

Figure 4.3. The simplified cross section of the West Bound bridge superstructure. Girder-to-girder spacing = 112 in. This figure was not drawn to scale.

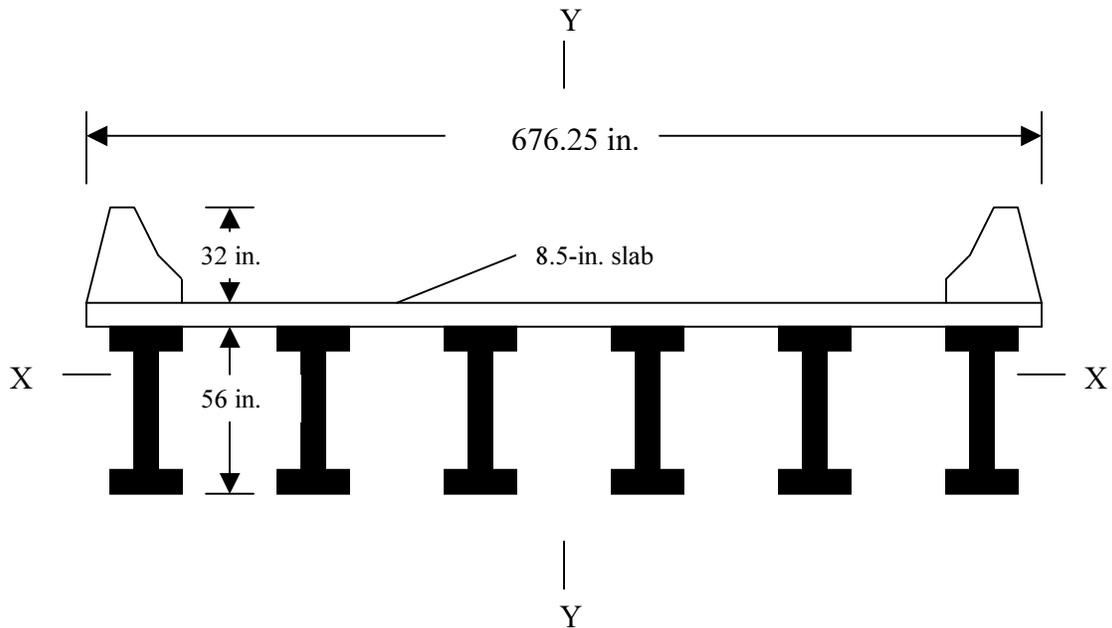


Figure 4.4. The simplified cross section of the East Bound bridge superstructure. Girder-to-girder spacing = 119 in. This figure was not drawn to scale.

4.5. RISA 3D Model of the Bridges

Both the West Bound and East Bound bridges have two spans. The West Bound bridge spans are 99 ft. and 96 ft.-4 in. long, while the East Bound bridge spans are 99 ft.-3 in. and 96 ft.-9 in. long. Both bridges have a skew of approximately 37 degrees. The pier consists of a pier cap beam and five columns. The West Bound and East Bound pier elevations are shown in Figures 4.5 and 4.6, respectively. The RISA 3D model of both bridges is shown in Figure 4.7.

As mentioned in section 4.2, for each bridge a rigid link was used to connect the superstructure and the pier cap beam. The end supports of the superstructure were modeled as fixed supports, because the type of supports used at the abutments are fixed supports, which is shown in Figure 4.8. The bridges were modeled continuously at the midpoint of the superstructure, where the two spans met, because the girder elevations showed that the girders were made continuous from abutment to abutment with permissible field splices 1 and 2 for the West Bound bridge, and permissible field splices 3 and 4 for the East Bound bridge. This is illustrated in Figure 4.9.

The site class of the soil underneath the bridges was determined earlier to be class B, and spread footings were used for the foundation of this bridge. Therefore according to Table 3.1 of this report, which was taken from Table 5.3.4-1 of the new LRFD Guidelines, the support at the bottom of the columns had to be rigid (fixed).

The joint coordinates of the bridge model were calculated according to the locations of the column center lines, pier cap beam centroidal axis and superstructure centroidal axis. The joint coordinates of the bridge are provided in Appendix XIV.

