



A Call for Innovation in the City of Carmel, Indiana Reco delivers a host of best-value solutions

An ambitious transportation plan devised by the City of Carmel, a growing city located north of the Indianapolis City Center involves major reconstruction along a populous and sensitive route, namely Keystone Avenue, the now renamed State Route 431.

Four newly reconfigured, and reconstructed interchanges along Keystone Avenue are near completion. The objective of the City and their consultant, American Structurepoint, Indianapolis is to employ an attractive roadway design that increases mobility and safety for roadway travelers as well as pedestrians, while minimizing encroachment and right-of-way effects to hundreds of local residents and businesses during its construction.

The City's early conception of a state-of-the-art arterial mobility plan is now a reality. Having awarded construction contracts to four major road-building contractors (Milestone Contractors, Reith Riley Construction, Beatty Construction, and Walsh Construction), the city of Carmel can now flaunt one of the country's most innovative and technically-celebrated problem-approach solutions. Reinforced Earth[®] solutions were chosen by all four contractors to accomplish the need for depressing the old SR 431 (Keystone), and building innovative

"teardrop" interchange roundabouts at the four major intersections, 106th, 116th, 126th, and 136th Streets.

For RECO designers, the challenges were far-reaching. Expectations from the contractors and the City ranged from designing for extreme architectural requirements for the MSE walls as well as re-designs for several H-pile post/panel/lagging walls as were originally designed for. In as far as the architectural demands, the majority of the walls called for up to five distinct treatment elements, including intricate transitions between smooth surfaces and faux stone formliner finishes. An added challenge for RECO was to design for an intermittently-positioned array of geometric emblems including raised and "tilted" circles and diamonds (see photo on page 3, top right).

City authorities allowed the contractors to propose innovative and

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RECo Reacts:

A Speedy Wall Repair Restores Rail Service

On January 16, 2009, a freight train operated by Burlington Northern / Santa Fe (BNSF) derailed in a depression south of Littleton, Colorado, severely damaging an existing MSE retaining wall. The freight tracks share a corridor with the Regional Transportation District (RTD) light rail system, and the damage to the MSE wall forced a suspension to the RTD service.

The Reinforced Earth Company (RECo) was contacted on January 17 to participate in the evaluation of the damaged MSE retaining wall and aid in developing plans to restore RTD service. RECo's local personnel were on-site that same day to coordinate a plan of action with Denver Transit Construction Group (DTCG), a joint venture between Herzog Contracting, St. Joseph, MO and Stacey Witbeck, Alameda, CA.

DTCG was, at the time of the derailment, under contract to construct the new West Corridor LRT line for RTD in the nearby city of Golden for which RECo is supplying more than 246,000 SF of retaining walls (see more on page 3). This existing relationship allowed for a quick solution to restore the RTD service: DTCG would dismantle the 400-ft long section of damaged MSE wall and reconstruct utilizing RECo designs and materials.

RECo completed the necessary drawings and calculations by January 20th. Replacement precast facing panels, soil reinforcements and acces-



Derailed, Jan 16

sories were obtained from the West Corridor project inventory.

DTCG work crews had deconstructed and excavated the MSE wall section by January 19th, and RECo's first material deliveries were made on January 20th when construction of the new wall section began. The entire wall section was completed within 10 days and RTD service was restored on February 2.

DTCG's Mr. John West, Project Manager, acknowledged that... "your (RECo's) effort on this project was extraordinary and I certainly appreciate all of your assistance in making this a successful effort."



Dismantled MSE Wall, Jan 19



Reconstruction underway, Jan 20

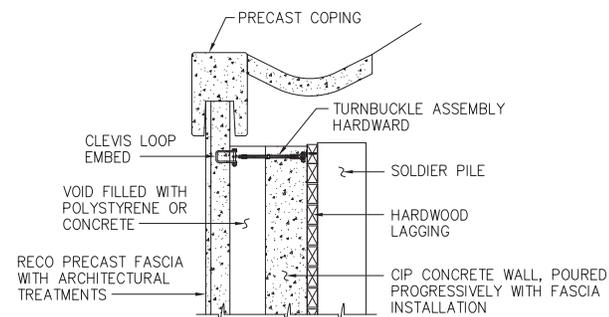
A Call for Innovation

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cost-effective design alternatives for the retaining walls. In several cases, the as-designed H-pile walls were redesigned to employ RECo's functional precast facing elements as fascia for the lagging walls. See the Soldier Pile-Lagging-Fascia Interface detail below.

