Sunset Street Bridge

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Demolition

Demolition started with the bridge deck – one by one the girders were broken near the pier with the hammer, dropped to the ground and dragged to the roadway surface for processing.

Flatiron Constructors took on the demolition of the existing Sunset St Bridge right away. For the demolition they utilized a pair of Volvo EC480 excavators equipped with specialized attachments – one with a 12,000# hydraulic hammer, the other with a processor (or commonly referred to as a "muncher") capable of exerting over 100,000# of pressure to crush the concrete into small pieces. The entirety of the bridge was removed within just a few days.

Nearly all of the bridge demolition debris will be recycled – the steel going to Rocky Mountain Recycling, and the concrete rubble will eventually be further processed into material suitable for roadway construction.

Substructure Construction

Crew members place concrete around the north abutment. The substructure of a bridge typically consists of the abutments (the support where the roadway and the bridge meet) and the piers (which support the bridge deck). The new bridge abutments are anchored into the bedrock. First, a truck mounted drill rig augers a 24" diameter shaft into the earth approximately 20' deep, 8' of which is in solid bedrock. A length of H-piling is lowered into the hole and concrete is placed and consolidated around the piling.

Crew members place concrete at columns. The teal "L-bars" coming out of the top of the columns will be connected to the steel reinforcements of the pier cap on the underside of the bridge. This will allow for continuous reinforcement between these two structural components.

The piling for the new north abutment and the caissons to support the new piers are complete. Flatiron Constructors' crews have begun forming up the pier columns, which are essentially an extension of the caissons above ground and will eventually support the bridge deck.

Abutments and Piers

Each pier consists of three 36" diameter columns that are approximately 15' in height. Each of these columns is supported by a 42" diameter caisson. The columns are then topped off with what is referred to as the pier cap. For this bridge specifically, the pier caps are extra wide to support additional aesthetic features being incorporated by the City – architectural monuments with a sandstone veneer.

Access ramp and formwork system to construct the pier-cap. The abutment and pier caps will eventually support the bridge girders, which are essentially the "skeleton" of the bridge superstructure, as they will support the concrete bridge deck, sidewalks and bridge rails.

Looking south from the new north abutment at the two completed in-river piers. Soon the superstructure of the bridge will be placed across the top of these substructures and the bridge will really start to come together.

Girders

The 2nd girder being set for the new north span.

Looking toward the north down the new bridge. Take note of the epoxy coated reinforcing "loops" which will eventually be bent down over the deck reinforcement.

View from the southwest side of the new bridge structure, looking northeast. All of the girders have been set. Overhang formwork and handrails installed which allow safe access for crew members and equipment needed to work on the installation.