



STRESS DIAGRAM
72' 8" STEEL SLEEPING CAR
FRAME CONSTRUCTION
TYPE 3.

SIDE GIRDER
 J1 4 x (4.25 x 16.08²) 1104
 J2 15 x (4.19 x 16.3²) 1128
 Z1 2232 / 1788 = 125 Z2 2232 / 1612 = 123

SECTION	MAX. COMPRESSION	MAX. TENSION
C - C	200526 / 125 = 16000 ⁰ σ	200526 / 125 = 16300 ⁰ σ

CENTER SILL SECTION C-C
 J1 1125 x 9.39² = 990
 J2 4 x (5.74 x 8.42) = 410
 J3 1110 x (16.38 x 4.94²) = 1510
 J4 3 x (3.70 x 13.9²) = 1478
 Z1 4383 / 558 = 457 Z2 4383 / 2016 = 210

SECTION	MAX. COMPRESSION	MAX. TENSION
C - C	1893464 + 400000 + 400000 x 3.02 = 17000 ⁰ σ 457	1893464 - 9030 ⁰ σ 210
A - A	1415800 + 400000 + 400000 x 2.06 = 11660 ⁰ σ 262	1415800 - 5640 ⁰ σ 251

CENTER SILL SECTION A-A
 J1 1072 x 8.44² = 764
 J2 2 x (4.54 x 7.44²) = 253
 J3 176 = 176
 J4 4 x (4.22 x 6.86²) = 202
 J5 12 x 8² = 768
 Z1 2163 / 863 = 251 Z2 2163 / 825 = 262