CONCRETE BRIDGES
for Grand Junction, Colorado by Trent Prall, Grand Junction, Colo.

The $110-million Riverside Parkway project (shown here during the 2008 Grand Opening) required three bridges at the U.S. Highway 50 crossing. Two carry the parkway over the Union Pacific Railroad tracks and the third bridge connects the on/off ramps to U.S. Highway 50. All photos: Grand Junction, Colo.

Girders for the 29 Road Bridge were placed at night to limit disruption to daytime traffic on I-70B.

Construction on the D Road Bridge over the Redlands Water and Power Canal took place during the winter to prevent interruption to irrigation water. Prestressed concrete girders were used on this bridge as well.

Grand Junction, Colo., is a city of 58,000 people located on the western slope of the Continental Divide, 25 miles east of the Utah state line, at the junction of the Colorado and Gunnison Rivers. There are several large drainages that are subject to occasional flash floods, four major canal systems providing water to farmers and ranchers, and the Union Pacific railroad tracks running throughout the valley. All of these physical barriers require multiple crossings to connect adjacent communities.

The Public Works Department maintains 38 major bridge structures with spans greater than 20 ft and over 68 minor structures with spans less than 20 ft throughout the city. Major structures include 700-ft-long spans of the Colorado River.

Funding for the city's capital improvement program comes primarily from a 0.75% sales tax approved in the late 1980s that generates about $12 million annually. Many of the capital dollars in the late 1990s and 2000s were invested in transportation network improvements. Major development of the southern and eastern legs of the Riverside Parkway beltway around the city included four bridge structures that were completed with precast, prestressed concrete girders.

Three of these structures use the Colorado BT54 precast, prestressed concrete girder. Two structures cross over railroad tracks and have three spans each with span lengths varying from 67 to 90 ft. The third bridge is over U.S. Highway 50 and has two spans with lengths of 70 and 94 ft.

The fourth bridge is the 25 Road Bridge over the Union Pacific Railroad (UPRR). It is a five-span concrete bridge with a total length of 595 ft. The shortest span is 97 ft and the longest is 141 ft. This bridge utilizes Colorado BT72 precast, prestressed concrete girders.

The 29 Road/I-70B interchange and overpass over Union Pacific Railroad (UPRR) was completed in 2011 for $34.0 million and was jointly funded between the city of Grand Junction and Mesa County. Three spans (135, 138, and 157 ft) over the UPRR right-of-way were designed as precast, pretensioned and post-tensioned spliced girders. For more details, see *ASPIRE*™ Spring 2012.

In 2009, the city of Grand Junction and Mesa County reconstructed the Monument Road Bridge, a 50-ft crossing of Redlands Water and Power Canal. The following year, the city replaced the D Road Bridge, a 60-ft span crossing of No Thoroughfare Wash. Both of these concrete bridges utilized 20-in.-deep precast, prestressed concrete, side-by-side, slab beams topped with a 6-in.-thick cast-in-place concrete deck slab.

The use of precast concrete girders benefit the city because no falsework is required and given the restrictive construction windows associated with working over the canals, they are the perfect solution. Construction needs to be completed during the fall and winter season, when water is drained from the canals, and completed before spring irrigation when water is needed.

Most of the structures utilized precast concrete deck panels, also speeding construction schedules. The city also seals all of its new structures with a thin, bonded, epoxy overlay to improve skid resistance and seal the concrete surfaces. Ⓐ

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The Riverside Parkway project also included a prestressed concrete bridge over the Union Pacific Railroad at 25 Road.