APPENDIX A
JOIST CROSS SECTION PROPERTIES
Figure A.1       Single Span Footbridge- Joist 1
Figure A.2    Single Span Footbridge- Joist 2
Figure A.3  Three Span Footbridge- Joist 1
Figure A.5  Three Span Footbridge- Joist 3
Figure A.8  Three Span Footbridge- Joist 6
APPENDIX B
DESIGN GUIDE 11 CALCULATIONS FOR SINGLE SPAN FOOTBRIDGE
Concrete slab = 4.50" + 1.50" / 3 = 5.00"

Measured concrete density = 142.32 lbs / ft$^3$

\[ w_{\text{slab}} = (142.32 \text{ lbs} / \text{ft}^3) \times (5" / 12") = 59.30 \text{ lbs} / \text{ft}^2 \]

\[ W_C = 59.30 \times 30 \times 7 = 12543 \text{ lbs} \]

1.5VL22 Cold-formed steel deck = 1.78 lbs / ft$^2$

\[ W_d = 1.78 \times 30 \times 7 = 373.8 \text{ lbs} \]

30K7 Open web steel joist = 12.3 lbs / ft

\[ W_j = 2 \times 30 \times 12.3 = 738 \text{ lbs} \]

# 4 reinforcement bars: 0.668 lb / ft

# 4 bars parallel to joists: 4 lines of 30 ft = 120 ft

\[ 120 \times 0.668 = 80.16 \text{ lbs} \]

# 4 bars perpendicular to joists: 18 lines of 6 ft = 108 ft

\[ 108 \times 0.668 = 72.144 \text{ lbs} \]

\[ W_r = (120 \times 0.668) + (108 \times 0.668) = 152.304 \text{ lbs} \]

6" deep pour stops = 1.949 lbs / ft
\[ W_p = 2 \times (30+7) \times 1.949 = 144.226 \text{ lbs} \]

Welded Wire Fabric: 6x6xW4xW4= 58 lbs / 100 ft²
\[ W_w = 4 \times 30 \times 0.58 = 69.6 \text{ lbs} \]

Reinforcement bar chairs: 0.212 lb / ft
- Chairs parallel to joists: 4 lines of 30 ft = 120 ft
  \[ 120 \times 0.212 = 25.44 \text{ lbs} \]
- Chairs perpendicular to joists: 18 lines of 5 ft = 90 ft
  \[ 90 \times 0.212 = 19.08 \text{ lbs} \]
\[ W_{ch} = (120 \times 0.212) + (90 \times 0.212) = 44.52 \text{ lbs} \]

Stand-off shear screws= 0.12 lbs
\[ W_s = (64) \times (0.12) = 7.68 \text{ lbs} \]

Self-drilling screws: 3 lbs (estimated)
\[ W_{ss} = 3 \text{ lbs} \]

\[ W_{total} = W_c + W_d + W_j + W_r + W_p + W_w + W_{ch} + W_s + W_{ss} = 13986.1 \text{ lbs} \]
\[ \frac{W_{total}}{2} = 6993.1 \text{ lbs per joist} \]

\[ (W_{total})/2 = 6993.1 \text{ lbs per joist} \]
\[ w = \left( \frac{W_{total}}{2} \right) \left( \frac{1}{30} \right) \left( \frac{1}{1000} \right) = 0.2331 \text{ kips / ft per joist} \]
\[ = 0.0194 \text{ kips / in per joist} \]

For the shell elements in the SAP2000 model, Sladki (1999) demonstrated that the unit weight per unit volume, \( W_{\text{SHELL}} \), and mass per unit volume \( M_{\text{SHELL}} \), of the shell material is given by:
\[
W_{\text{SHELL}} = \left[ \left( \frac{d + d_r}{2} \right) w_c + w_d + w_{\text{deck}} + w_i + w_{\text{coll}} \right] \left( \frac{12}{d} \right) \left( \frac{1}{1,728,000} \right)
\]
\[
M_{\text{SHELL}} = \frac{W_{\text{SHELL}}}{386.1}
\]
In these formulae, \( W_{\text{SHELL}} \) is the unit weight of the material (kip/in\(^3\)), \( d \) is the depth of concrete above the metal deck (in.), \( d_r \) is the height of the metal deck (in.), \( w_c \) is the unit weight of concrete (pcf), \( w_d \) is the actual superimposed dead load (psf), \( w_{\text{deck}} \) is the weight of the deck (psf), \( w_l \) is the actual live load (psf), and \( w_{\text{coll}} \) is the collateral loading (psf). Collateral loading is any load that is an addition to typical dead and live loads. The units for the unit mass used in SAP2000 are kip-s\(^2\)/in\(^4\). The modulus of elasticity of shell material was set to the dynamic modulus of elasticity of the concrete as defined in the Design Guide, e.g. 1.35 times the static modulus of elasticity of the concrete. Also, the Poisson’s ratio for the material, \( \nu \), was set as 0.2.

According to Figure B.1 and above calculations, for the single span footbridge:

\[
W_{\text{SHELL}} = \left[ \frac{d + d_r/3}{12} \right] w_c + w_d + w_{\text{deck}} + w_l + w_{\text{coll}} \left( \frac{12}{d} \right) \left( \frac{1}{1,728,000} \right)
\]

\[
W_{\text{SHELL}} = \left[ \frac{4.5 + 1.5/3}{12} \right] 142.32 + 1.78 + \left( \frac{152.3 + 144.2 + 69.6 + 44.5 + 7.7 + 3}{30.7} \right) \left( \frac{12}{4.5} \right) \left( \frac{1}{1,728,000} \right)
\]

\[W_{\text{SHELL}} = 9.736.10^{-5} \text{ kip/in}^3\]

\[M_{\text{SHELL}} = \frac{W_{\text{SHELL}}}{386.1} = 2.522.10^{-7} \text{ kip-s}^2/\text{in}^4\]

\( M_{\text{SHELL}} \) and \( W_{\text{SHELL}} \) are used in the FE model as Slab material (shell element) properties.

