

Actopan Underpass

Actopan, Hidalgo

PROBLEM

Traffic jams and long commutes left the people of Actopan, Hidalgo looking for a long-term solution to an increasing transportation issue. In October 2008, contractors and engineers began working on their new project; Distribuidor Vial Miguel Hidalgo, more commonly known as the Actopan Underpass Way or Paso a desnivel Actopan. The project was met with instant challenges creating the need for an innovative and well engineered solution. One of the first issues to arise during planning was determining what type of material would provide the greatest benefit to the people who commute on this road. After research and much consideration, the contractors decided to use steel instead of traditional concrete or secant piles. This decision would allow for faster execution and would be less disturbing to traffic and the community. Upon testing at the project site, a very hard mixture of sandy silt and gravel was discovered, which meant contractors and engineers were going to be dealing with difficult soil conditions. Soil tests utilizing the Standard Penetration Test required more than 50 blows; therefore, pre-drilling was deemed necessary to break through the rough terrain.

SOLUTION

In order to ensure the stability of both the underpass and the road above, Nucor Skyline's experts were called in to provide engineering support. Experts helped design the retention system by creating an anchorage system. Drawings of sheet pile installation and technical specifications were provided. The combined expertise of the contractors and engineers ensured the road above would be



able to handle heightened environmental and traffic stressors.

Construction of Actopan Underpass Way wrapped up in March of 2009. Materials for this project included Z-Box piles, which were made on site from pairs of Z-shaped sheet piles. The completion of this job resulted in the people of Actopan finding their long-term solution. No longer are commuters forced to share their busy commute on a common street, but are now able to utilize their new underpass. This project has helped reduce transportation time into and out of Actopan, Hidalgo, Mexico.

PROJECT PARTNERS

Owner

Public Works of Hidalgo State

Engineer

Dirección General de Estudios y Proyectos SOPCTYA;
Hidalgo State's Government

Contractor

EXPROMAT, S.A. DE C.V.

Sub-Contractor

Gandara Bienes de Capital, S.A. de C.V.

PRODUCTS

Z-Double Piles S 390 GP
Z-Box Piles S 390 GP
1,300 MT