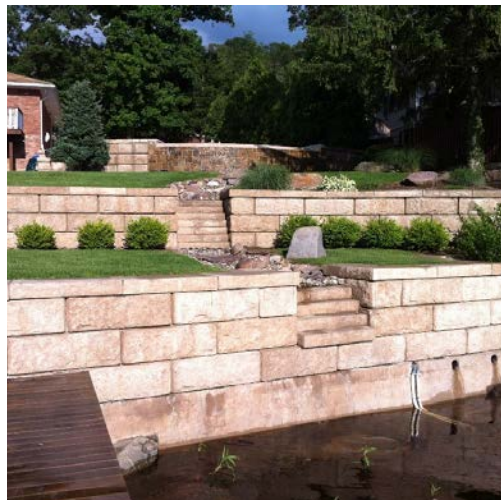




**ReCon**<sup>TM</sup>  
**Retaining Walls**

# Water Applications



# ReCon Solutions...Standing Up To Mother Nature!

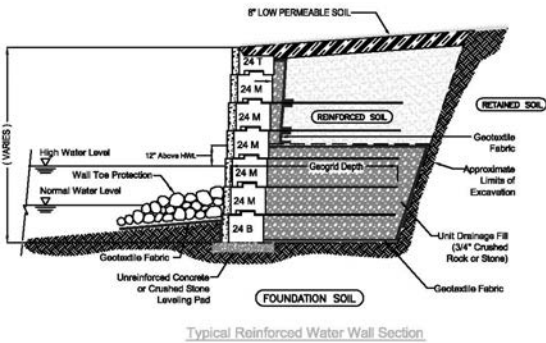
ReCon is an industry leader in supplying aesthetically pleasing and structurally superior retaining wall solutions. ReCon focuses on providing value to its customers, including:

- Engineering and testing for tall gravity walls and taller geogrids walls.
- Solutions that accommodate wall needs rather than dictate them.
- Durability (wet-cast, air-entrained).
- Product shape and size choices that work.

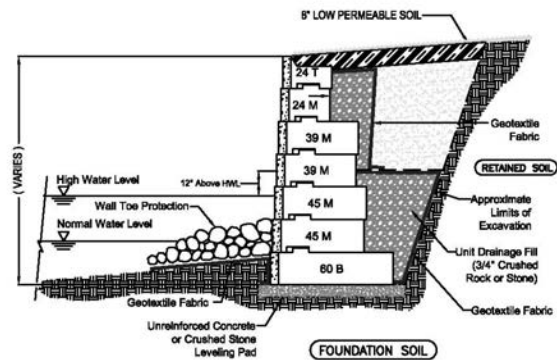
With the continuing changes in weather patterns and the apparent increased frequency in severe storms, ReCon has been recognized as a solution for lake shore stabilization as well as bank stabilization along rivers, streams and drainage channels. With the mass of the ReCon block and the durability of the wet-cast, air-entrained concrete, ReCon is an excellent choice for the harsh environment found in many water applications, including retention ponds and sea walls.

## Engineering

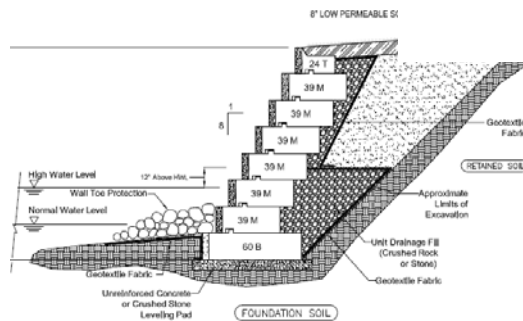
ReCon understands the importance of proper design of a retaining wall, and the special challenges that water at the toe of the wall introduces. Look to ReCon for its Design Software, Estimating Software and a range of construction details and support.