Then, for the three span footbridge:

\[
W_{\text{total}} = W_c + W_d + W_j + W_r + W_p + W_w + W_{\text{ch}} + W_s + W_{\text{ss}} = 40824.4 \text{ lbs}
\]

And,

\[
W_{\text{SHELL}} = \left[ \frac{d + d_r/3}{12} \right] w_c + w_d + w_{\text{deck}} + w_l + w_{\text{coll}} \left( \frac{12}{d} \right) \left( \frac{1}{1,728,000} \right)
\]

\[
W_{\text{SHELL}} = \left[ \frac{4.5 + 1.5/3}{12} \right] 138 + 1.78 + \left( \frac{152.3 + 144.2 + 69.6 + 44.5 + 7.7 + 3}{90.7} \right) \left( \frac{12}{4.5} \right) \left( \frac{1}{1,728,000} \right)
\]

\[W_{\text{SHELL}} = 9.458.10^{-5} \text{ kip/in}^3\]

\[M_{\text{SHELL}} = \frac{W_{\text{SHELL}}}{386.1} = 2.45.10^{-7} \text{ kip-s}^2/\text{in}^4\]

\( M_{\text{SHELL}} \) and \( W_{\text{SHELL}} \) are used in the FE model as Slab material (shell element) properties.
Cross Sectional Properties:

Joist top chord: 2L 2x2x0.149

$A_{tc} = 2(2 \times 0.149 \times 2 - 0.149 \times 0.149) = 1.148 \text{ in}^2$

Centroid of top chord, $y_{tc}$:

$y_{tc} = \frac{\sum A_i y_i}{\sum A_i} = \frac{2[(2)(0.149)(1) + (2 - 0.149)(0.149)(0.149/2)]}{2[(2)(0.149) + (2 - 0.149)(0.149)\] = 0.555"$}

Moment of inertia of top chord, $I_{tc}$:

$I_{tc} = 2\left[\frac{1}{12}(0.149)^3 + (2)(0.149)(1 - 0.555)^2\right] + 2\left[\frac{1}{12}(2 - 0.149)(0.149)^3 + (2 - 0.149)(0.149)(0.555 - 0.149/2)^2\right]$
Joist bottom chord: 2L 1.5x1.5x0.159

\[ A_{bc} = 2(1.5 \times 0.159 \times 2 - 0.159 \times 0.159) = 0.903 \text{ in}^2 \]

Centroid of bottom chord, \( y_{bc} \):

\[
y_{bc} = \frac{\sum A_i y_i}{\sum A_i} = \frac{2[(1.5)(0.159)(0.75) + (1.5 - 0.159)(0.159)(0.159/2)]}{2[(1.5)(0.159) + (1.5 - 0.159)(0.159)]} = 0.434''
\]

Moment of inertia of bottom chord, \( I_{bc} \):

\[
I_{bc} = 2\left[ \frac{1}{12} (0.159)(1.5)^3 + (1.5)(0.159)(0.75 - 0.434)^2 \right] + 2\left[ \frac{1}{12} (1.5 - 0.159)(0.159)^3 + (1.5 - 0.159)(0.159)(0.434 - 0.159/2)^2 \right]
= 2[0.06853 + 0.02724] = 0.192\text{in}^4
\]

Joist Overall:

\[ A_j = 1.148 + 0.903 = 2.051 \text{ in}^2 \]

Centroid of joist, \( y_j \):

\[
y_j = \frac{\sum A_i y_i}{\sum A_i} = \frac{(1.148)(30 - 0.555) + (0.903)(0.434)}{1.148 + 0.903} = 16.672''
= 16.672'' \text{ from bottom}
= (30'' - 16.672'') = 13.328'' \text{ from top}
\]

Moment of inertia of joist, \( I_j = I_{	ext{chords}} \)
Next, calculate composite section centroid:

Assume there is no tension in concrete.

\[ y_{\text{composite}} = \frac{\Sigma A_i y_i}{\Sigma A_i} = \frac{(6.897)(4.5)(33.75) + (2.051)(16.672)}{(6.897)(4.5) + 2.051} = 32.691'' \]

\[ = 32.691'' \text{ from bottom} \]

\[ = (36'' - 32.691'') = 3.309'' \text{ from top} -- \text{Concrete in Tension- Acceptable for floor vibration purposes.} \]

Moment of inertia of composite cross section, \( I_{\text{composite}} \):
In Design Guide 11, \(C_r\) is the modification factor that accounts for the reduction in the moment of inertia due to shear deformations and joint eccentricity in the web members of joists and joist girders:

\[
C_r = 0.8455\left(1 - e^{-0.28(L/D)}\right)^{2.8} \quad \text{for angle web joists (} 6 \leq L/D \leq 24) \]

\[
\frac{L}{D} = \frac{356}{30} = 6 < 11.867 < 24
\]

\[
C_r = 0.8455\left(1 - e^{-0.28(356/30)}\right)^{2.8} = 0.76288
\]

For bare Joists:

\[
I_{mod} = C_r I_{chords} = (0.76288)(426.029) = 325.009in^4
\]

