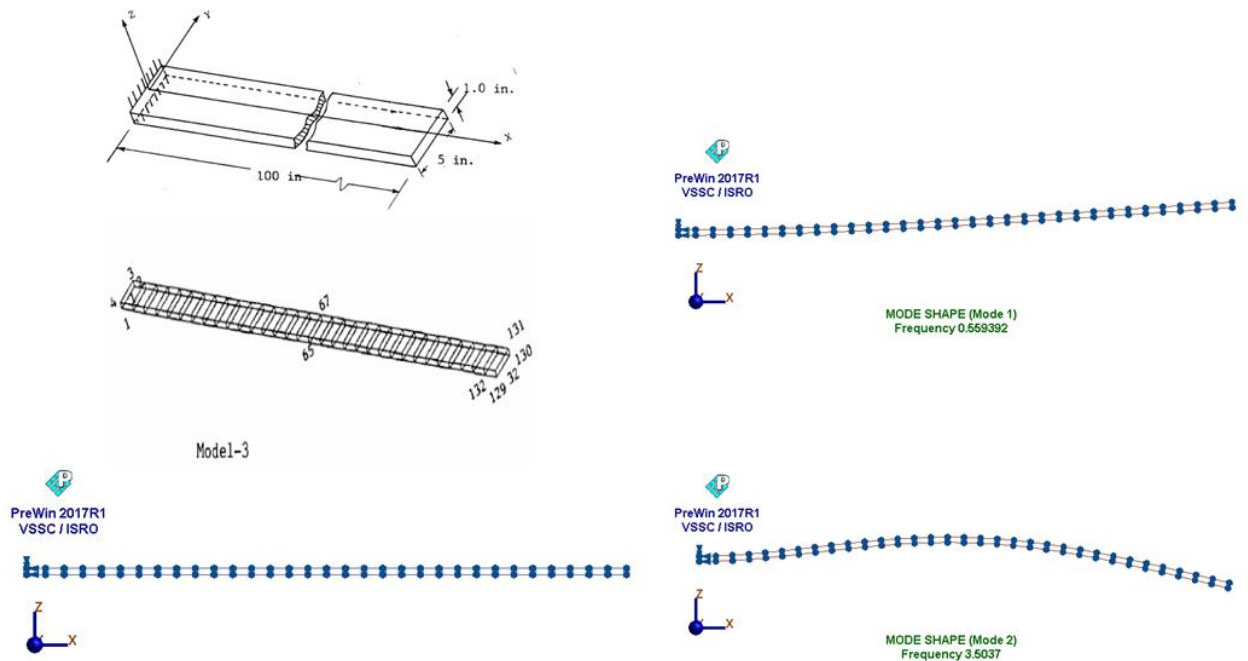


## Free vibration analysis of a cantilever beam using solid elements-3



**Boundary condition** :  $U_x, U_y, U_z = 0$  at left end.  $U_y = 0$  at all nodes

**Material property** :  $E = 12 \times 10^8 \text{ psi}$ ,  $\nu = 0.0$ ,  $\rho = 1.0 \text{ lb-sec}^2/\text{in}^4$

**Element type** : 3-D solid element

**Finite element statistics** :

Number of element	Number of nodes	Degrees of freedom
32	132	256

Mode	Theoretical	FEAST <sup>SMT</sup>	NISA2 <sup>®</sup>
Bending 1	0.56	0.56	0.56
Bending 2	3.51	3.50	3.51
Bending 3	9.82	9.81	9.88
Bending 4	19.24	19.23	19.48
Bending 5	31.81	31.81	32.47
Bending 6	47.52	47.57	49.01
Bending 7	66.37	66.54	69.33
Axial 1	86.60	86.59	86.61