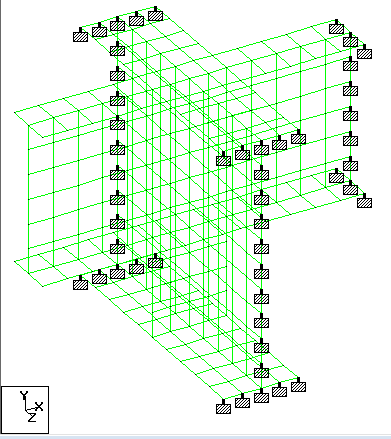
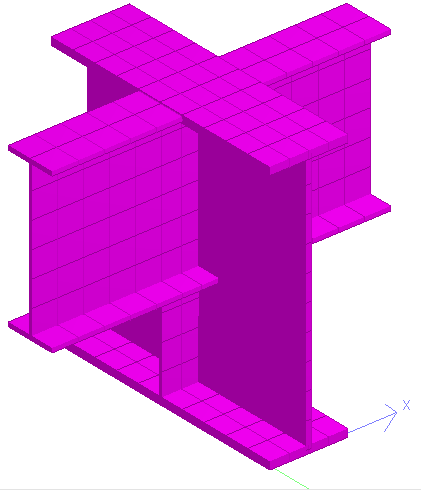
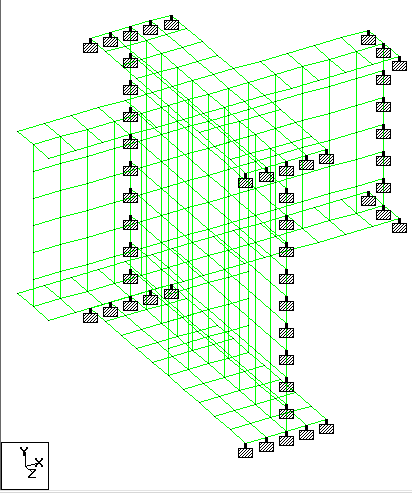
**CALCULATION OF STRESS CONCENTRATION FACTORS FOR BEAM (1000x300x20x30) TO BEAM (600x200x11x17) FLANGE CONNECTION - Unequal height with continuity**