The effective composite moment of inertia for joist supported tee-beams is going to be less than the fully composite moment of inertia of the entire cross section due to shear deformations and joint eccentricity (Band and Murray 1996). Effective composite moment of inertia of joist supported tee-beams is given as:

\[
I_{eff} = \frac{1}{\frac{1}{I_{chords}} + \frac{1}{I_{comp}}}
\]

where

\[
\gamma = \frac{1}{C_r} - 1 = \frac{1}{0.76288} - 1 = 0.31082
\]

\[
I_{eff} = \frac{1}{0.31082 + \frac{1}{426.029} + \frac{1}{1039.514}} = 591.172in^4
\]

then,
\[ f_n = \frac{\pi}{2} \sqrt{\frac{gE_{,eff}I}{wL^2}} = \frac{\pi}{2} \sqrt{\frac{(386.1)(29000)(591.172)}{(0.2331/12)(356)^4}} = 7.235 \text{Hz} \]

For comparison purposes, let’s look at the case where there is tension in the concrete:

\[ y_{\text{composite}} = (36 - d_c) = \frac{(6.897)(d_c)(36 - d_c / 2) + (2.051)(16.672)}{(6.897)(d_c) + 2.051} \]

Solving for \( d_c \):

\( d_c = 3.106'' \)

\[ y_{\text{composite}} = (36 - d_c) = (36 - 3.106) = 32.894'' \]

Moment of inertia of composite cross section, \( I_{\text{composite}} \):

\[ I_{\text{composite}} = \left[ 426.029 + (2.051)(32.894 - 16.672)^2 \right] + \left[ \frac{1}{12} (6.897)(3.106)^3 + (6.897)(3.106)(3.106 / 2)^2 \right] \]

\[ = [965.756 + 68.888] = 1034.644 \text{in}^4 \]

\[ C_r = 0.8455\left(1 - e^{-0.25(L/D)}\right)^{2.8} \text{ for angle web joists (}6 \leq L/D \leq 24) \]
\[ \frac{L}{D} = \frac{356}{30} = 6 < 11.867 < 24 \]

\[ C_r = 0.8455 \left( 1 - e^{-0.28(356/30)} \right)^{2.8} = 0.76288 \]

\[ I_{\text{eff}} = \gamma \left( \frac{1}{I_{\text{chords}}} + \frac{1}{I_{\text{comp}}} \right) \]

where

\[ \gamma = \frac{1}{C_r} - 1 = \frac{1}{0.76288} - 1 = 0.31082 \]

\[ I_{\text{eff}} = \frac{1}{0.31082} \left( \frac{1}{426.029} + \frac{1}{1034.644} \right) = 589.594 \text{in}^4 \]

then,

\[ f_n = \frac{\pi}{2} \sqrt{\frac{gE_s I_{\text{eff}}}{wL^3}} = \frac{\pi}{2} \sqrt{\frac{(386.1)(29000)(589.594)}{(0.2331/12)(356)^4}} = 7.225 \text{Hz} \text{ (vs. 7.235 Hz)} \]

\[ \frac{(7.235 - 7.225)}{7.235} \times 100 = 0.134\% \text{ difference} \]
APPENDIX C

STIFFNESS TEST RESULTS- THREE SPAN FOOTBRIDGE
Figure C.1 Load Cell and Joist Configurations - Three Span Footbridge
APPENDIX C
STIFFNESS TEST RESULTS-- THREE SPAN FOOTBRIDGE
C.1 BARE JOIST TESTING

Bare Joists- J1 is loaded 0-600-0 lb- No Bottom Chord Extensions in Place

Bare Joists- J2 is loaded 0-600-0 lb- No Bottom Chord Extensions in Place

Figure C.2

Figure C.3
Figure C.4

Figure C.5
Figure C.6

Bare Joists - J5 is loaded 0-600-0 lb - No Bottom Chord Extensions in Place

Figure C.7

Bare Joists - J6 is loaded 0-600-0 lb - No Bottom Chord Extensions in Place
Figure C.8

Figure C.9
Figure C.10

Figure C.11
Bare Joists - J1 is loaded 0-600-0 lb - All Bottom Chord Extensions in Place

Figure C.14

Bare Joists - J2 is loaded 0-600-0 lb - All Bottom Chord Extensions in Place

Figure C.15
**Figure C.16**

Bare Joists- J3 is loaded 0-600-0 lb - All Bottom Chord Extensions in Place

**Figure C.17**

Bare Joists- J4 is loaded 0-600-0 lb - All Bottom Chord Extensions in Place
Figure C.18

Bare Joists - J5 is loaded 0-600-0 lb - All Bottom Chord Extensions in Place

Figure C.19

Bare Joists - J6 is loaded 0-600-0 lb - All Bottom Chord Extensions in Place
Figure C.20

Figure C.21
J3 and J4 are loaded 0-600-0 lb- Bare Joists- Interior Bottom Chord Extensions in Place

Figure C.22

J3 and J4 are loaded 0-600-0 lb- Bare Joists- Interior Bottom Chord Extensions in Place

Figure C.23

178
J5 and J6 are loaded 0-600-0 lb- Bare Joists- Interior Bottom Chord Extensions in Place

Figure C.24

J5 and J6 are loaded 0-600-0 lb- Bare Joists- Interior Bottom Chord Extensions in Place

Figure C.25
J1 and J2 are loaded 0-600-0 lb- Bare Joists- All Bottom Chord Extensions in Place

Figure C.26

J1 and J2 are loaded 0-600-0 lb- Bare Joists- All Bottom Chord Extensions in Place

Figure C.27
J1 and J2 are loaded 0-600-0 lb- Bare Joists- All Bottom Chord Extensions in Place

Figure C.28

J1 and J2 are loaded 0-600-0 lb- Bare Joists- All Bottom Chord Extensions in Place

