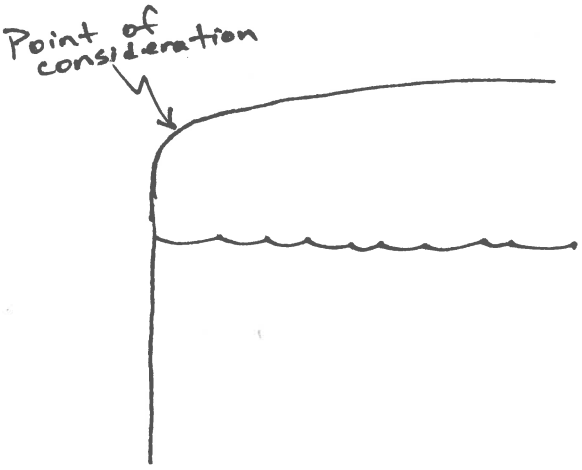
Top Head (F&D)

120" ∅ Tank

Head 120" dish radius

7.2" knuckle radius (6%)

10 psig



$R_1 = 7.2''$ (knuckle radius)

$R_2 = 78.97''$ (from Solidworks)

*Ignore weight of tank above point
- No external forces
- No liquid head

Meridional: $T_1 = \frac{R_2}{2}\left(P + \frac{W+F}{A_t}\right)$ 5.10.2.1 (1)

$$T_1 = \frac{78.97\ in}{2}\left(10\ \frac{lb}{in^2} + 0\right)$$

$$\boxed{T_1 = 394.85\ \frac{lb}{in}}$$ (positive when in tension)

Latitudinal: $T_2 = R_2\left(P - \frac{T_1}{R_1}\right)$ 5.10.2.1 (2)

$$= 78.97\ in\left(10\ \frac{lb}{in^2} - \frac{394.85\ lb/in}{7.2\ in}\right)$$

$$\boxed{T_2 = -3541.04\ \frac{lb}{in}}$$ (negative when in compression)