So far, more than 230,000 square feet of Reinforced Earth® systems, and over 18,000 linear feet of precast concrete barrier/coping treatments have been designed for and have been supplied by RECo for installation by the contractors. As of August 5, 2009, all four of the new intersection roundabouts had been open to traffic and final completion of the 136th Street interchange is scheduled for Fall, 2009. For more information about the project visit the project website at www.carmellink.org.

Contact RECo for assistance on your next challenging project. Visit www.reinforcedearth.com, Email info@reinforcedearth.com, or call 1-800-446-5700.



SOLDIER PILE/LAGGING/FASCIA INTERFACE DETAIL

Participants:

Owner: The City of Carmel, Indiana

Contractor(s): Milestone Contractors, Indianapolis; Reith Riley Construction, Goshen, IN; Beatty Construction, Boggstown, IN; and Walsh Construction, Chicago

Prime Consultant: American Structurepoint, Indianapolis

Geotechnical Consultants: Earth Exploration, Inc., Indianapolis; and ATC Associates, Inc., Indianapolis

Precaster: Sanders Precast, Inc., Whitestone, IN

MSE Wall, Fascia: The Reinforced Earth Company, Aurora, IL

More Reinforced Earth Walls Underway for Denver's RTD System

Just prior to the BNSF derailment (aforementioned), RECo had been awarded a contract to design and furnish materials for over 60 individual MSE walls comprising approximately 246,000 square feet of Reinforced Earth® Wall systems. The West Corridor "FasTracks Project" is a 12-mile light rail transit (LRT) corridor that will link the Denver city center with nearby Golden. All of the walls directly support the LRT Track System and will have a unique architectural pattern designed for this particular corridor which passes through several neighborhoods and Parks and Recreation areas.

Slaton Bros., Centennial, CO, another Freyssinet subsidiary, will install approxi-

mately 30% of the retaining walls. Construction of the retaining walls is underway and is expected to continue through 2010. RECo's work is being carried out by the RECo USA Western Regional office in Englewood, Colorado.



Construction FasTracks

Participants:

Owner: Denver Regional Transportation District (RTD)

Prime Consultant: David Evans and Associates, Denver

Construction Manager/Prime

Contractor: Denver Transit Construction Group (DTCG), a joint venture of Stacey & Witbeck, Inc. (Alameda, CA) and Herzog Contracting (St. Joseph, MO)

Subcontractor (MSE Walls): Slaton Bros., Centennial, CO

Precasting: Pacheco Construction Products, Inc., Littleton, CO

MSE Design and Materials: The Reinforced Earth Company, Englewood, CO



Cuzco, Peru



REINFORCED EARTH®
SUSTAINABLE TECHNOLOGY

Engineers Without Borders: RECo's Commitment to Humanity

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John Sankey (second from left) with Peruvian villagers/workers

Engineers Without Borders USA (EWB) is a national organization with local chapters organized through several universities. The mission of EWB focuses on improving the lives of impoverished people facing an existence without

basic necessities such as clean drinking water, power, education, sanitation, among other challenges. Professionals with design and/or construction experience act as consultants and mentors to students and academia responsible for developing partnerships in order to implement humanitarian projects around the world.

Since 2002, RECo has furnished both human and financial support to EWB through charity sponsorships and by sending its own delegations to deprived townships needing aid. RECo participants have donated their support on a wide range of projects: from installing water chlorination and filtration systems in Peru and Ecuador, to laying foundations for a new Youth Center in Ethiopia.

To learn more about EWB-USA, visit their website at www.ewb-usa.org.



John Sankey, P.E., VP Engineering and former President of the local EWB chapter is presented with a charitable contribution to support EWB-USA