Figure C.29
J3 and J4 are loaded 0-600-0 lb - Bare Joists - All Bottom Chord Extensions in Place

Figure C.30

J3 and J4 are loaded 0-600-0 lb - Bare Joists - All Bottom Chord Extensions in Place

Figure C.31
J3 and J4 are loaded 0-600-0 lb- Bare Joists- All Bottom Chord Extensions Extensions in Place

Figure C.32

J5 and J6 are loaded 0-600-0 lb- Bare Joists- All Bottom Chord Extensions in Place

Figure C.33
J5 and J6 are loaded 0-600-0 lb- Bare Joists- All Bottom Chord Extensions in Place

Figure C.34

J5 and J6 are loaded 0-600-0 lb- Bare Joists- All Bottom Chord Extensions in Place

Figure C.35
Figure C.36
C.2 WET CONCRETE LOADING MEASUREMENTS

Figure C.37

Figure C.38
Wet Concrete (Distributed Loading On Bare Joists) vs. Vertical Midspan Deflection
Exterior Joists J5 and J6- All Bottom Chord Extensions in Place

Concrete Poured on July 1, 2004

Figure C.39

Wet Concrete Load (Distributed Loading On Bare Joists) Load Cell Force vs. Time After the Pour (Concrete poured when all bottom chord extensions in place)

Concrete Poured on July 1, 2004

Figure C.40
Concrete Poured on July 1, 2004

Wet Concrete (Distributed Loading On Bare Joists) vs. Exterior Load Cells
(Concrete poured when all bottom chord extensions in place)

Figure C.41

Concrete Poured on July 1, 2004

Wet Concrete (Distributed Loading On Bare Joists) vs. Interior Load Cells
(Concrete poured when all bottom chord extensions in place)

Figure C.42
C.3 CURED CONCRETE JOIST TESTING

C.3.1 ALL BOTTOM CHORD EXTENSIONS IN PLACE (STAGE 1)

Stage 1 - Midspan Point Loading vs. Vertical Midspan Deflection

J1 and J2 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

July 15, 2004
J1 Side: 76°F
J2 Side: 83°F
On the Slab: 83°F
LC's on J1 side: 78°F
LC's on J2 side: 83°F

Figure C.43

Stage 1 - Midspan Point Loading vs. Vertical Midspan Deflection

J3 and J4 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

July 15, 2004
J3 Side: 83°F
J4 Side: 80°F
On the Slab: 80°F
LC's on J3 side: 76°F
LC's on J4 side: 80°F

Figure C.44
J5 and J6 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

Stage 1 - Midspan Point Loading vs. Vertical Midspan Deflection

J5 Side: 79°F
J6 Side: 81°F
On the Slab: 84°F
LC's on J5 side: 78°F
LC's on J6 side: 80°F

Figure C.45

J1 and J2 are loaded 0-600-0 lb- Concrete is cured for 14 days- All Bottom Chord Extensions in place

Stage 1 - Midspan Point Loading vs. Bottom Chord Extension Force

J1 Side: 76°F
J2 Side: 83°F
On the Slab: 83°F
LC's on J1 side: 76°F
LC's on J2 side: 83°F

Figure C.46
Figure C.47

Figure C.48
Stage 1 - Midspan Point Loading vs. Bottom Chord Extension Force

J1 and J2 are loaded 0-600-0 lb- Concrete is cured for 14 days- All Bottom Chord Extensions in place

Figure C.49

Stage 1 - Midspan Point Loading vs. Bottom Chord Extension Force

J3 and J4 are loaded 0-600-0 lb- Concrete is cured for 14 days- All Bottom Chord Extensions in place

Figure C.50
Stage 1 - Midspan Point Loading vs. Bottom Chord Extension Force

J3 and J4 are loaded 0-600-0 lb- Concrete is cured for 14 days- All Bottom Chord Extensions in place

Figure C.51

Stage 1 - Midspan Point Loading vs. Bottom Chord Extension Force

J3 and J4 are loaded 0-600-0 lb- Concrete is cured for 14 days- All Bottom Chord Extensions in place

Figure C.52
J3 and J4 are loaded 0-600-0 lb- Concrete is cured for 14 days- All Bottom Chord Extensions in place

Stage 1- Midspan Point Loading vs. Bottom Chord Extension Force

Figure C.53

J5 and J6 are loaded 0-600-0 lb- Concrete is cured for 14 days- All Bottom Chord Extensions in place

Stage 1- Midspan Point Loading vs. Bottom Chord Extension Force

Figure C.54

July 15, 2004
J3 Side: 83°F
J4 Side: 80°F
On the Slab: 80°F
LC's on J3 side: 76°F
LC's on J4 side: 80°F

July 15, 2004
J5 Side: 79°F
J6 Side: 81°F
On the Slab: 84°F
LC's on J5 side: 78°F
LC's on J6 side: 80°F
Stage 1 - Midspan Point Loading vs. Bottom Chord Extension Force

J5 and J6 are loaded 0-600-0 lb. Concrete is cured for 14 days. All Bottom Chord Extensions in place.

July 15, 2004
J5 Side: 79°F
J6 Side: 81°F
On the Slab: 84°F
LC’s on J5 side: 78°F
LC’s on J6 side: 80°F

Figure C.55

Stage 1 - Midspan Point Loading vs. Bottom Chord Extension Force

J5 and J6 are loaded 0-600-0 lb. Concrete is cured for 14 days. All Bottom Chord Extensions in place.

