

# RECO NEWS

VOLUME 8: ISSUE 2

The Reinforced Earth Company



## Snider Diamond Grade Separation Toronto, Ontario

As part of an expansion program in Greater Toronto, GO Transit has constructed a new bridge and approach embankments at the Snider Diamond intersection in Vaughan to grade separate two rail lines. GO Transit (Government of Ontario provincial transit authority) set out an ambitious construction schedule for the project. Substantial completion was required within 12 months of the start of construction. GO and CN (Canadian National Railway) operations had to be maintained at normal levels without any disruption during construction. The project was designed and tendered in 2005, and substantially constructed in 2006.

By constructing the new approach embankments and a 34 metre single span bridge immediately adjacent to the existing active rail line, the logistics and cost of a detour were avoided. Construction of the new approach embankments and bridge was carried out without significant disruption to the existing commuter rail services (GO & VIA) on the Bradford line. The approach embankments were approximately 13 metres wide, sufficient for two tracks. The maximum height for the retaining walls containing the approach embankments was 10.5 metres

and they were to be designed for the specified Cooper E90 loading.

Due to the significant loading condition, approximately 60% more soil reinforcement was incorporated into the Reinforced Earth® walls compared to a typical highway retaining structure. A series of sacrificial test strips, for assessing the condition of the soil reinforcement throughout the service life of the project, were incorporated into the project design and supply package. In order to minimize the noise and visual impact on an adjacent residential area, the wall panels in one quadrant were enhanced with an architectural feature and the retaining wall was topped by a noise barrier.

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# Route 22/322 Lewistown Narrows Project, Mifflin County, Pennsylvania



The Route 22/322 Lewistown Narrows Improvement Project, Section A09 in Mifflin County Pennsylvania is the second largest single project ever awarded by the Pennsylvania Department of Transportation. The recently completed project was awarded to Walsh Construction Company, Chicago in 2004 at a cost to PENNDOT of \$110-million. The 22/322 corridor is a vital and heavily traveled link between Harrisburg, the state's capital, and State College, home of Pennsylvania State University.

An estimated 20,000 vehicles per day travel through the "Narrows". The obsolete two-lane roadway was once labelled as one of the most dangerous stretches of highway in the U.S., infa-

## Snider Diamond Grade Separation

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Connection to the existing rail line was achieved by means of staged construction at the south limit and a simple track tie-in arrangement at the north limit. Approximately 10,000 m<sup>2</sup> of Reinforced



Earth walls were designed, fabricated and supplied between May and December 2006. The new approach embankments and bridge structure went into service on December 4, 2006. The final portion of the permanent walls was constructed in April 2007 and the permanent rail alignment was put into service in May 2007.



mous for bottlenecks and frequent accidents. The roadway now boasts a modernized four-lane highway with improved access for local residences as well as long-distance travelers and truckers passing through the corridor. Also included are new amenities including trails, overlooks, a visitor's center, and fishing/boating access points.

For the design engineers, the challenge was to arrive at a solution to fit two new westbound lanes between the neighboring Juniata River and the foot and talus slope of Shade Mountain. The solution: construct a massive Reinforced Earth® wall to elevate the new westbound lanes. The result: the longest single MSE retaining wall ever constructed in the U.S., and second only in length to one other in the world (the longest is located in Reunion Island, France, 6.8 miles long). The large "Narrows Wall" is one of six RECo walls constructed along this corridor.



The massive "Narrows" wall is 13,200 linear feet (2.5 miles) in length with a maximum height of 30-feet. The wall's total surface area is 239,975 square feet and comprises 4,750 facing panels, 41,000 soil reinforcing strips, and over 300,000 cubic yards of structure backfill. The top of the wall is finished with RECo's precast concrete "half-connector" traffic barrier staging unit, comprising 914 precast elements.

The precast operation for this massive project was carried out at two separate locations: KJ Williams Precast, Cresaptown, MD, and Concrete Safety Systems, Bethel, PA. At the peak of production, nearly fifty facing units per day were being produced using RECo's 5-ft by 10-ft Reinforced Earth facing panel moulds.