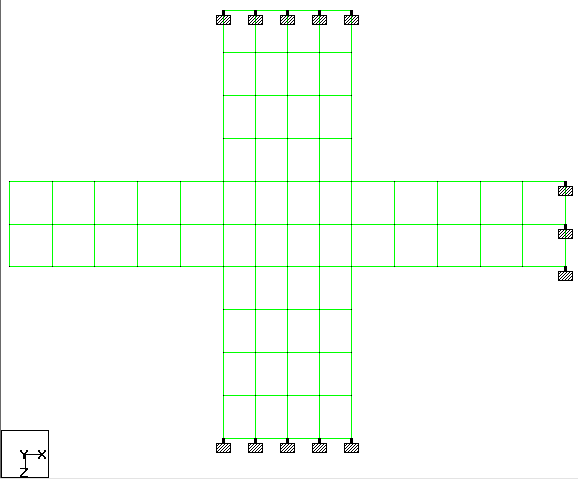
**STAAD Model:**



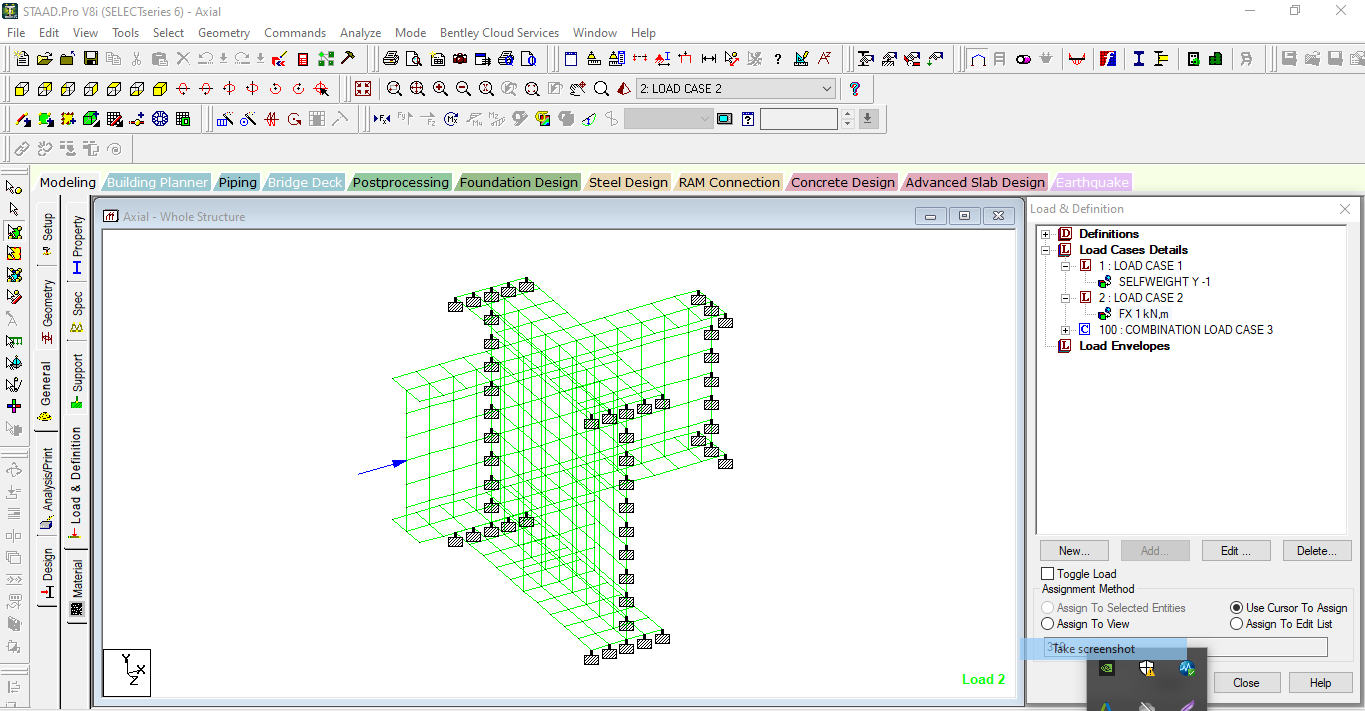


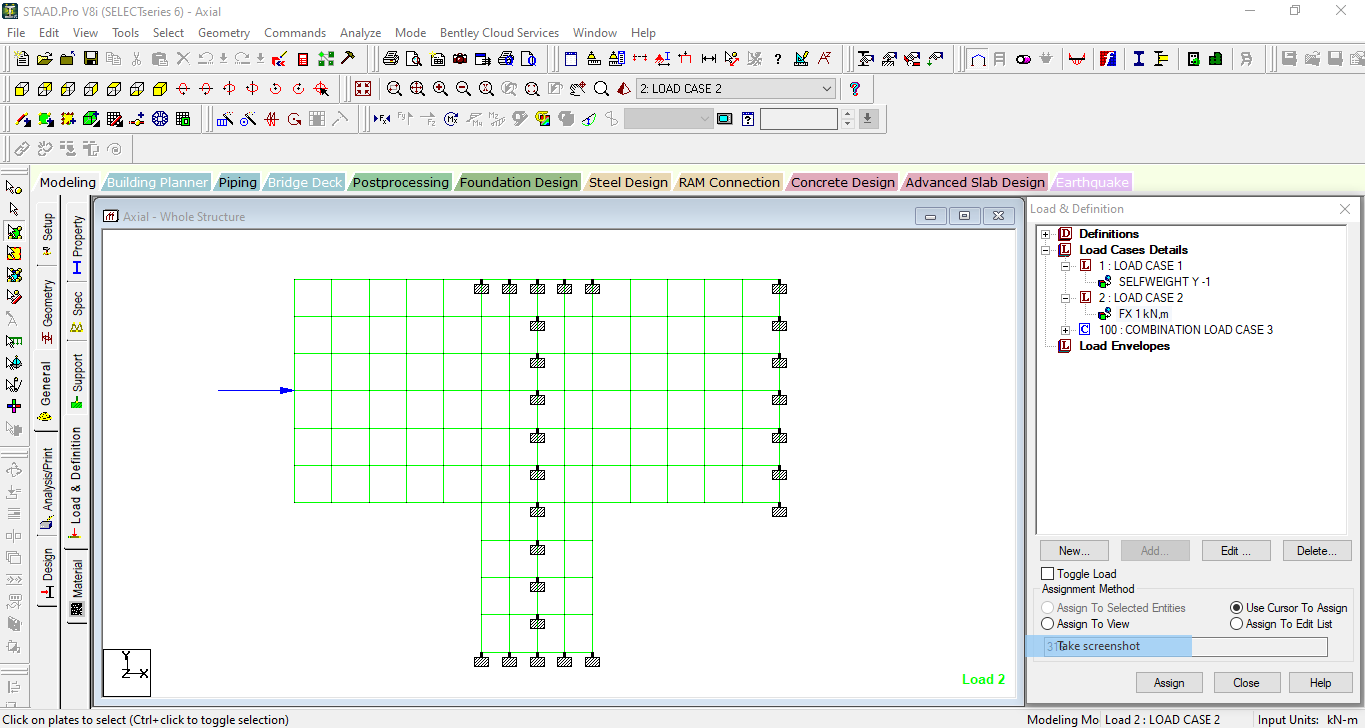
**Boundary condition**





**LOADING – AXIAL FORCE**



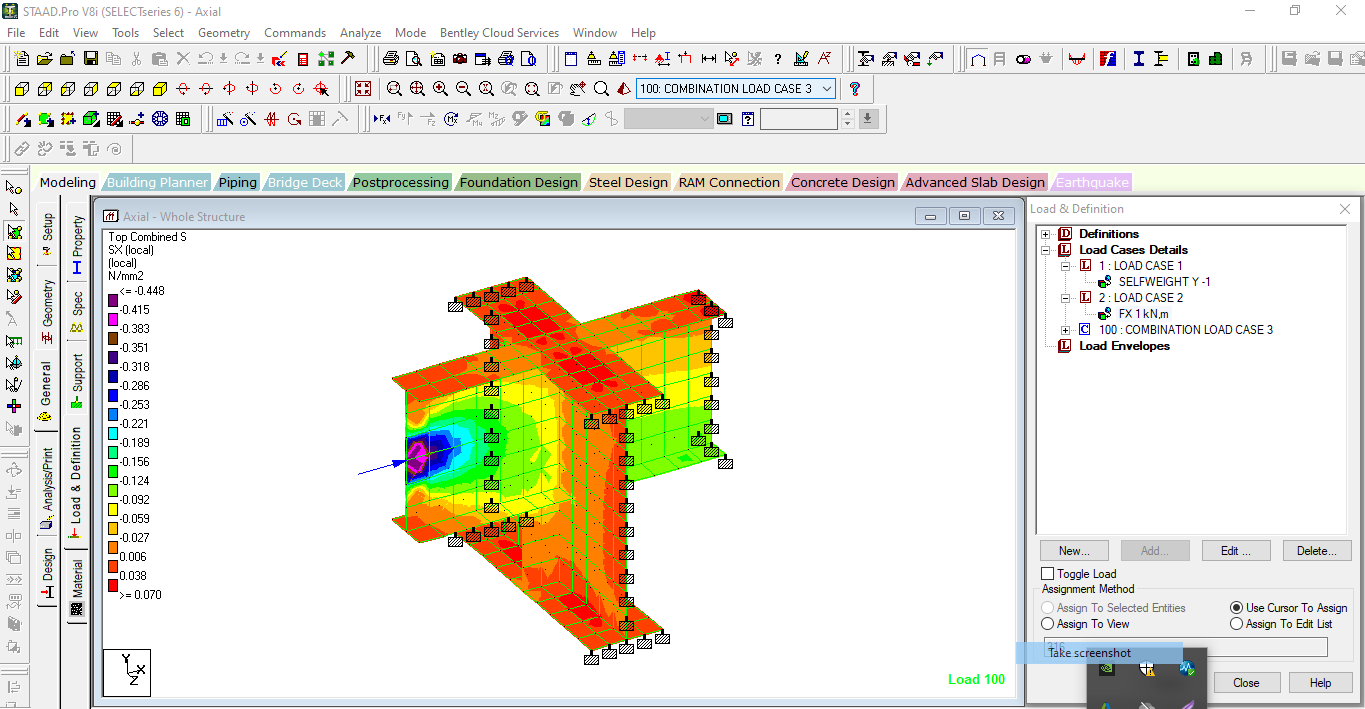