July 15, 2004
J5 Side: 79°F
J6 Side: 81°F
On the Slab: 84°F
LC’s on J5 side: 78°F
LC’s on J6 side: 80°F

Figure C.56
J5 and J6 are loaded 0-600-0 lb- Concrete is cured for 14 days- All Bottom Chord Extensions in place

Stage 1 - Midspan Point Loading vs. Bottom Chord Extension Force

Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

Stage 1 - Uniformly Distributed Loading vs. Vertical Midspan Deflection

Figure C.57

Figure C.58
Stage 1 - Uniformly Distributed Loading vs. Vertical Midspan Deflection

Bay 2 (J3 and J4) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in Place.

Distributed Load on the Slab (psf) vs. Vertical Midspan Deflection (in)

Figure C.59

Stage 1 - Uniformly Distributed Loading vs. Vertical Midspan Deflection

Bay 3 (J5 and J6) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in Place.

Distributed Load on the Slab (psf) vs. Vertical Midspan Deflection (in)

Figure C.60
Stage 1 - Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in Place

Figure C.61

Stage 1 - Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in Place

Figure C.62
Figure C.63

Stage 1- Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in Place

Figure C.64

Stage 1- Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions in place
Stage 1 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions in place

Figure C.65

Stage 1 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions in place

Figure C.66
Stage 1- Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions

Bay 1 (J1 and J2) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions in place

Figure C.67

Stage 1- Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions

Bay 2 (J3 and J4) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions in place

Figure C.68
Stage 1 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay2 (J3 and J4) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions in place

July 28, 2004
J1 Side: 74°F
J2 Side: 74°F
On the Slab: 75°F
LC's on J1 side: 74°F
LC's on J2 side: 74°F

Figure C.69

Stage 1 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay2 (J3 and J4) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions in place

July 28, 2004
J1 Side: 74°F
J2 Side: 74°F
On the Slab: 75°F
LC's on J1 side: 74°F
LC's on J2 side: 74°F

Figure C.70
Bay 2 (J3 and J4) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions in place

Bay 3 (J5 and J6) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions in place
Stage 1 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay3 (J5 and J6) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions in place

Figure C.73

Stage 1 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay3 (J5 and J6) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions in place

Figure C.74

July 28, 2004
J1 Side: 76°F
J2 Side: 78°F
On the Slab: 81°F
LC's on J1 side: 76°F
LC's on J2 side: 78°F
Bay3 (J5 and J6) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions in place

July 28, 2004
J1 Side: 76°F
J2 Side: 78°F
On the Slab: 81°F
LC’s on J1 side: 76°F
LC’s on J2 side: 78°F

Stage 1 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions

Figure C.75

Bay1, Bay2 and Bay3 are loaded uniformly - Cured Concrete - All Bottom Chord Extensions in place

Aug 3, 2004
J1 Side: 87°F
J2 Side: 87°F
On the Slab: 105°F

Stage 1 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions

Figure C.76
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions in place

Figure C.79
C.3.2 EXTERIOR BOTTOM CHORD EXTENSIONS TAKEN OUT (STAGE 2)

J1 and J2 are loaded 0-600-0 lb- Cured Concrete- Exterior Bottom Chord Extensions Removed

Aug 9, 2004
J1 Side: 79°F
J2 Side: 84°F
On the Slab: 89°F

Figure C.80

J3 and J4 are loaded 0-600-0 lb- Cured Concrete- Exterior Bottom Chord Extensions Removed

Aug 9, 2004
J3 Side: 80°F
J4 Side: 84°F
On the Slab: 89°F

Figure C.81
Stage 2: Midspan Point Loading vs. Vertical Midspan Deflection

J5 and J6 are loaded 0-600-0 lb - Cured Concrete - Exterior Bottom Chord Extensions Removed

Aug 9, 2004
J5 Side: 81 °F
J6 Side: 88 °F
On the Slab: 92 °F

Figure C.82

Stage 2: Midspan Point Loading vs. Bottom Chord Extension Force

J1 and J2 are loaded 0-600-0 lb - Cured Concrete - Exterior Bottom Chord Extensions Removed

Aug 9, 2004
J1 Side: 79 °F
J2 Side: 84 °F
On the Slab: 89 °F

Figure C.83
Stage 2- Midspan Point Loading vs. Bottom Chord Extension Force

J1 and J2 are loaded 0-600-0 lb- Cured Concrete- Exterior Bottom Chord Extensions Removed

Aug 9, 2004
J1 Side: 79°F
J2 Side: 84°F
On the Slab: 89°F

Figure C.84

Stage 2- Midspan Point Loading vs. Bottom Chord Extension Force

J3 and J4 are loaded 0-600-0 lb- Cured Concrete- Exterior Bottom Chord Extensions Removed

Aug 9, 2004
J3 Side: 80°F
J4 Side: 84°F
On the Slab: 89°F

Figure C.85
Figure C.88

Stage 2- Midspan Point Loading vs. Bottom Chord Extension Force
J5 and J6 are loaded 0-600-0 lb- Cured Concrete- Exterior Bottom Chord Extensions Removed
Aug 9, 2004
J5 Side: 81°F
J6 Side: 88°F
On the Slab: 92°F

Figure C.89

Stage 2: Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- Exterior Bottom Chord Extensions Removed
Aug 9, 2004
J1 Side: 83°F
J2 Side: 89°F
On the Slab: 100°F
Bay 2 (J3 and J4) is loaded uniformly - Cured Concrete - Exterior Bottom Chord Extensions Removed

Distributed Load on the Slab (psf) vs. Vertical Midspan Deflection (in)

August 9, 2004
J3 Side: 82 °F
J4 Side: 86 °F
On the Slab: 98 °F

Stage 2 - Uniformly Distributed Loading vs. Vertical Midspan Deflection

Figure C.90

Bay 3 (J5 and J6) is loaded uniformly - Cured Concrete - Exterior Bottom Chord Extensions Removed

