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# Terraced Walls Provide More Useable Land for Veteran Housing

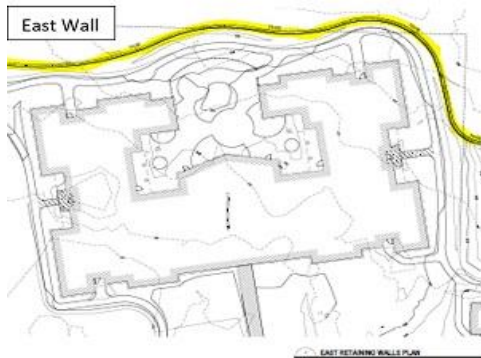
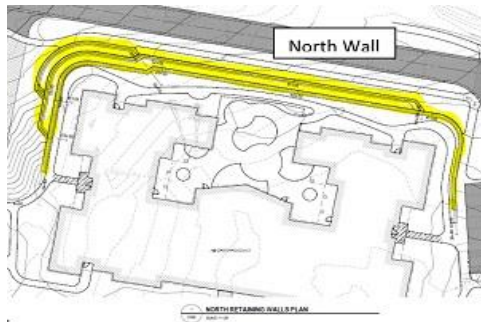
The Grand Rapids Home for Veterans is a Michigan state sponsored long-term care facility located next to the Grand River in a quiet suburb of Grand Rapids, Michigan. The facility has been serving Michigan’s veterans since 1885, going back to the time of the Civil War. Due to the age and state of the existing structures the site needed new facilities and with more up-to-date amenities. Residents will be going from shared bedrooms and bathrooms to individual living areas that will provide a greater sense of independence.

## Plan:

The new facilities are comprised of four separate housing units, three of which need retaining walls due to the slope of the existing terrain. The older facility “felt more like a hospital than a home.” [Tower Pinkster](#), the architectural firm for the project, aimed to change that. The current landscape features sloping hills and large portions of the 90-acre lot are covered with wooded areas. The

### Project Information

**Name:** Grand Rapids Home for Veterans  
**Location:** Grand Rapids, MI  
**Product:** AB Fieldstone  
**Size:** 15,000 ft<sup>2</sup> (1394 m<sup>2</sup>)  
**Wall Builder:** Brad Pastoor  
Twin Lake Nurseries  
**Wall Designer:** Josh Host  
Holland Engineering  
**Allan Block Manufacturer:**  
Consumers Concrete



retaining walls themselves would step up into three tiers, creating a great overlooking view of the local community and the addition of much-needed usable land. The decision to use wide curves was made to ensure adequate spacing was provided, as well as an aesthetically pleasing look to the terrain. Tower Pinkster specifically chose the [AB Fieldstone Collection](#) to meet this aesthetic look to blend into the 90-acre wooden landscape. The location of the walls resulted in a terraced structure, reaching heights of 16 ft (4.8768 m), putting resident and worker safety at a high priority. Fencing above the wall needed to be considered to minimize these risks.

## Design:

With the size and multi-tier aspect of the project an engineering firm with high standards and expertise was selected for the project. Josh Host with the other engineers at [Holland Engineering](#) was that firm. The final design used geogrid reinforcement as well as a combination of 812 and 824 [AB Fieldstone](#) facing units throughout

