

CASE STUDY

Bear Canyon Soldier Pile Wall

Onalaska, Washington

HISTORY

Washington State Department of Transportation (WSDOT) is responsible for maintaining state highway Route 508 that runs between the small towns of Morton and Onalaska in Washington. The road winds through an area known as Bear Canyon and provides critical access for local residents and businesses. When a large portion of the hillside gave way due to heavy rains, this major thruway became impassible and WSDOT turned to Nucor Skyline's material capabilities to get local residents on the road again.

PROBLEM

Route 508 is a scenic stretch through beautiful woodlands and WSDOT wanted to be sure that this wall would be domestically produced, would be built to last, and would fit into its natural surroundings.

With a portion of this road considered unsafe for travel, WSDOT determined that earth stabilization was required to not only address the immediate issue, but to ensure that future failures would not occur. Geo-technical and structural engineers were challenged to meet those design parameters with a cost-effective, high-modulus solution that could be constructed on a fast-track schedule.

SOLUTION

Soldier beam and lagging walls are very common earth retention structures. They are a standard construction method with relatively low material and installation costs. The original beam design called for 12 x 65 wide flange beams, but availability did not fit this emergency repair response. Nucor Skyline was able to offer a comparable 12 x 74 H-pile section.



Construction of Soldier Pile Wall

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Completed Ground Stabilization Wall



Threaded Bar for Ground Anchors

This soldier pile wall was not typical. Permanent ground anchors were designed into the beam configuration to stabilize the earth underneath the roadway. Nucor Skyline was able to reduce the construction schedule and field labor by providing the pipe pocket anchors pre-fabricated into the beams.

Our fabrication facility is within very close proximity to the beam mill. Our convenient location proved to further reduce transportation and handling costs. Lastly, the steel was treated with a weathered coating prior to delivery, extending the service life of the structure.

PROJECT PARTNERS

Owner

Washington State Department of Transportation

Contractor

Scarcella Bros

PRODUCTS

50 pieces of 12 x 74 H-pile sections, at 50 to 60 feet in length

203 Fabricated Pipe Pockets for Wall Anchors

Beam fabrication and coating supplied and delivered for a turn-key installation

RESULT

As a foundation solutions provider, Nucor Skyline worked with the project designers and contractor to provide alternate material options. Nucor Skyline's standard practice of carrying large inventories and readily available material resulted in a domestic alternative that would not delay this emergency repair. Project partner Mowat Construction turned to Nucor Skyline every step of the way—from coating inspectors and welding certifications to shop drawings and revised designs—to ensure WSDOT requirements were met. Nucor Skyline's broad scope of services continues to raise the bar for material providers.