Distributed Load on the Slab (psf) vs. Vertical Midspan Deflection (in)

August 9, 2004
J5 Side: 84 °F
J6 Side: 87 °F
On the Slab: 99 °F

Stage 2 - Uniformly Distributed Loading vs. Vertical Midspan Deflection

Figure C.91
Stage 2 - Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1, Bay2 and Bay3 Loaded- Cured Concrete- Exterior Bottom Chord Extensions Removed

Aug 10, 2004
J1 Side: 76°F
J2 Side: 78°F
On the Slab: 84°F

Figure C.92

Stage 2 - Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1, Bay2 and Bay3 Loaded- Cured Concrete- Exterior Bottom Chord Extensions Removed

Aug 10, 2004
J3 Side: 76°F
J4 Side: 78°F
On the Slab: 84°F

Figure C.93
Stage 2- Uniformly Distributed Loading vs. Vertical Midspan Deflection

Bay1, Bay2 and Bay3 Loaded- Cured Concrete- Exterior Bottom Chord Extensions Removed

Aug 10, 2004
J5 Side: 76°F
J6 Side: 78°F
On the Slab: 84°F

Stage 2- Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- Exterior Bottom Chord Extensions Removed

Aug 9, 2004
J1 Side: 83°F
J2 Side: 89°F
On the Slab: 100°F

Figure C.94

Figure C.95
Stage 2- Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- Exterior Bottom Chord Extensions Removed

Aug 9, 2004
J1 Side: 83°F
J2 Side: 89°F
On the Slab: 100°F

Figure C.96

Stage 2- Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay2 (J3 and J4) is loaded uniformly- Cured Concrete- Exterior Bottom Chord Extensions Removed

Aug 9, 2004
J3 Side: 82°F
J4 Side: 86°F
On the Slab: 98°F

Figure C.97
Bay2 (J3 and J4) is loaded uniformly- Cured Concrete- Exterior Bottom Chord Extensions Removed

\[ \text{Aug 9, 2004}
\text{J3 Side: 82°F}
\text{J4 Side: 86°F}
\text{On the Slab: 98°F} \]

Stage 2- Uniformly Distributed Loading vs. Bottom Chord Extension Force

Figure C.98

Bay3 (J5 and J6) is loaded uniformly- Cured Concrete- Exterior Bottom Chord Extensions Removed

\[ \text{Aug 9, 2004}
\text{J5 Side: 84°F}
\text{J6 Side: 87°F}
\text{On the Slab: 99°F} \]

Stage 2- Uniformly Distributed Loading vs. Bottom Chord Extension Force

Figure C.99
Stage 2 - Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay3 (J5 and J6) is loaded uniformly - Cured Concrete - Exterior Bottom Chord Extensions Removed

Aug 9, 2004
J5 Side: 84°F
J6 Side: 87°F
On the Slab: 99°F

Figure C.100

Stage 2 - Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay1, Bay2 and Bay3 are loaded uniformly - Cured Concrete - Exterior Bottom Chord Extensions Removed

Aug 10, 2004
J1 Side: 76°F
J2 Side: 78°F
On the Slab: 84°F

Figure C.101
Bay1, Bay2 and Bay3 are loaded uniformly - Cured Concrete - Exterior Bottom Chord Extensions Removed

Aug 10, 2004
J1 Side: 76°F
J2 Side: 78°F
On the Slab: 84°F

Stage 2 - Uniformly Distributed Loading vs. Bottom Chord Extension Force

Figure C.102
C.3.3 INTERIOR BOTTOM CHORD EXTENSIONS TAKEN OUT (STAGE 3)

Stage 3 - Midspan Point Loading vs. Vertical Midspan Deflection
J1 and J2 are loaded 0-600-0 lb - Cured Concrete - All Bottom Chord Extensions Removed

Aug 17, 2004
J1 Side: 74 °F
J2 Side: 78 °F
On the Slab: 84 °F

Figure C.103

Stage 3 - Midspan Point Loading vs. Vertical Midspan Deflection
J3 and J4 are loaded 0-600-0 lb - Cured Concrete - All Bottom Chord Extensions Removed

Aug 17, 2004
J3 Side: 74 °F
J4 Side: 79 °F
On the Slab: 84 °F

Figure C.104
Stage 3 - Midspan Point Loading vs. Vertical Midspan Deflection

J5 and J6 are loaded 0-600-0 lb - Cured Concrete - All Bottom Chord Extensions Removed

Aug 17, 2004
J5 Side: 74°F
J6 Side: 78°F
On the Slab: 84°F

Figure C.105

Stage 3 - Uniformly Distributed Loading vs. Vertical Midspan Deflection

Bay1 (J1 and J2) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions Removed

Aug 17, 2004
J1 Side: 88°F
J2 Side: 90°F
On the Slab: 92°F

Figure C.106
Figure C.107

Stage 3- Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay 2 (J3 and J4) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions Removed

Aug 17, 2004
J3 Side: 90°F
J4 Side: 100°F
On the Slab: 95°F

Figure C.108

Stage 3- Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay 3 (J5 and J6) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions Removed

Aug 17, 2004
J5 Side: 90°F
J6 Side: 93°F
On the Slab: 96°F
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions Removed.

Vertical Midspan Deflection (in) vs. Distributed Load on the Slab (psf)

Figure C.109

Stage3- Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions Removed.

