ARES®
RETAINING WALL SYSTEMS

County Road 124 Overpass

Delaware County, Ohio

APPLICATION: The Ohio Department of Transportation (ODOT) wanted to bridge the heavily traveled County Road 124 over the existing CSX railway and was looking for an economical solution for the proposed retaining walls.

THE CHALLENGE: Tight budgets and limited backfill options presented challenges to the success of the project. Because the type of aggregate that is required for steel reinforcement was not locally available and would have to be hauled in from a further distance, additional transportation and material charges would be incurred.

A specified plain smooth form finish for the MSE retaining wall panels left little room for error caused by panel damage or misalignment.

SITE CONDITIONS: A tight site envelope was created since the overpass was being constructed directly adjacent to the existing road and in front of an active railroad. Also, close proximity of utilities associated with the CSX railroad required the contractor to alter the construction sequence.

ALTERNATIVE SOLUTIONS: While other MSE walls were considered for the job, Tensar offered the only MSE wall system with non-metallic soil reinforcing elements.

THE SOLUTION: The ARES Retaining Wall System was specified as an approved MSE wall solution, and was ultimately chosen by Trucco Construction Co. Inc. for use on the project. Many factors went into the decision to install the ARES walls, but the overwhelming advantage was the ability to use locally available backfill material with the extremely inert polymer geogrids, providing a cost savings for the overall project.

"By utilizing the Tensar ARES Retaining Wall System, we were able to take advantage of backfill material from a local source," said Randy King, vice president of Trucco Construction. "The ability to use this local material enabled us to be more competitive at bid time. We trucked in approximately 100,000 tons of granular backfill, which equated to around 5,000 loads," said King. "Given this quantity, utilizing less trucking was definitely a key component to the success of the project."

PROJECT HIGHLIGHTS

Project:
County Road 124 Overpass

Location:
Delaware County, Ohio

Installation:
Fall 2010

Product/System:
Tensar® UX Geogrid
ARES® Retaining Wall Systems

Quantity:
45,000 Sq ft of ARES Panel Walls

Owner/Developer:
Ohio Department of Transportation

Design Engineer:
American Consulting, Inc.

General Contractor:
Trucco Construction Co., Inc.

Materials Supplier:
Geogrid: Tensar International
Precast panels: United Precast

Two retaining walls were designed for the site totaling 45,000 square feet, with maximum heights reaching 40 feet and combined lengths of approximately 1,600 linear feet. Among the challenges for the project were double rows of tightly spaced piles supporting the bridge abutments, and specified plain smooth form finish for the panels. Smooth panels can be a challenge for any MSE retaining wall mainly because there is so little room for error aesthetically. The panels can be damaged easily, and the slightest misalignment, even if the wall remains within tolerance, is more visually apparent.

ARES Systems, utilizing Tensar Uniaxial Geogird reinforcement, can be used in a wide variety of backfill materials, including pH extremes, sulfates and where resistivity is an issue. This advantage allows for use of locally available materials to save on construction costs.

The onsite assistance provided by Tensar proved to be a valuable aspect in the installation process.

"A line item was set up in the proposal which enabled Tensar to send a technical representative, Jeremiah Riggio, to the site for five days," said King. "This created a team atmosphere in which Trucco Construction, along with ODOT, could work closely with Tensar to ensure that the walls were being constructed per the plan requirements, as well as the manufacturer's specifications. It resulted in a smooth process for all parties."

"Trucco's overall professionalism and attention to detail during every stage of construction was impressive," Riggio said, "and resulted in one of the best ARES installations I've seen."

ADDITIONAL INFORMATION AND SERVICES: Tensar International Corporation specializes in solutions for site development problems such as grade changes requiring retaining walls and poor soil conditions affecting the cost of roadways, parking lots and building structures. Our solutions use proprietary engineered systems and our own unique products, services and application technologies. Our products and technologies, backed by the most thorough quality assurance practices, are at the forefront of the industry. Highly adaptable, cost-effective and installation-friendly, they provide exceptional, long-term performance under the most demanding conditions. Our support services include site evaluation, design consulting and site construction assistance.

For innovative solutions to your engineering challenges, rely on the experience, resources and expertise that have set the industry standard for nearly three decades.

Double rows of tightly spaced piles support the abutments for the Delaware County Road 124 bridge over a CSX railway line.

For more information on ARES Systems or other Tensar Systems, call 800-TENSAR-1, email info@tensarcorp.com or visit www.tensarcorp.com

Distributed by:

Tensar®

Tensar International Corporation
2500 Northwinds Parkway
Suite 500
Alpharetta, GA 30009

ARES_CS_DELAWARE_11.12