



## TH 23 Underpass Project in Marshall, Minnesota

In 2010, the 14.5-mile section of Trunk Highway 23 between Russell, Minnesota and the north city limits of Marshall was scheduled for a major pavement rehabilitation project. With the proposed work on Highway 23, the City of Marshall recognized an opportunity to construct a pedestrian underpass in the area of the Southwest Minnesota State and high school campuses to provide for the safe movement of pedestrians and bicyclists across TH 23 in this location. The pedestrian underpass structure is a 14-foot wide by 10-foot high precast concrete box culvert that extends approximately 290 feet and passes under both TH 23 and State Street. The elevation established for the underpass required raising the profile grade of TH 23 and State Street by over 4 feet. A storm water lift station was required to provide an outlet for surface and subsurface drainage. A system of precast concrete retaining wall blocks was used to construct headwalls and the terraced retaining walls adjacent to the trails approaching the underpass. Landscaping was installed on the retaining wall terraces to further enhance the aesthetics. Interior underpass lighting and decorative exterior lighting along the trail systems leading into the underpass were included in the project to enhance safety.

The City's underpass project was ultimately combined with Mn/DOT's TH 23 pavement replacement project for bidding and construction. At the time the City decided to proceed with the underpass project, Mn/DOT was nearly 80% complete with the design of the TH 23 pavement replacement project. Mn/DOT's project had an established schedule that could not be delayed without jeopardizing Mn/DOT project funding. As a result, the design team had to complete the project development and design process under an extremely accelerated schedule. Since the project impacted the SMSU campus and also involved the raising of the TH 23 highway grade, significant cooperation, prompt review and, at times, compromise, was required from all project stakeholders to keep the process progressing and on schedule. This project is an excellent example of the positive results that can be achieved through the cooperation of multiple public entities and a private owner/developer.

