



The barrier wall shields the residential neighborhood from the traffic noise of West Dodge Road in a natural earth color that fits the area.

LOCATION

90th and Dodge Barrier Wall
OMAHA, NEBRASKA

PRODUCT

Vertica® and Vertica Pro®
retaining wall systems

MANUFACTURER

Watkins Concrete Block Company, Inc.
Omaha, Nebraska

WALL DESIGN ENGINEER

HWS Consulting Group, Inc.
Omaha, Nebraska

GEOTECHNICAL ENGINEER

Thiele Geotech, Inc.
Omaha, Nebraska

WALL CONTRACTOR

Linhart Construction
Omaha, Nebraska

WALL AREA

23,025 square feet

THE CHALLENGE

When you add traffic lanes to the second-busiest intersection in Omaha, Nebraska, the mix of commercial and residential areas means there are safety, noise and aesthetic concerns. A combination of retaining walls for grade separation and a barrier wall were required to reduce sound and visual impact on the residential properties. Designers needed an aesthetically pleasing option that was in keeping with the neighborhood's character while being durable and economical. And they were asked to keep business interruption in the project zone to a minimum.

THE SOLUTION

Based on the product performance; natural, earthtone color; scale of blocks; durability; and projected time savings for installation, designers chose segmental retaining wall (SRW) blocks to construct the barrier wall and retaining walls. The geotechnical engineer chose the Vertica® and Vertica Pro® retaining wall systems to build the walls. By specifying an SRW system with a 4-degree batter, the civil engineer was able to design a unique sound and safety barrier wall that was integrated with the segmental retaining walls. The barrier design included Vertica® units, set back-to-back and tied together with geosynthetic reinforcement constructed atop an SRW built with Vertica Pro® blocks. For added strength, the geotechnical engineer specified rebar set in a concrete footing. The space between the units was filled with gravel, and a cast-in-place colored concrete cap was attached. Corner units provided an attractive finish.



The geotechnical engineer specified gravel fill rather than concrete for this barrier wall made of back-to-back modular units so that it could be more easily repaired in the event of an accident.

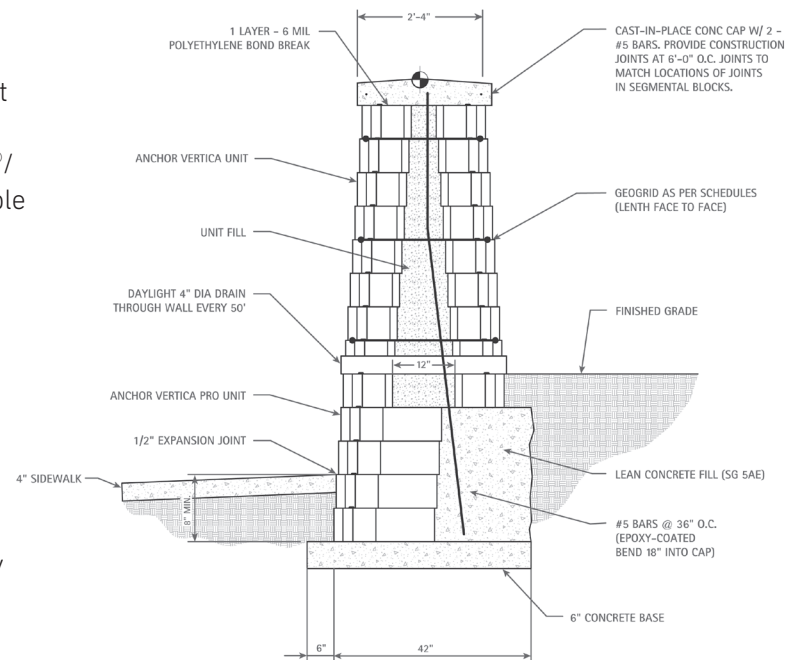


Vertica® retaining wall system blocks in the barrier wall were tied together with geogrid reinforcement.

By adding a band of slightly different colored block on portions of the retaining walls, the designer was able to meet neighborhood demands for a more aesthetically pleasing project. As for those business interruptions, using the Vertica®/Vertica Pro® blocks meant critical time savings. It was possible to complete a wall next to a bank drive-up lane over the weekend while the business was closed. An old wall went down Friday night, and the new wall went up on Saturday. According to the design engineer, a cast-in-place structure would have kept the lane closed for weeks, a situation that was unacceptable to the bank.

THE RESULT

This project was completed more quickly and cost effectively than a cast-in-place alternative, meeting the general contractor's construction incentive goal. In addition, this project has received the Engineering Excellence Award from the Nebraska Society of Professional Engineers, Eastern Chapter. In this case, the most aesthetically pleasing wall was also the most economical solution.



ANCHOR DIAMOND Group
 5909 Baker Rd. Suite 550
 Minnetonka, MN 55345

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 AD23-003 01/23