



Design / Build Services for Rehabilitation of Yonkers Station Retaining Wall

GeoDesign Inc. is providing construction engineering services to the contractor on a design/build contract with Metro North Commuter Railroad for rehabilitating and strengthening the Yonkers Station East Retaining Wall. This wall is part of an overall contract by Metro North to reconstruct and modernize the Yonkers Railroad Station and nine other stations along the Hudson Division in the Bronx and Yonkers, New York.

The existing concrete gravity wall, constructed in 1910, is located along the east side of the Metro North tracks and retains an existing slope containing private houses, a church and public park. Over the past several decades, many of the property owners constructed private walls immediately behind the existing concrete wall. Several of these private walls were not built in accordance with the City of Yonkers Building Code requirements and are in various states of disrepair. On occasion, portions of these private walls have collapsed onto the tracks damaging trains and causing major disruptions to rail service.

Construction Cost:
\$3.4 million

Completion Date:
2003

Reference:
MTA Metro-North Railroad
Mari Miceli
(212) 499-4477

Scope of Services:
Design/Build Services
Construction Support Services

GeoDesign worked with the contractor to optimize design of a permanent anchored soldier pile and precast concrete lagging retaining wall to be constructed through and on top of the existing concrete wall to reinforce the private walls and protect Metro North's tracks. The steel soldier piles are installed in 24 inch diameter holes cored through the existing concrete wall at typically 10 to 12ft spacing and backfilled with concrete. Precast concrete lagging panels are installed between the soldier piles up to the tops of the existing private walls and are backfilled with pea gravel. Permanent earth tieback anchors are then drilled and installed through the lagging panels and private walls into the existing slope. Each permanent anchor is proof tested to 140 percent of design load prior to being locked off. The exposed face of the existing concrete wall will be repaired and shotcreted to provide a uniform finish.



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