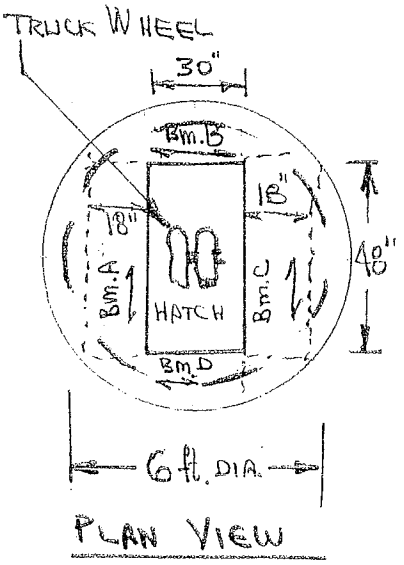
CASE II includes smaller slabs where hatch occupies a large amount of surface area.

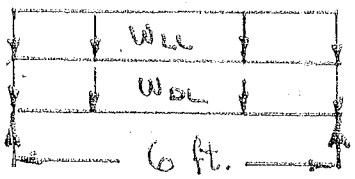
A. When wheel is on hatch, load will be dispersed to 4 beams around the perimeter. If hatch is square, ¼ of load will go to each beam. If hatch is rectangular, loads will be dispersed proportionally around the perimeter to Beams (A, B, C, and D) i.e. for 30 in X 48 in hatch,



PLAN VIEW

$$W_{LL} = \frac{\text{Load (lb.)}}{2(2.5\text{ ft} + 4\text{ ft})}$$

$$= \frac{16000\text{ lb.}}{13\text{ ft.}} = 1231\text{ lb/ft}$$



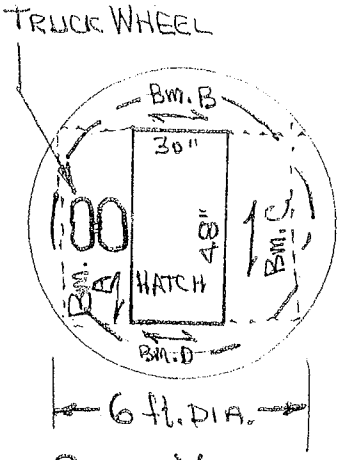
FORCE DIAGRAM

Moment due to LL only

$$= \frac{1231\text{ lb/ft} \times 6^2\text{ ft}^2}{8}$$

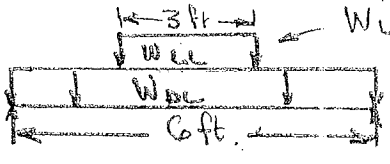
$$= 5540\text{ ft. lb.}$$

B. When truck wheel is adjacent to hatch, worst situation is with wheel at center of span on Beam (A, B, C, or D). This condition will obviously create a stronger design than slabs discussed in "A" above.



PLAN VIEW

When truck wheel is on Bm.B or Bm.D, it will be on top of the supporting wall below. Concrete will only be in compression not bending. Worst case then is when load is on Bm. A or Bm. C



FORCE DIAGRAM

$W_{LL} = 5333\text{ lb/ft}$ (from Case I)

Moment due to LL only

$$= 5333 \times \frac{3}{2} \times \frac{6}{2} - 5333 \times \frac{3}{2} \times \frac{3}{4}$$

$$= 18000\text{ ft. lb.}$$