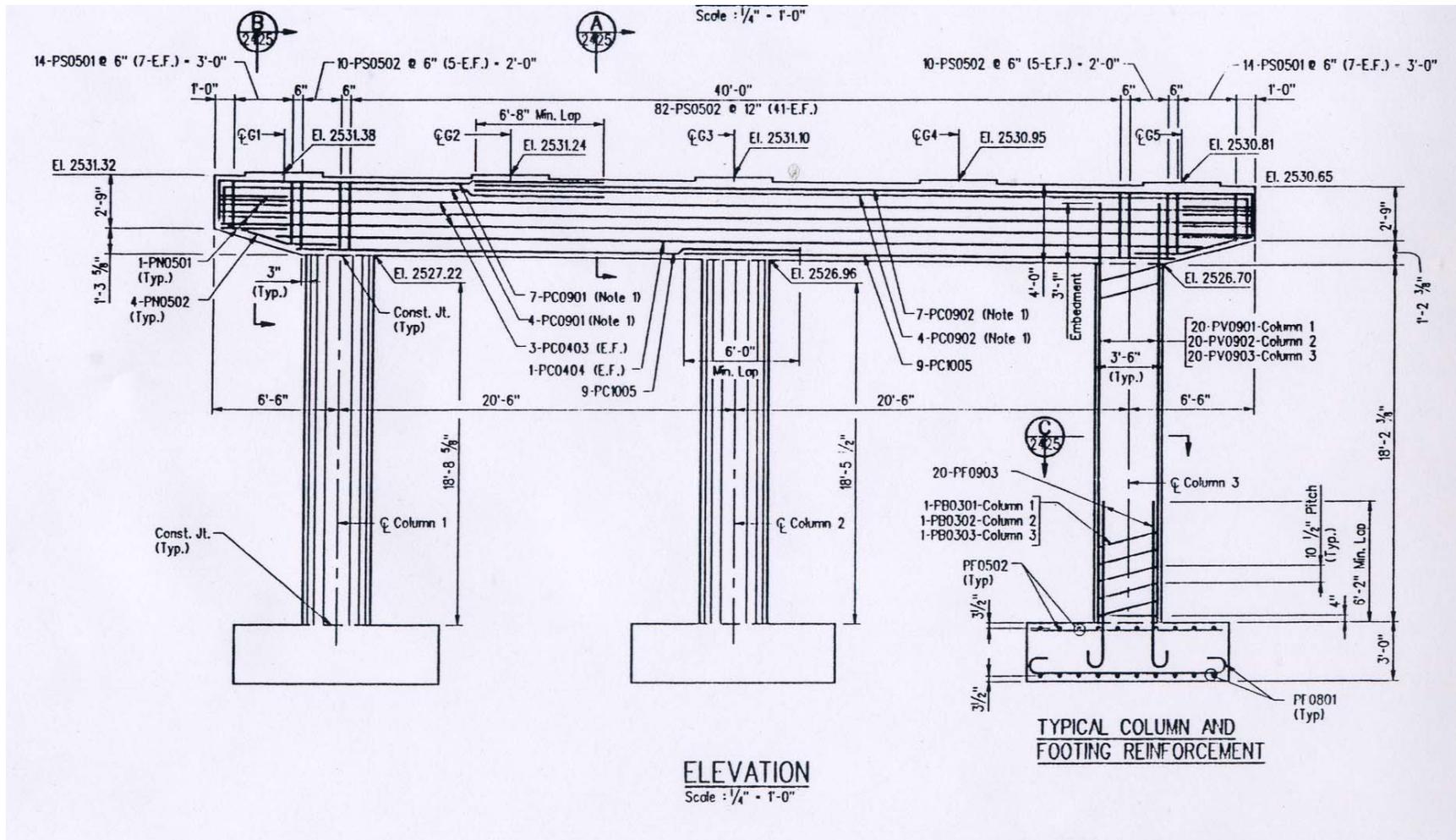


Figure 4.5. The West Bound Pier Elevation [Brown, 1993].