Axial Area (600x200x11x17), A = 13026 mm2

Axial Force (P) = 1000 N

σ nom.axial = P/A = 1000/13026 = 0.077 N/mm2

**STAAD Output – Plate stress**

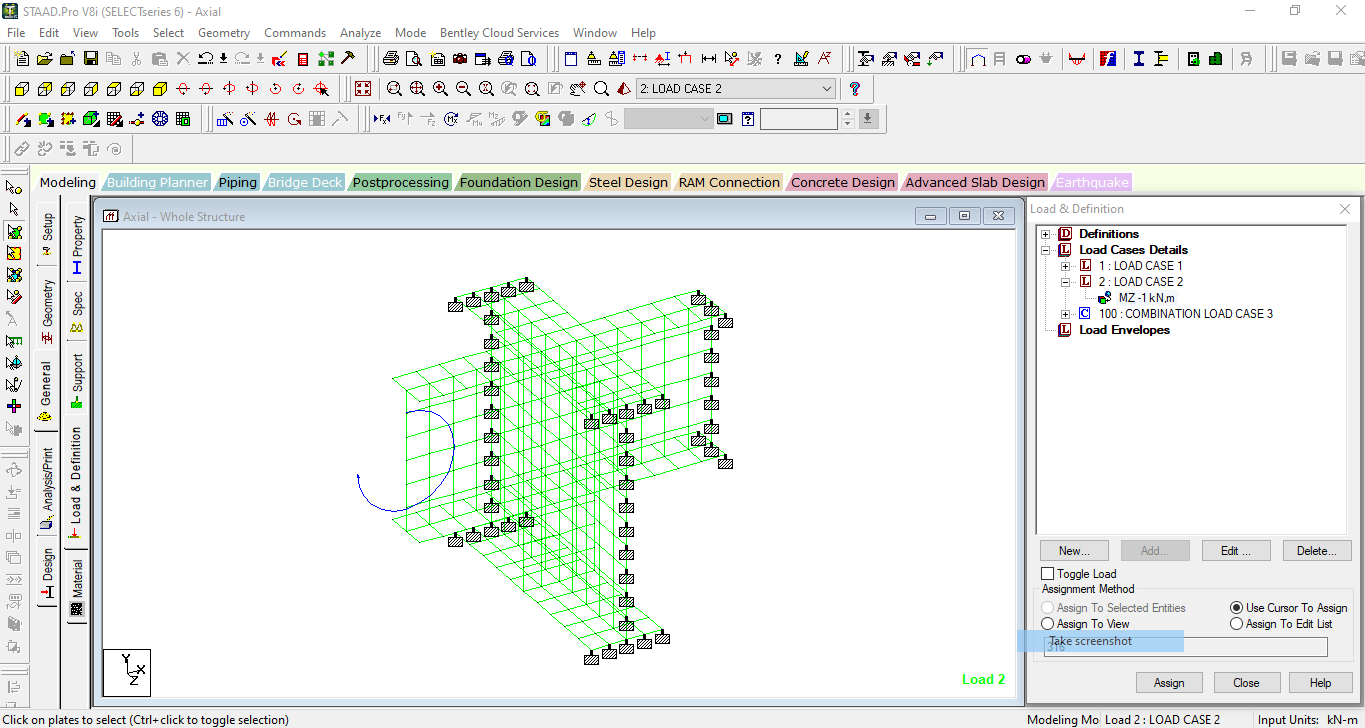


Maximum Hot spot stress at top and bottom

σ HSS.axial = 0.027N/mm2

