\*LENGTH OF FASCIA GIRDER + LENGTH OF A.S.  
(SEMI-INTEGRAL ABUTMENT)

δ conc = 0.000006 ✓ PER DEGREE FAHRENHEIT

SKEW = 12.5 ✓ DEGREE

MIN JOINT = 3 ✓ IN (PER TECH SPECIFICATION)

MAX JOINT = 5.25 ✓ IN (PER TECH SPECIFICATION)

**CHECK THAT SELECTED EXPANSION JOINT DOES NOT EXCEED ALLOWABLE MOVEMENT  
CONCRETE COLD WEATHER**

TEMPERATURE RISE = 35 ✓ DEGREE

TEMPERATURE FALL = 45 ✓ DEGREE

$$A_{95} = A_{60} - (\delta \cdot \Delta T \cdot (L \cdot 12) \cdot \cos(\text{SKEW}))$$

$$\Delta T = 35 \text{ F}$$

$$A_{95} = 3.70 \text{ IN} \quad \text{OK}$$

$$A_{15} = A_{60} + (\delta \cdot \Delta T \cdot (L \cdot 12) \cdot \cos(\text{SKEW}))$$

$$\Delta T = 45 \text{ F}$$

$$A_{15} = 4.39 \text{ IN} \quad \text{OK}$$

**JOINT OPENING DIMENSION FOR TABLE ON PLANS**

$$A_{60} = 4.00 \text{ IN} \quad \text{(JOINT OPENING AT 60 DEGREES) ✓}$$

$$A_{90} = A_{60} - (\delta \cdot \Delta T \cdot (L \cdot 12) \cdot \cos(\text{SKEW}))$$

$$\Delta T = 30 \text{ F}$$

$$A_{90} = 3.74 \text{ IN}$$

$$A_{80} = A_{60} - (\delta \cdot \Delta T \cdot (L \cdot 12) \cdot \cos(\text{SKEW}))$$

$$\Delta T = 20 \text{ F}$$

$$A_{80} = 3.83 \text{ IN}$$

$$A_{70} = A_{60} - (\delta \cdot \Delta T \cdot (L \cdot 12) \cdot \cos(\text{SKEW}))$$

$$\Delta T = 10 \text{ F}$$

$$A_{70} = 3.91 \text{ IN}$$

$$A_{50} = A_{60} + (\delta \cdot \Delta T \cdot (L \cdot 12) \cdot \cos(\text{SKEW}))$$

$$\Delta T = 10 \text{ F}$$

$$A_{50} = 4.09 \text{ IN}$$

$$A_{40} = A_{60} + (\delta \cdot \Delta T \cdot (L \cdot 12) \cdot \cos(\text{SKEW}))$$

$$\Delta T = 20 \text{ F}$$

$$A_{40} = 4.17 \text{ IN}$$

$$A_{30} = A_{60} + (\delta \cdot \Delta T \cdot (L \cdot 12) \cdot \cos(\text{SKEW}))$$

$$\Delta T = 30 \text{ F}$$

$$A_{30} = 4.26 \text{ IN}$$