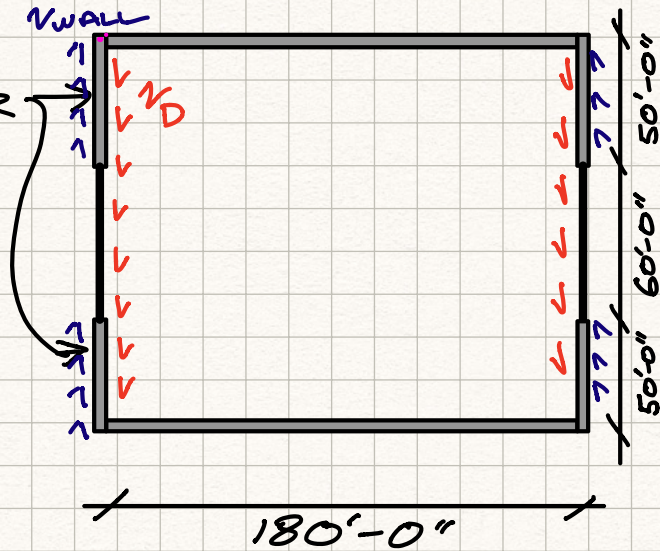


$$F_{px} = 10 \text{ KIP}$$

SPECIAL REINF.
CONCRETE SHEAR
WALL

$$\Omega_o = 2.5$$

SEISMIC
DESIGN
CATEGORY D



FLEXIBLE
DIAPHRAGM

- 1) FIND MAX CHORD FORCE ALONG N-S EDGES
- 2) FIND DIAPHRAGM SHEAR FORCE (UNITS = PLF)
- 3) FIND COLLECTOR FORCE

$$\textcircled{1} \quad M_{\max} = \frac{(10 \text{ KIP})(180 \text{ ft})}{4} = 450 \text{ KIP-FT}$$

FIND MAXIMUM
DIAPHRAGM MOMENT
 M_{\max}

$$T/C = \frac{450 \text{ KIP-FT}}{160 \text{ FT}} \times 2.5 = 7 \text{ KIP}$$

\uparrow
 Ω_o

FIND MAXIMUM
CHORD FORCE
(TENSION/
COMPRESSION)

$$\textcircled{2} \quad V_D = \frac{10 \text{ KIP}}{2(160 \text{ ft})} = 31.25 \text{ PLF}$$

FIND DIAPHRAGM
SHEAR V_D

$$\textcircled{3} \quad V_{\text{WALL}} = \frac{10 \text{ KIP}}{2(100 \text{ ft})} = 50 \text{ PLF}$$

FIND SHEAR
IN WALLS V_{WALL}

$$P_{\text{COLLECTOR}} = 50 \text{ ft}(50 \text{ PLF} - 31.25 \text{ PLF}) \times 2.5$$

\uparrow
 Ω_o

$$= 2.3 \text{ KIP}$$

FIND MAXIMUM
COLLECTOR FORCE