SCF axial =0.027/0.077 = 0.351

**LOADING – IN-PLANE BENDING**

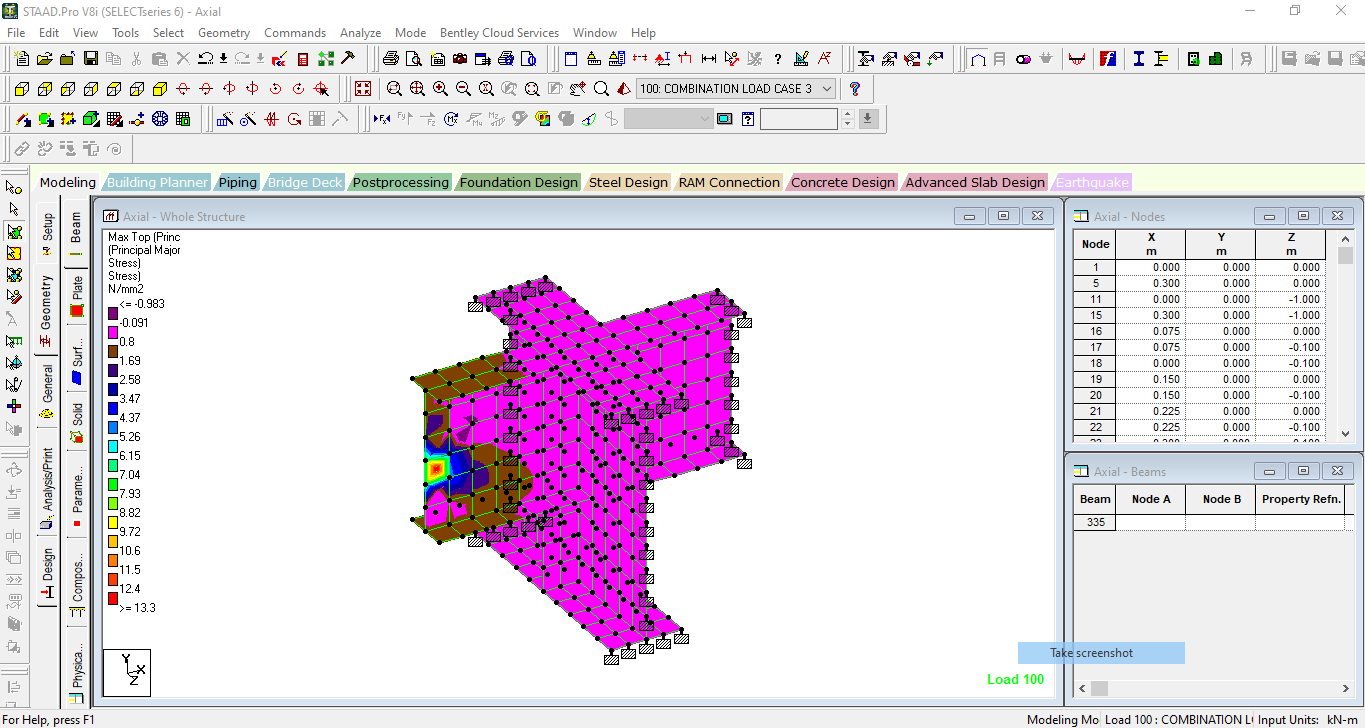


Section Modulus (600x200x11x17), Wx = 2480621.46mm3

In-plane moment (M) = 1000000 N-mm

σ nom.major = M/Wx = 1000000/2480621.46 = 0.403 N/mm2