Typical Reinforced Water Wall Section



Typical Gravity Water Wall Section



Typical Gravity Wall Section - Water Application

## Aesthetics



Northshore Granite

LeSueur County Limestone

Old World

Rustic

Weathered Edge





# ReCon Solutions

## Gravity Channel Wall

Tulsa, OK — Fry Ditch Channel Project

The City of Tulsa, Oklahoma and its residents came together with a plan to mitigate the costly effects of flash flooding and the erosion of landowner's property and property values. One such project was the Fry Ditch Channel. On one side of the channel was an existing earthen wall that retained the waters of the Oknoname Reservoir. On the other side were a number of existing homes, with the lots extending up to the channel. While stabilization of the channel was important, it was also critical that the solution (a) result in a minimal disturbance / excavation of the homeowners' property, and (b) meet long term durability and design life criteria. One choice could have been the traditional "cast in place" option, but it would have resulted in additional excavation at the base of the wall to accommodate a cantilevered footing. The search for a solution led to ReCon. The size and mass of the ReCon Block (from 1000 to 3000 pounds per block) and the significant batter achieved with ReCon's channel block system (26 degrees), allowed the design to proceed without the use of geogrids, even though the wall reached 17' 4" in height. Well, little did the team that put together the Fry Ditch improvement project know that the ReCon Wall would be tested even before construction was completed. However, on July 8, 2010, the rains came to Tulsa in torrents and filled the Fry Ditch. At that time, the ReCon Wall had been built to full height, but final grading at both the top and bottom of the wall had not been finished. The flood waters subsided and no harm was done. The wall remained intact and construction of the wall was completed on schedule.



## Gravity Observation Wall at Marina

Mariestad, Sweden

A marina on the Tidan River in Mariestad, Sweden wanted to create an observation platform extending into the lagoon for its patrons. ReCon was selected for the project. A concrete leveling pad was poured after dewatering the lagoon. The wall was actually constructed after water had returned to the lagoon (not necessarily a recommended construction practice, but it worked because of the concrete pad.





# ReCon Solutions

## Hybrid Gravity / Grid Seawall

Newport, RI — Protecting Ocean Avenue

The City of Newport, RI sought “design Build” proposals to replace a failing cast in place retaining wall along the famed Ocean Avenue. Critical wall criteria included sustainability, minimal construction footprint, and aesthetics. Fourteen designs were submitted, all focusing on a cast in place solution or repair of the existing wall, with the exception of the ReCon precast modular block wall submission. The city selected the ReCon proposal because it gave them a completely new wall, the modular nature of the system allowed for easy installation between tides, the grid tied the entire system together, the joints between the blocks allowed for rapid escape of water from overtopping waves, and the road could remain open during construction. The solution chosen was a **hybrid gravity and positively connected MSE retaining wall** that utilized (a) the ReCon Block, which is solid and has no reinforcement to corrode, (b) Tensar® grid which was utilized, not to reinforce the slope, but rather to contain a large drainage stone zone behind the wall, and (c) Armorflex®, which provided erosion protection at the top of the wall. The grids were cast directly into the base ReCon Block and the top ReCon Block, creating a positive connection that is not susceptible to corrosion. The grids were spliced, creating an envelope around the drain zone. The wall was completed just before tropical storm Irene and then hurricane Sandy arrived along the coast.





# ReCon Solutions

## Gravity Wall for Shoreline Stabilization

Sioux Falls, SD — Covell Lake Shoreline Stabilization Project

The City of Sioux Falls, SD needed to stabilize the shoreline of Covell Lake and improve drainage between two portions of the lake separated by W. Madison Street. The City had considered sheet piling and cast in place wall solutions before settling on the ReCon system. The wall stretches for 550 lineal feet of shoreline, reaching a height of 9' 4". Built as a gravity wall, the construction required that the base of the wall be "dewatered". A temporary earthen dam was built, with a trench then excavated through the imported fill where the base of the wall was placed. The foundation soils in one section of the wall were poor, and thus geopiers were installed along about 24 lineal feet. Culverts were installed to allow free flow of the lake underneath W. Madison Street. The section of the wall thru which the culverts flowed was built as "cast in place", with ReCon supplying liners to match the "cast in place" to the balance of the wall built from the large ReCon blocks.



## Gravity Wall Retention Pond

Beachwood, OH — Eaton Corp. Headquarters

When the project architect sought to design the site for a new Eaton headquarters building in Beachwood OH, the goal was to combine the necessary function of a large retention pond with that of an aesthetically pleasing reflection pond that would serve as a focal point for visitors and a pleasing view for the employees working in the new building that wraps around a portion of the pond. Given the clean lines and the contemporary architectural style of the building, the material selected for the walls of the pond had to have clean, uniform, and clearly delineated lines. ReCon modified its popular Old World texture stretching the standard block from a face size of 48' X 16' to an elongated 72" X 12". The result is a showpiece for this new corporate campus.





