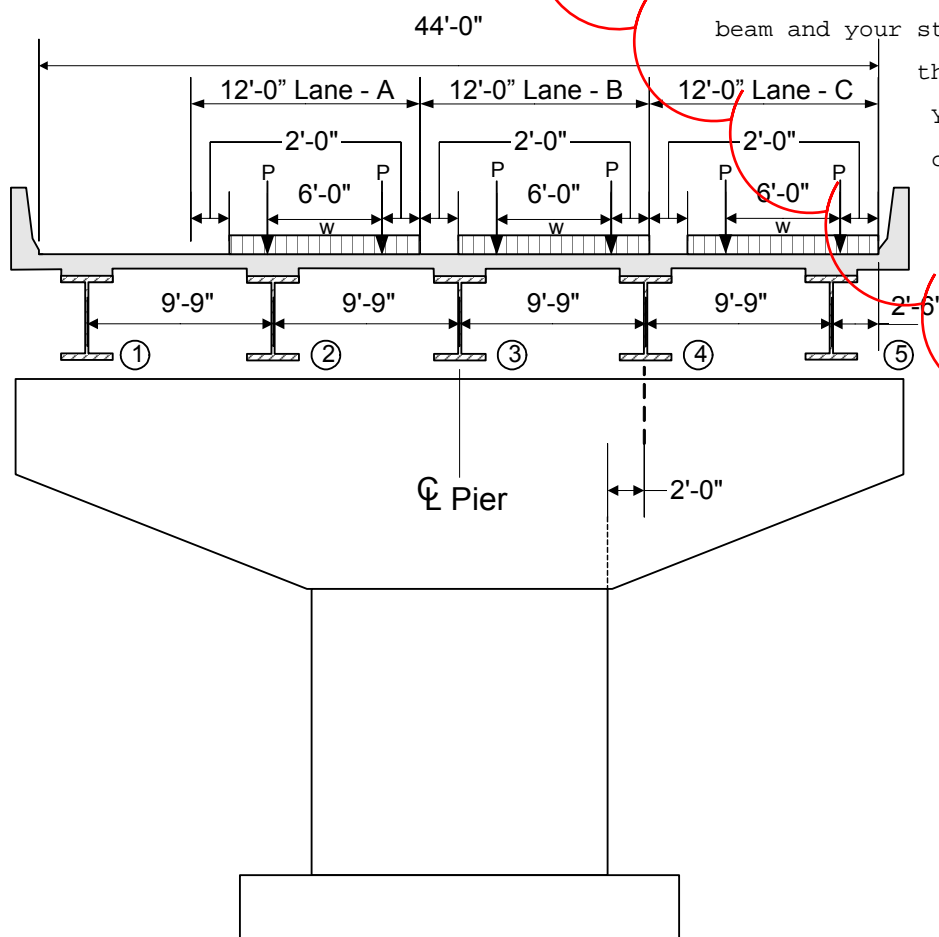


### Design Step 8.5 - Compute Live Load Effects

For the pier in this design example, the maximum live load effects in the pier cap, column and footing are based on either one, two or three lanes loaded (whichever results in the worst force effect). Figure 8-4 illustrates the lane positions when three lanes are loaded.

The positioning shown in Figure 8-4 is arrived at by first determining the number of design lanes, which is the integer part of the ratio of the clear roadway width divided by 12 feet per lane. Then the lane loading, which occupies ten feet of the lane, and the HL-93 truck loading, which has a six-foot wheel spacing and a two-foot clearance to the edge of the lane, are positioned within each lane to maximize the force effects in each of the respective pier components.



Place wheel loads or uniform loads on your cross-section. Assuming the deck is a continuous beam and your stringers are supports, calculate the reactions.

You'll need to do several combinations to determine maximum reactions on to the pier cap

**Figure 8-4 Pier Live Loading**