Figure C.110
Stage 3 - Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay 1, Bay 2 and Bay 3 are loaded uniformly - Cured Concrete - All Bottom Chord Extensions Removed

Aug 19, 2004
J5 Side: 88°F
J6 Side: 90°F
On the Slab: 106°F

Figure C.111
C.3.4 INTERIOR BOTTOM CHORD EXTENSIONS RE-INSTALLED (STAGE 4)

Stage 4- Midspan Point Loading vs. Vertical Midspan Deflection
J1 and J2 are loaded 0-600-0 lb- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Point Load at Midspan (lb) vs. Vertical Midspan Deflection (in)

Figure C.112

Stage 4- Midspan Point Loading vs. Vertical Midspan Deflection
J3 and J4 are loaded 0-600-0 lb- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Point Load at Midspan (lb) vs. Vertical Midspan Deflection (in)

Figure C.113
Figure C.114

Stage 4- Midspan Point Loading vs. Vertical Midspan Deflection
J5 and J6 are loaded 0-600-0 lb- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Figure C.115

Stage 4- Midspan Point Loading vs. Bottom Chord Extension Force
J1 and J2 are loaded 0-600-0 lb- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Sep 21, 2004
J5 Side: 74°F
J6 Side: 80°F
On the Slab: 95°F

Sep 21, 2004
J1 Side: 74°F
J2 Side: 80°F
On the Slab: 95°F
Stage 4- Midspan Point Loading vs. Bottom Chord Extension Force
J1 and J2 are loaded 0-600-0 lb- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Sep 21, 2004
J1 Side: 74°F
J2 Side: 80°F
On the Slab: 95°F

Stage 4- Midspan Point Loading vs. Bottom Chord Extension Force
J3 and J4 are loaded 0-600-0 lb- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Sep 21, 2004
J3 Side: 74°F
J4 Side: 80°F
On the Slab: 95°F

Figure C.116

Figure C.117
J3 and J4 are loaded 0-600-0 lb- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Stage 4- Midspan Point Loading vs. Bottom Chord Extension Force

J3 Side: 74°F
J4 Side: 80°F
On the Slab: 95°F

Sep 21, 2004

Figure C.118

J5 and J6 are loaded 0-600-0 lb- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Stage 4- Midspan Point Loading vs. Bottom Chord Extension Force

J5 Side: 74°F
J6 Side: 80°F
On the Slab: 95°F

Sep 21, 2004

Figure C.119

228
Figure C.120

Stage 4- Midspan Point Loading vs. Bottom Chord Extension Force
J5 and J6 are loaded 0-600-0 lb- Cured Concrete- Interior Bottom Chord Extensions Re-installed.

Figure C.121

Stage 4- Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- Interior Bottom Chord Extensions Re-installed.
Figure C.122

Stage 4 - Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay2 (J3 and J4) is loaded uniformly- Cured Concrete-
Interior Bottom Chord Extensions Re-installed

Figure C.123

Stage 4 - Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay 3 (J5 and J6) is loaded uniformly- Cured Concrete-
Interior Bottom Chord Extensions Re-installed

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Figure C.124

Stage 4 - Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete-Interior Bottom Chord Extensions Re-installed

Vertical Midspan Deflection (in)

Distributed Load on the Slab (psf)

Figures C.124 and C.125 show the relationship between uniformly distributed loading and vertical midspan deflection for different sides of the structure. The graphs illustrate the deflection behavior under varying loads and temperatures.

Figure C.125

Stage 4 - Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete-Interior Bottom Chord Extensions Re-installed

Vertical Midspan Deflection (in)

Distributed Load on the Slab (psf)
Stage 4- Uniformly Distributed Loading vs. Vertical Midspan Deflection

Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Sep 21, 2004
J5 Side: 78°F
J6 Side: 80°F
On the Slab: 96°F

Figure C.126

Stage 4- Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Sep 21, 2004
J1 Side: 77°F
J2 Side: 89°F
On the Slab: 101°F

Figure C.127
Bay 1 (J1 and J2) is loaded uniformly- Cured Concrete- Interior Bottom Chord Extensions Re-installed.

Stage 4- Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay 2 (J3 and J4) is loaded uniformly- Cured Concrete- Interior Bottom Chord Extensions Re-installed.

Figure C.128

Figure C.129
Stage 4: Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay2 (J3 and J4) is loaded uniformly—Cured Concrete—Interior Bottom Chord Extensions Re-installed

Sep 21, 2004
J3 Side: 72°F
J4 Side: 85°F
On the Slab: 100°F

Stage 4: Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay3 (J5 and J6) is loaded uniformly—Cured Concrete—Interior Bottom Chord Extensions Re-installed

Sep 21, 2004
J5 Side: 76°F
J6 Side: 81°F
On the Slab: 102°F

Figure C.130

Figure C.131
Stage 4 - Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay3 (J5 and J6) is loaded uniformly- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Figure C.132

Stage 4 - Uniformly Distributed Loading vs. Bottom Chord Extension Force

Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- Interior Bottom Chord Extensions Re-installed

Figure C.133
Stage 4- Uniformly Distributed Loading vs. Bottom Chord Extension Force
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete-
Interior Bottom Chord Extensions Re-installed
C.3.5 EXTERIOR BOTTOM CHORD EXTENSIONS RE-INSTALLED (STAGE 5)

Stage 5 - Midspan Point Loading vs. Vertical Midspan Deflection
J1 and J2 are loaded 0-600-0 lb - Cured Concrete - All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 68°F
J2 Side: 70°F
On the Slab: 70°F

Figure C.135

Stage 5 - Midspan Point Loading vs. Vertical Midspan Deflection
J3 and J4 are loaded 0-600-0 lb - Cured Concrete - All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 67°F
J2 Side: 70°F
On the Slab: 71°F

Figure C.136
Stage 5- Midspan Point Loading vs. Vertical Midspan Deflection

J5 and J6 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 67°F
J2 Side: 70°F
On the Slab: 72°F