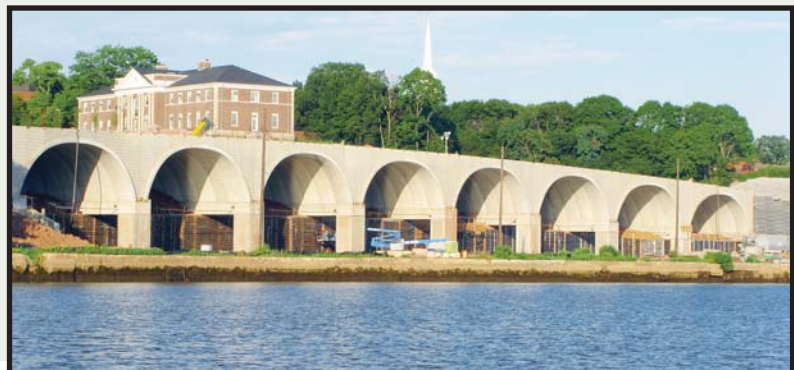
## RECo, Performing at a "Record" Pace



Since the companies' beginnings, RECo has repeatedly been recognized for furnishing designs and materials for many record-setting applications worldwide. Lately for instance, at the Sea-Tac International Airport in Seattle, the 135-foot tall RECo wall supporting the embankment for the New Third Runway Project is the tallest MSE structure in the Western Hemisphere. After more than fifteen years in design and construction, the Third Runway is expected to be operational in the Fall of 2008.

In New Brunswick, New Jersey, the largest TechSpan precast arch bridge is currently under construction. Comprising eight arch barrels, each having a 66-foot span, the George Street Bridge is the centerpiece of the \$140-million NJ Rte. 18 New Brunswick Improvement Project and is the largest of all of the new structures along this corridor, slated for completion in the Fall of 2008.

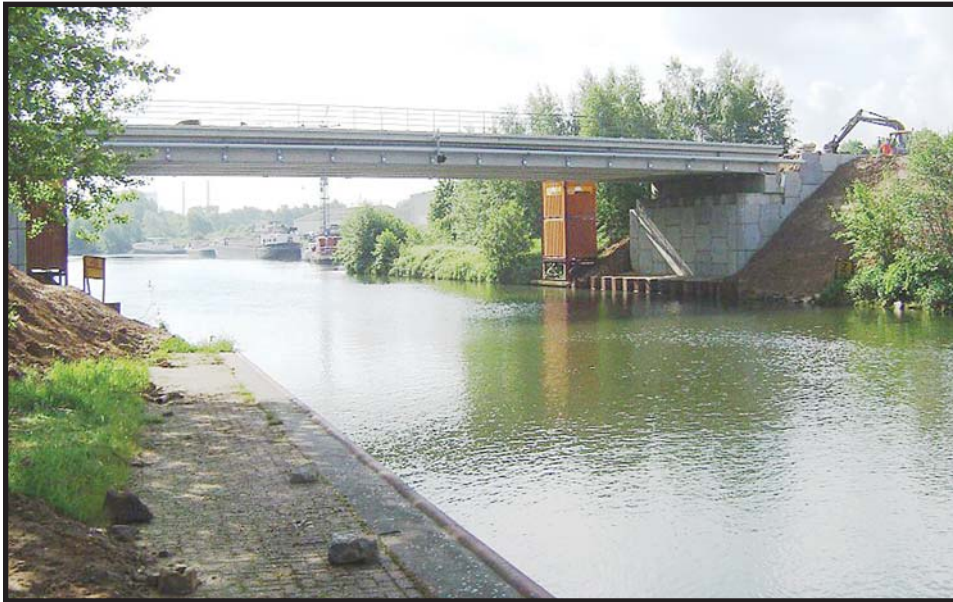
Watch for more information on these and other record-setting projects in future issues of RECo News.





## International Corner

# Rapid Bridge Replacement



In the Netherlands, a bridge replacement project was carried out in 2005 using pre-fabricated components for all of the new bridge structure. The project is located in the village of Panheel near Eindhoven (approximately 200 km from Amsterdam).

Terre Armée b.v., the local Reinforced Earth subsidiary, designed and supplied the 500 m<sup>2</sup> true bridge abutment. The bridge superstructure is directly supported on the Reinforced Earth walls.

The use of pre-manufactured components significantly reduced the disruption to this thoroughfare. Construction started at the end of March and was completed in mid-May (~2 months). All pre-manufactured components were produced off-site and brought to the project location just-in-time for installation. Reinforced Earth walls are an ideal choice for this construction methodology as all components are easily transported and handled on the project site.

### Announcing the opening of RECo USA Southeast Regional full-service precasting facility:

Reinforced Earth Newnan, Georgia Plant  
1245 HIGHWAY 16 EAST, NEWNAN, GA 30263  
For assistance contact the RECo Atlanta office.

### Announcing the opening of RECo USA new Denver area office:

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Englewood, CO 80122  
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Serving: Alaska, Colorado, Kansas, Nebraska,  
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