CASE STUDY

DOT Application

TH 52 Wall LL– Rochester, MN

Project: TH 52 Wall LL
Location: Rochester, MN
Product: Recon Series 50 Gravity Wall
Recon Manufacturer: Cannon Precast
Wall Area: 11,024 SF
Wall Contractor: Zumbro River Constructors
Engineer: MRJ Engineering, Inc.

The Highway 52 Revitalization project called for an 1100-foot long wall with an average height of 10’ (and a maximum height of 14’ 8”) without reinforcement. On top of the wall was a considerable back slope and then a number of existing homes. Excavation at the top of the wall was problematic because the soil was quite sandy, and would not hold a cut. This posed a threat to the stability of the existing homes at the top of the slope. In addition, the soils at the lower portions of the wall were competent rock, which would have been difficult and expensive to excavate. The customer considered soldier piles and lagging with a decorative concrete veneer in front of the wall. However, this proved quite costly.

Recon was asked to study the site and propose a solution. With the help of Recon’s consulting engineer, a proposal to build the wall as a gravity wall was developed.

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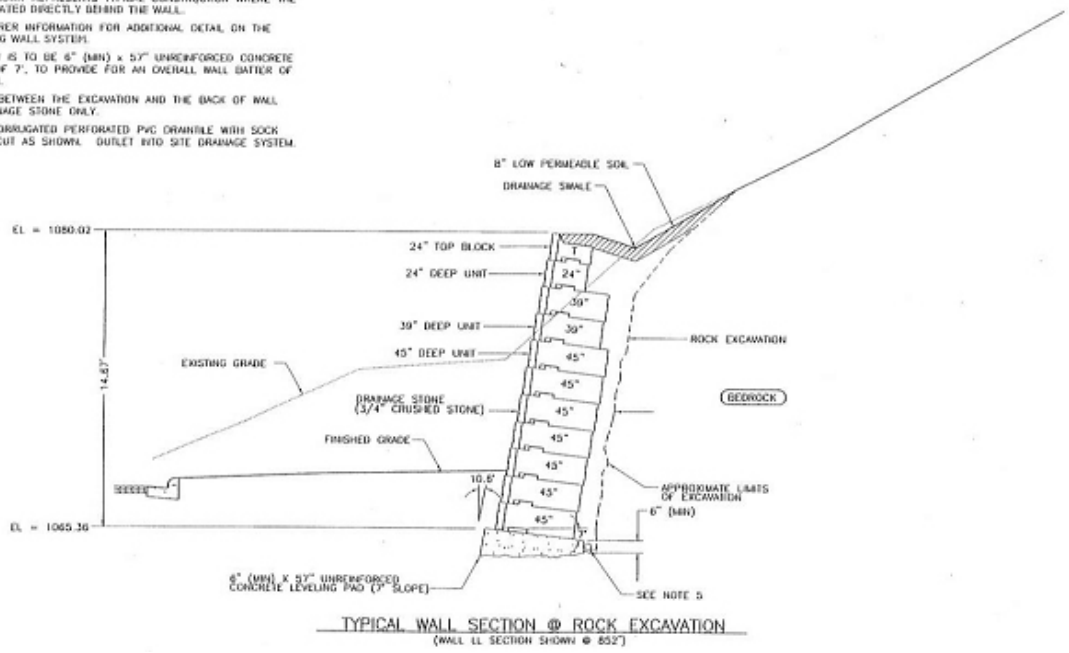
The “batter” of the Recon wall was increased from the standard 3.6 degrees to 10.6 degrees, using a concrete leveling pad. With a combination of the competent bedrock as foundation and retained soils (for at least approximately half the height of the wall) and then the existing sand in place as the retained soils at the upper portions of the wall, a gravity wall became the solution. Significant excavation was avoided. Soldier piling was not needed. Time and money was saved. A great looking wall was created.

NOTES:

1. THE SECTION SHOWN REPRESENTS TYPICAL CONSTRUCTION WHERE THE BEDROCK IS LOCATED DIRECTLY BEHIND THE WALL.
2. SEE MANUFACTURER INFORMATION FOR ADDITIONAL DETAIL ON THE RECON RETAINING WALL SYSTEM.
3. THE FOUNDATION IS TO BE 6" (MIN) x 57" UNREINFORCED CONCRETE WITH A SLOPE OF 7°, TO PROVIDE FOR AN OVERALL WALL BATTER OF 10.6° AS SHOWN.
4. FILL THE ZONE BETWEEN THE EXCAVATION AND THE BACK OF WALL WITH 3/4" DRAINAGE STONE ONLY.
5. PLACE 4" DIA CORRUGATED PERFORATED PVC DRAINTILE WITH SOCK AT BOTTOM OF CUT AS SHOWN. OUTLET INTO SITE DRAINAGE SYSTEM.



TYPICAL WALL SECTION @ ROCK EXCAVATION
(WALL LL SECTION SHOWN @ 852')

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