

Fatigue

Check Fatigue and Deflection due to Live Load

$$M_{LL} = 9.10219028$$

Fatigue In Negative Bending:

$$\text{SM top of welds/punchout in negative bending} = 54.64879 \text{ in}^3$$

$$M_F = M_{\text{strength}} / 3 = 3.034063$$

$$\text{Check liveload stress} = 3.034063 \times 12 / \text{SM} = 0.666232 \text{ ksi}$$

at top of welds/punchout in negative bending

check against 1/2 cat C= 5 ksi: OK

Fatigue In Positive Bending:

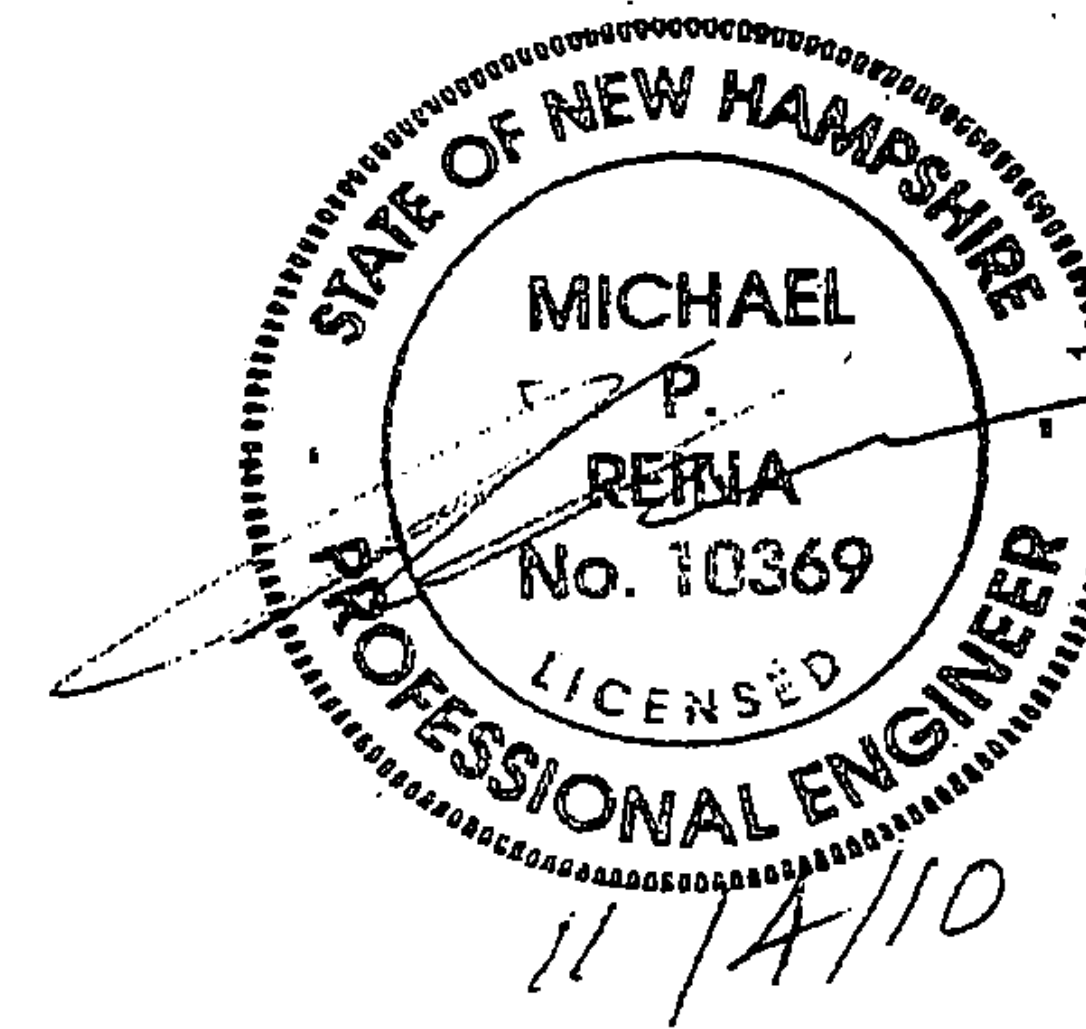
$$\text{SM bottom of punchout/weld in positive bending} = 23.14 \text{ in}^3$$

$$M_F = M_{\text{strength}} / 3 = 3.034063$$

$$\text{Check liveload stress} = 3.034063 \times 12 / \text{SM} = 1.573408 \text{ ksi}$$

at bottom of welds in positive bending

check against 1/2 cat C= 5 ksi: OK



179 PRE-FAB
DECK PANELS