

## **SPLICED I-GIRDERS FACILITATE FAST CONSTRUCTION WHILE MAINTAINING EXISTING STREET TRAFFIC**

**Donald Weiss, PE**, Tpac, A Division of Kiewit Western Company

**Dan Heller, P.E.**, T. Y. Lin International

### **ABSTRACT**

*The City of Phoenix and ADOT required an overpass bridge to eliminate some of the crossing traffic at an existing six points intersection and adjacent railroad crossing. Use of concrete was the preferred material for the structure. The design team chose precast-prestressed girders to eliminate shoring, which would have disrupted roadway and railroad traffic. The design incorporated the first AASHTO type VI super girders post-tensioned in Arizona.*

*The railroad and Grand Ave, running at 45 degrees to the major city streets, created a six-point intersection. A bridge length of 354 feet was required to span the divided six lane roadway and parallel railroad. The bridge was oriented at 45 degrees to the roadway and the railroad to carry the north-south city street traffic. The geometry limited the bridge to two spans. The center pier was located between the divided lanes of Grand Ave.*

*To accomplish the 177-foot clear spans, two 142-foot AASHTO type VI super girders spliced to a 70-foot girder that cantilevered 35 foot in both directions from the center pier. Temporary hangers and/or shore towers at the end of the cantilever girders supported the drop-in girders until completion of the girder erection and post-tensioning.*

*This creative design solution allowed the erection of the girders with minimal disruption of roadway and railroad traffic.*

**Keywords:** *AASHTO type VI, Super girders, Precast,-Prestressed, Post-tensioned, Cantilever, Drop-in.*