Snake River Corridor Enhancement
Lewiston, Idaho

Traffic along Snake River Avenue, in Lewiston, Idaho, is consistently heavy. For the nearly 60,000 valley residents, the avenue serves as a main traffic artery running alongside a popular recreation location, The Snake River National Trail. In 2011, the City of Lewiston decided it was time to make enhancements to pedestrian paths, improving safety for all types of traffic along Snake River Avenue. A new walking path would allow pedestrian traffic to access trails on both sides of Snake Avenue, via an underpass.

The crew from Western Construction and Excavation, Inc. needed to construct a tunnel that, in addition to providing a safe crossing point for pedestrians, would also be strong enough to support the road and its heavy traffic load. A 15'-9" x 15'-1" MULTI-PLATE® tunnel, 59'-4" in length, and 2,500 square feet of Keystone Compac II were the products selected to handle the job. Led by company president, Case Stedam, the installation crew worked quickly, building a temporary road to divert traffic off of Snake Avenue. With traffic diverted, the crew could safely focus on the underpass. "We open cut the road," explains Stedam. "The project ended up being more complex than we expected. We ran into unexpected rock that required additional excavation." The unexpected rock also impacted how the project was built. "Had we not run into the rock, we would have built both walls at the same time, one crew on each end of the underpass, backfilling as we went. But, because of the rock, we could only build one wall at a time."

Significant grade changes presented challenges before the retaining walls could be installed. In addition to a head wall on each end of the underpass, wing walls, extending off the head walls at a 45 degree angle were needed. A concrete foundation was poured to create a stable base for both the headwalls and the wing walls. "The concrete foundation offered the best solution because we could guarantee a level base. Had we used a gravel pad, with everything taking place on site, the whole wall would have been off," explained Stedam. The wing walls presented another challenge as grade changes required the foundations for these walls to be stepped-up the grade.

Due to wall heights and side pressure placed upon the walls, thick geogrid was installed every other course. However, the thickness of the grid, while ensuring structural stability, ended up creating aesthetic problems that needed to be remedied. "We used extra grid to create shims to make sure the wall looked nice as it came together," explained Stedam. Grid placement was extremely important as guard rails were installed along the avenue after the underpass was completed. As grid was laid, holes were cut to allow posts for the guard rails to be driven straight into the ground. If holes were not cut in the right locations, posts would have been driven into the grid pulling at it, critically compromising the wall's stability.

As the height of the wall increased, the crew used crusher tailings, described by Stedam as very fine dirt and particles of rock mixed together, as backfill. "It's excellent backfill because it really allows for compaction. Using this type of fill in conjunction with the wall and multi-plate worked out great," he said.

It took the installation crew just two weeks to complete the project. Today, the underpass provides pedestrians along the Snake River National Recreation Trail an uninterrupted, safe and easy passage from one side of Snake River Avenue to the other.

Owner: City of Lewiston

Engineer: Alannah Baily

Contractor: Western Construction and Excavation, Inc.

Keystone Producer: Amcor Masonry Products

Technical Description:

- Keystone Compac® II - Straight split
- Total Wall Area: 2,500 sq.ft.
- Contech Product: MULTI-PLATE®
- Tunnel Length: 59' - 4"

Installation: 2011