## ReCon Solutions

### Gravity Wall Along River Bank...2013 National Project of the Year Award Winner

Milwaukee, WI — Kinnickinnic River Naturalization

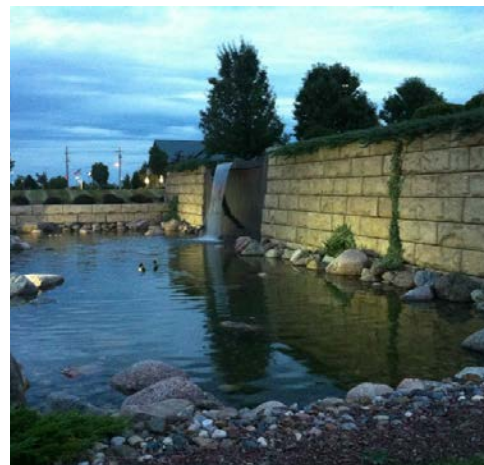
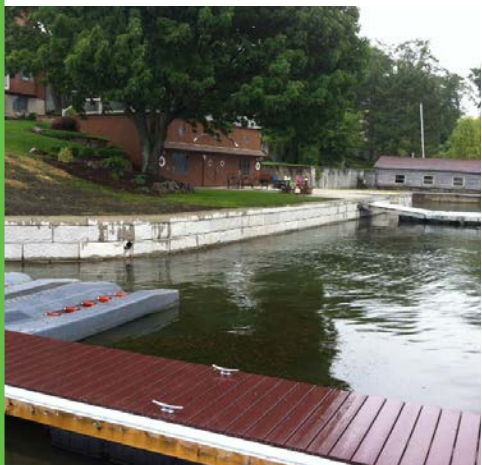
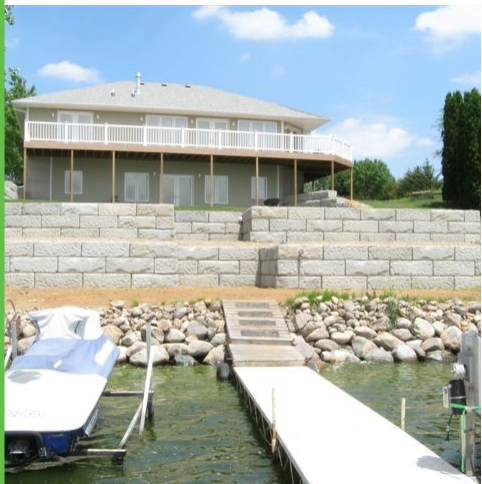
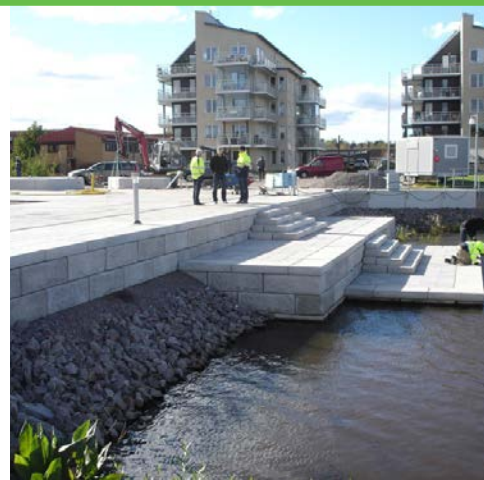
The KK River, which runs thru the southern portion of Milwaukee, had been listed by the American Rivers as the 7th most endangered river in the U.S. The Milwaukee Metropolitan Sewerage District targeted a section of the river for restoration, transforming it from a concrete channel which was an urban eyesore to a natural meandering river that would be less prone to flooding and would bring back native plants and fish species. The project involved the purchase of a number of homes that lined the river, removal of the existing concrete, and widening the river channel. With the widening of the river channel, excavation into the banks along the river was required and a method to stabilize the embankments was required. The ReCon Block with its gravity design capability was selected. The gravity design minimized the excavation required, with the elimination of the use of geogrids. ReCon Block lined about 600 lineal feet of the shoreline. More aquatic life has returned to the river, flood risks have been reduced and residence will have a new green space near the channel to enjoy the Kinnickinnic. **In 2013, the American Public Works Assn. named this project its National Project of the Year.**



## Culvert Openings











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