

## ABC Project Highlights

Project Name:	Pioneer Crossing; Lehi
Project #/PIN #:	S-R399(42) / 6697
Year Constructed:	2009
ABC Element(s):	Half Depth Deck Panels / Precast Superstructure
Placement Method:	Self Propelled Modular Transport (SPMT's)
Contracting Method:	Design-Build

Project Description: The project team for the Pioneer Crossing Design-Build Project includes the Utah Department of Transportation as the owner, Kiewit/Clyde (a joint venture of Kiewit Western Co. and W.W. Clyde & Co.) as the contractor, and Parsons as the lead designer. Pioneer Crossing includes six miles of a new east-west connector from American Fork Main Street through Lehi to Redwood Road in Saratoga Springs. Project features include a new Diverging Diamond Interchange, a new 60-in. waterline for the Central Utah Water Conservancy District, a 5- to 7-lane urban arterial with PCCP pavement, new bridges over the Jordan River and Union Pacific Railroad, new concrete box culverts at the Dry Creek and Lehi Trail crossing, noise walls, retaining walls, aesthetics/landscaping, drainage, utility relocations, ATMS, and traffic signal work. The innovative Diverging Diamond Interchange (DDI) bridge at I-15 replaces the existing diamond interchange and includes new ramps and I-15 widening. The DDI, which includes twin, two-span prestressed concrete girder structures replacing an existing four-span structure over I-15, is a unique innovation in transportation design. The four individual spans have a maximum length of 190 feet and weigh approximately 2,300 tons each.

Pioneer Crossing serves a significantly growing community within the cities of American Fork, Lehi and Saratoga Springs. The jewel of this new connector is its interchange with I-15, which is the third diverging diamond interchange (DDI) in the U.S., but the first to be a new fully constructed interchange. The Pioneer Crossing interchange was originally conceived by the Utah Department of Transportation (UDOT) as a single point urban interchange, or SPUI. The DDI concept was developed by the Kiewit/Clyde team as a solution that would increase capacity and enhance safety at the interchange by eliminating signalized left-turning movements at the interchange ramp access points. The DDI also allowed the interchange to be placed on a skew which resulted in reduced right-of-way and fill heights. Traffic signals were also streamlined to provide for more efficient traffic flow. Overall, the DDI solution provided the owner with a nearly \$20 million cost savings over the SPUI option.

Pioneer Crossing and the DDI are the "gateway" to American Fork City. A plan was developed for the project that provided aesthetic features that would enhance the gateway feel of the interchange and corridor. Landscaping was provided at the interchange and along the arterial to enhance the natural and built environment. Decorative retaining walls and monuments were incorporated into the DDI to provide the gateway look that American Fork City requested. In addition, leaders from the growing community of Saratoga Springs requested and assisted in paying for aesthetic enhancements on the western end of Pioneer Crossing as a way to enhance the look and feel of the area. These special betterments showcase the community and serve as a meaningful entry point for residents and those

traveling through. Overall, the project is a functional and aesthetically pleasing project that will be an asset to the surrounding communities and the traveling public for years to come.





