

Appendix D Example 9 – Effect of Overturning on Post Loads

Referring to Figure D-9-1, *Falsework Reactions*, in the unloaded and loaded condition the theoretical post load (dead load plus live load) will be increased or decreased by the post reaction created by the overturning moment, or the vertical component of the resisting couple acting through the post.

Unloaded Condition: Initial post load = 5 kips
Assumed horizontal load = 2 kips
Overturning about the bottom of the right leg

Loaded Condition: Initial post load = 50 kips
Assumed horizontal load = 2 kips
Overturning about the bottom of the right leg

$$\text{Vertical component due to overturning} = \frac{2 \text{ kip (20 ft)}}{10 \text{ ft}} = 4 \text{ kip}$$

In the bent shown the post design load is 54 kips.

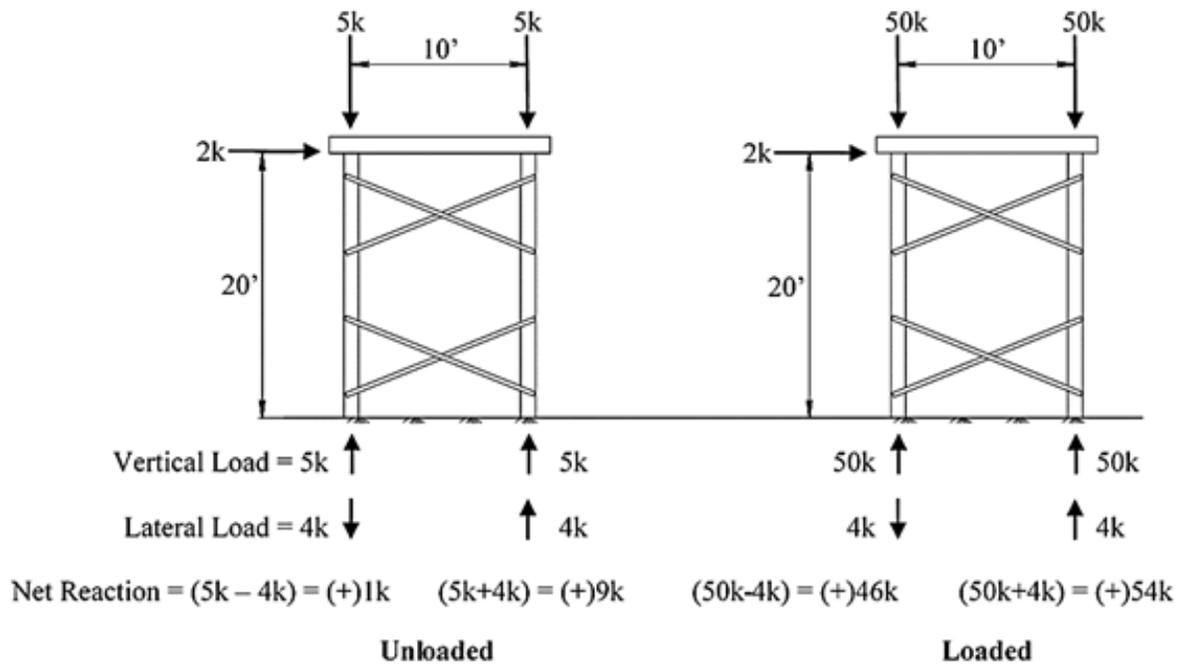


Figure D-9-1. Falsework Reactions

In a stable bent with more than two falsework posts, the post reactions are proportional to their distances from the center of rotation and may be obtained by algebraic summation.