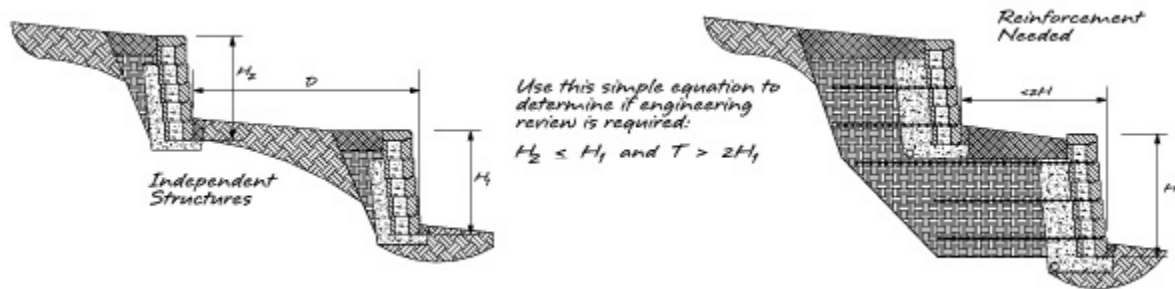


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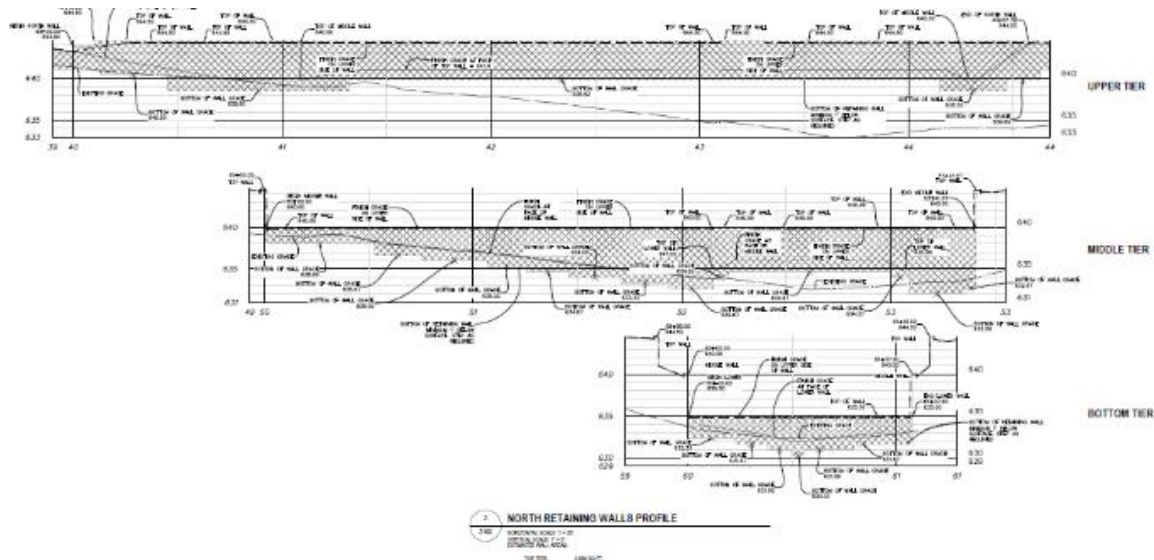
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the terraced structure. Holland Engineering designed the tiered walls individually following AB Best Practices. Terrace walls should be treated as a single structure when the upper tier falls within twice the height of the lower tier. AB Best Practices recommends that the upper walls be applied as a surcharge to the lower wall and to design the grid length as 60% of the total structure height.

Terrace walls can now be modeled directly in Allan Block's design software, [AB Walls 3D+Terraces](#). It can design the tier spacing, height, and surcharges between each tier, customizing it to the exact specifications of the project.



The Grand Rapids Home for Veterans project had many parts that needed to be considered, from geogrid lengths and tall wall considerations, to surcharges above the wall and fence overturning calculations. The designers at Holland Engineering had their hands full, but Josh and his team, by methodically stepping through each area of the wall with the assistance of [Allan Block's Best Practices](#) and [AB Engineering Manual](#), were able to design this stunning new terraced landmark that will stand for years to come.



## Build:

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The design of this wall was only half of the battle. After Josh Host and his team had completed their design, the walls had to be constructed. This opportunity came to Brad Pastoor and his team of Allan Block Certified Contractors from [Twin Lake Nurseries](#). Brad and his team had never constructed a retaining wall using the AB Fieldstone Collection before but were willing to learn. The system utilizes a two-piece facing and anchoring system and is Allan Block's most environmentally friendly collection with the anchoring units made of recycled material. The team at Twin Lake Nurseries reached out to Randy Vreeman with [Consumers Concrete Corporation](#), and



other team members at Allan Block Corporation to teach them what they needed to know to work with the AB Fieldstone Collection. With their hands-on training and AB Certification, Brad and his team were able to construct the multi-wall, 3-tiered structure in virtually no time.

The new \$60 million facility now sits above three beautifully flowing terraced retaining walls that now provides more land for both staff and their veterans to enjoy.

Finally, Allan Block would like to recognize both prior and current service member for the freedoms they provide and the sacrifices they have made. America's veterans make this country great!



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