**STAAD Output – Plate stress**

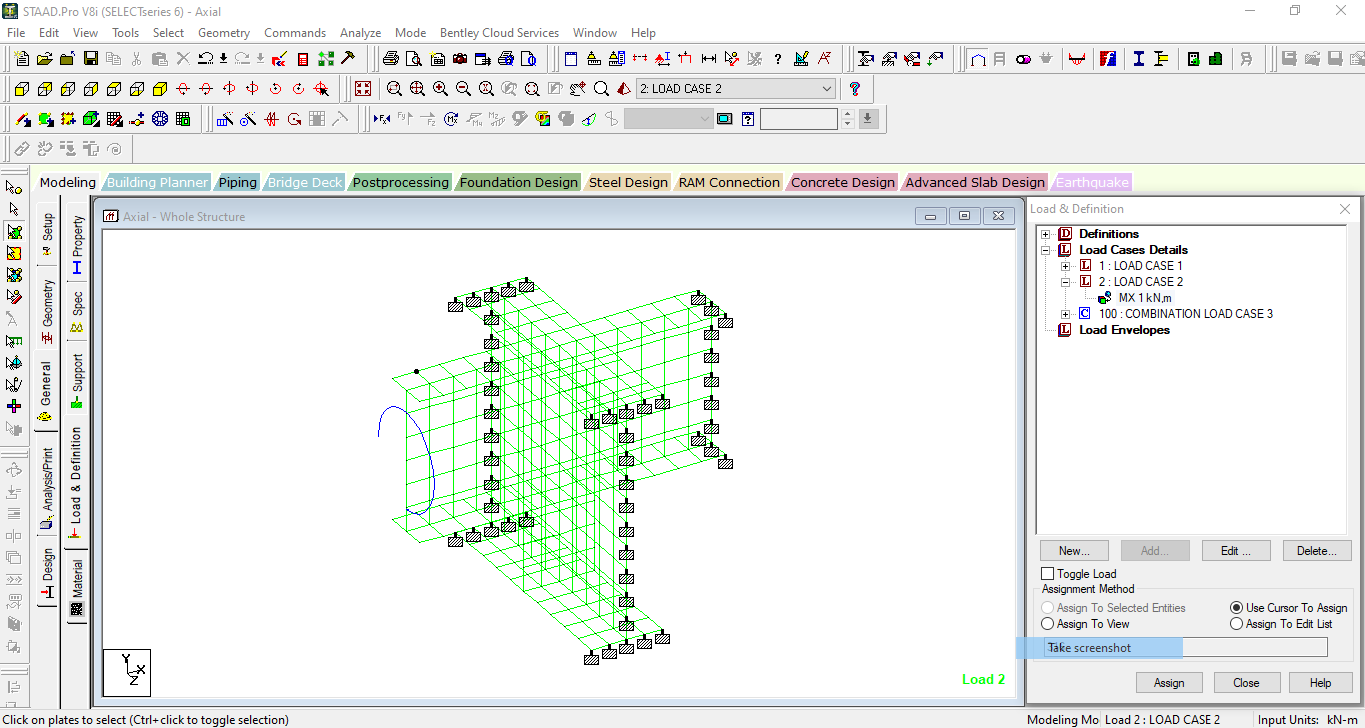


Maximum Hot spot stress at top and bottom

σ HSS.in-plane = 0.797N/mm2

SCF axial =0.797/0.403 = 1.985

**LOADING – OUT-PLANE BENDING**

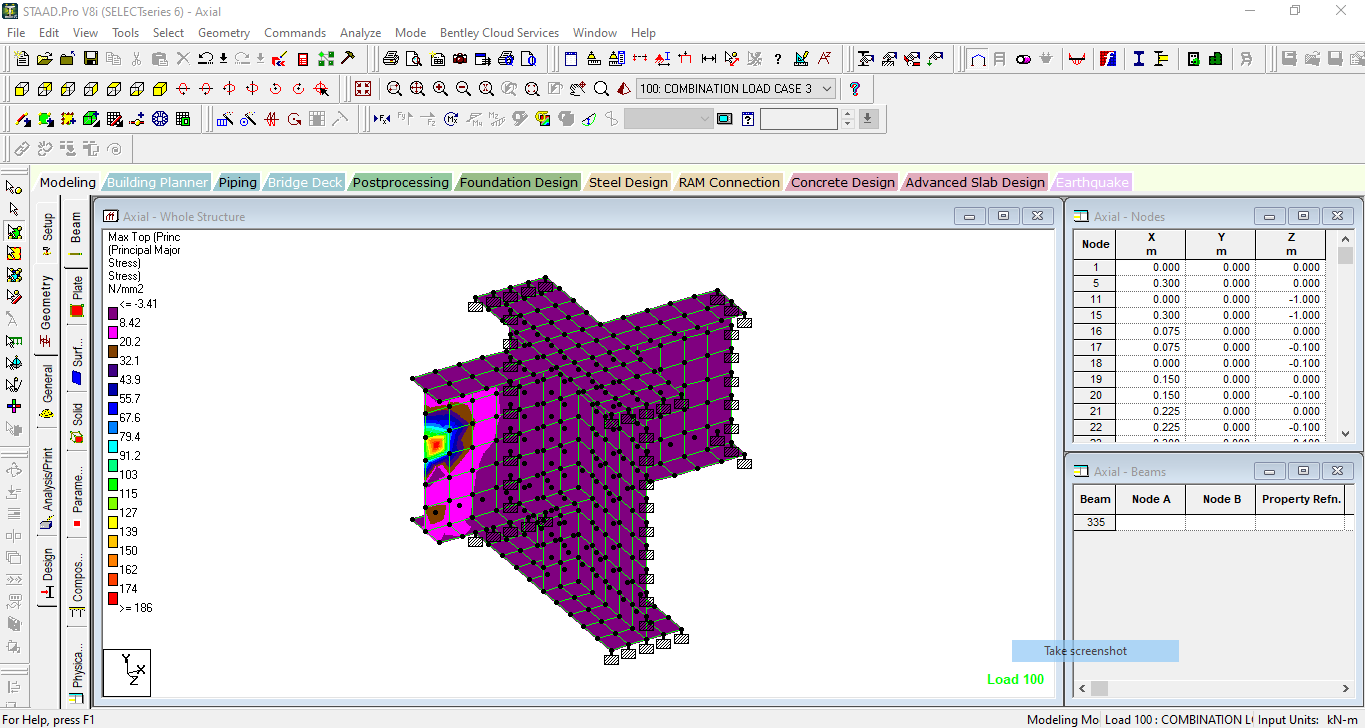


Section Modulus (600x200x11x17), Wy = 227294.46 mm3

In-plane moment (M) = 1000000 N-mm

σ nom.major = M/Wy= 1000000/227294.46 = 4.3996 N/mm2

**STAAD Output – Plate stress**



Maximum Hot spot stress at top and bottom

σ HSS.in-plane = 8.42N/mm2

SCF axial =8.42/4.3996 = 1.913