Figure C.137

Stage 5- Midspan Point Loading vs. Bottom Chord Extension Force

J1 and J2 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 68°F
J2 Side: 70°F
On the Slab: 70°F

Figure C.138
Figure C.139

Stage 5- Midspan Point Loading vs. Bottom Chord Extension Force

J1 and J2 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 68°F
J2 Side: 70°F
On the Slab: 70°F

Figure C.140

Stage 5- Midspan Point Loading vs. Bottom Chord Extension Force

J1 and J2 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 68°F
J2 Side: 70°F
On the Slab: 70°F
Stage 5- Midspan Point Loading vs. Bottom Chord Extension Force

J1 and J2 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 68°F
J2 Side: 70°F
On the Slab: 70°F

Figure C.141

Stage 5- Midspan Point Loading vs. Bottom Chord Extension Force

J3 and J4 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 67°F
J2 Side: 70°F
On the Slab: 71°F

Figure C.142
Figure C.143

Stage 5- Midspan Point Loading vs. Bottom Chord Extension Force
J3 and J4 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 67 °F
J2 Side: 70 °F
On the Slab: 71 °F

Figure C.144

Stage 5- Midspan Point Loading vs. Bottom Chord Extension Force
J3 and J4 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 67 °F
J2 Side: 70 °F
On the Slab: 71 °F
Figure C.145

Figure C.146
J5 and J6 are loaded 0-600-0 lb- Cured Concrete- All Bottom Chord Extensions in Place

Figure C.147

October 20, 2004
J1 Side: 67°F
J2 Side: 70°F
On the Slab: 72°F

Stage 5- Midspan Point Loading vs. Bottom Chord Extension Force

Figure C.148
Stage 5- Midspan Point Loading vs. Bottom Chord Extension Force

J5 and J6 are loaded 0-600-0 lb - Cured Concrete - All Bottom Chord Extensions in Place

October 20, 2004
J1 Side: 67 °F
J2 Side: 70 °F
On the Slab: 72 °F

Figure C.149

Stage 5- Uniformly Distributed Loading vs. Vertical Midspan Deflection

Bay1 (J1 and J2) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions are in Place

October 20, 2004
J1 Side: 66 °F
J2 Side: 66 °F
On the Slab: 66 °F

Figure C.150
Bay 2 (J3 and J4) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions are in Place.

Stage 5 - Uniformly Distributed Loading vs. Vertical Midspan Deflection

October 20, 2004
J3 Side: 68°F
J4 Side: 70°F
On the Slab: 71°F

Figure C.151

Bay 3 (J5 and J6) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions are in Place.

Stage 5 - Uniformly Distributed Loading vs. Vertical Midspan Deflection

October 20, 2004
J5 Side: 64°F
J6 Side: 66°F
On the Slab: 67°F

Figure C.152
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in Place

Stage 5- Uniformly Distributed Loading vs. Vertical Midspan Deflection
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in Place

Figure C.153

Figure C.154
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in Place

Figure C.155

Stage 5- Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

Figure C.156

October 21, 2004
J1 Side: 60°F
J2 Side: 64°F
On the Slab: 63°F

October 20, 2004
J1 Side: 66°F
J2 Side: 66°F
On the Slab: 66°F
Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

Figure C.157

Stage 5- Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay1 (J1 and J2) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

Figure C.158
Bay 1 (J1 and J2) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions are in place

October 20, 2004
J1 Side: 66°F
J2 Side: 66°F
On the Slab: 66°F

Stage 5 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions

Figure C.159

Bay 2 (J3 and J4) is loaded uniformly - Cured Concrete - All Bottom Chord Extensions are in place

October 20, 2004
J3 Side: 68°F
J4 Side: 70°F
On the Slab: 71°F

Stage 5 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions

Figure C.160
Figure C.161

Stage 5 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay2 (J3 and J4) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

October 20, 2004
J3 Side: 68°F
J4 Side: 70°F
On the Slab: 71°F

Figure C.162

Stage 5 - Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay2 (J3 and J4) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

October 20, 2004
J3 Side: 68°F
J4 Side: 70°F
On the Slab: 71°F
Bay2 (J3 and J4) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

Bay3 (J5 and J6) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

Figure C.163

Figure C.164
Bay3 (J5 and J6) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

October 20, 2004
J5 Side: 64 °F
J6 Side: 66 °F
On the Slab: 67 °F

Figure C.165

Figure C.166
Figure C.167

Stage 5- Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay3 (J5 and J6) is loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

October 20, 2004
J5 Side: 64 °F
J6 Side: 66 °F
On the Slab: 67 °F

Figure C.168

Stage 5- Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

October 21, 2004
J1 Side: 60 °F
J2 Side: 64 °F
On the Slab: 63 °F
Stage 5- Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

Figure C.169

Stage 5- Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions
Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

Figure C.170
Stage 5- Uniformly Distributed Loading vs. Load on the Bottom Chord Extensions

Bay1, Bay2 and Bay3 are loaded uniformly- Cured Concrete- All Bottom Chord Extensions are in place

October 21, 2004
J1 Side: 60°F
J2 Side: 64°F
On the Slab: 63°F

Figure C.171

Figure C.172
20 psf x 3.5 ft = 70 lb / ft

Figure C.173

600 lb

0.0171 in.

Figure C.174

600 lb

0.0224 in.
Figure C.175

20 psf x 3.5 ft = 70 lb / ft

0.0320 in.

20 psf x 3.5 ft = 70 lb / ft

0.0445 in.

20 psf x 3.5 ft = 70 lb / ft

0.0320 in.