



# **CITY OF NEWBURGH WATER DEPARTMENT**

## **MARNE AVENUE WATER STORAGE TANK REPLACEMENT**

**CONSTRUCTION START DATE: AUGUST 25, 2013**

**ANTICIPATED COMPLETION: SPRING 2014**



*Engineers • Environmental Scientists • Planners • Landscape Architects*



**DYK and Natgun  
Generations Strong**

## Site Overview



Aerial photograph of Marne Avenue Water Storage Tank prior to the start of construction.



Aerial photograph of Marne Avenue Water Storage Tank during construction.

# Construction of Walls and Roof



Marne Avenue Water Storage Tank Replacement



Marne Avenue Water Storage Tank Replacement



## Marne Avenue Water Storage Tank Replacement



Molds are assembled for each of the different wall and dome panels. Steel bar reinforcing of the wall panels is installed in the mold prior to pouring cement into molds. Reinforcing of the wall panels ensures stability of the walls after construction. Contractors ensure that each panel has a smooth even finish with no flaws in the hardened concrete. After each panel has been given time to harden, a plastic barrier is placed over the panel and a new one is assembled on top of the finished panel. Once all of the panels are completely finished, they can be removed individually to assemble the new water storage tank.

## Construction of Tank Floor

Marne Avenue Water Storage Tank Replacement



Marne Avenue Water Storage Tank Replacement



Marne Avenue Water Storage Tank Replacement

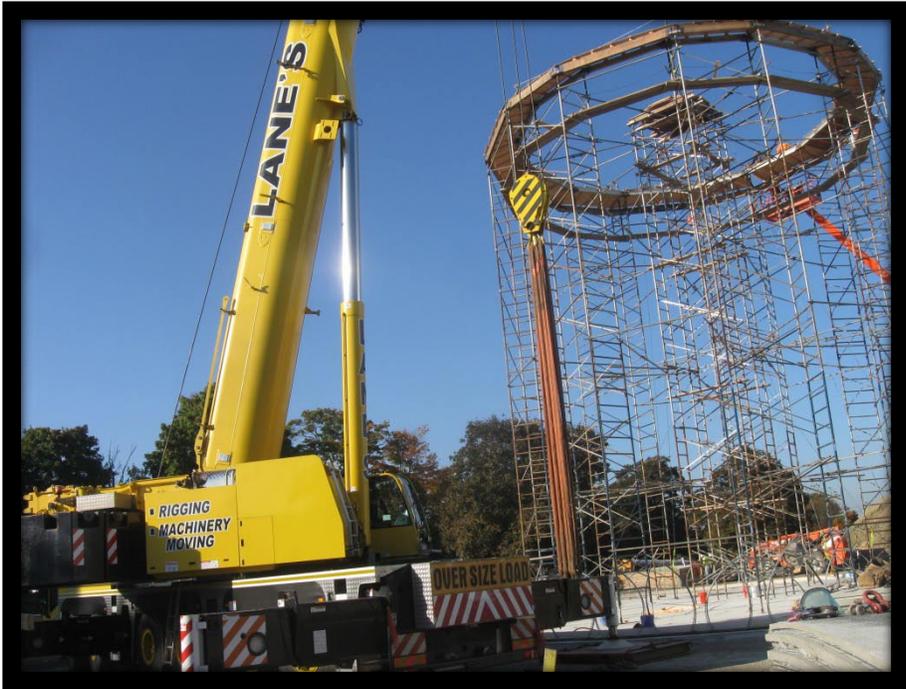


## Marne Avenue Water Storage Tank Replacement



Excavation of soil for the floor of the new water storage tank is completed. After the excavation is complete the ground is leveled and compacted in preparation for the new tank. The floor of the tank is then prepared using compacted stone. Similar to the wall and dome panels, a mold is made for the tank floor around the border of the tank. The inlet pipe into the tank, which will provide the means to fill the tank, is installed prior to pouring the cement. Steel reinforcement of the tank foundation is installed to provide extra strength for the concrete which will support the weight of the water inside the tank. Cement is then poured into the mold and smoothed, ensuring even finish with no flaws in the hardened concrete. The finished cement floor of the tank can be seen in the image directly above.

# Assembly of Tank



Marne Avenue Water Storage Tank Replacement



Marne Avenue Water Storage Tank Replacement



Marne Avenue Water Storage Tank Replacement



Marne Avenue Water Storage Tank Replacement

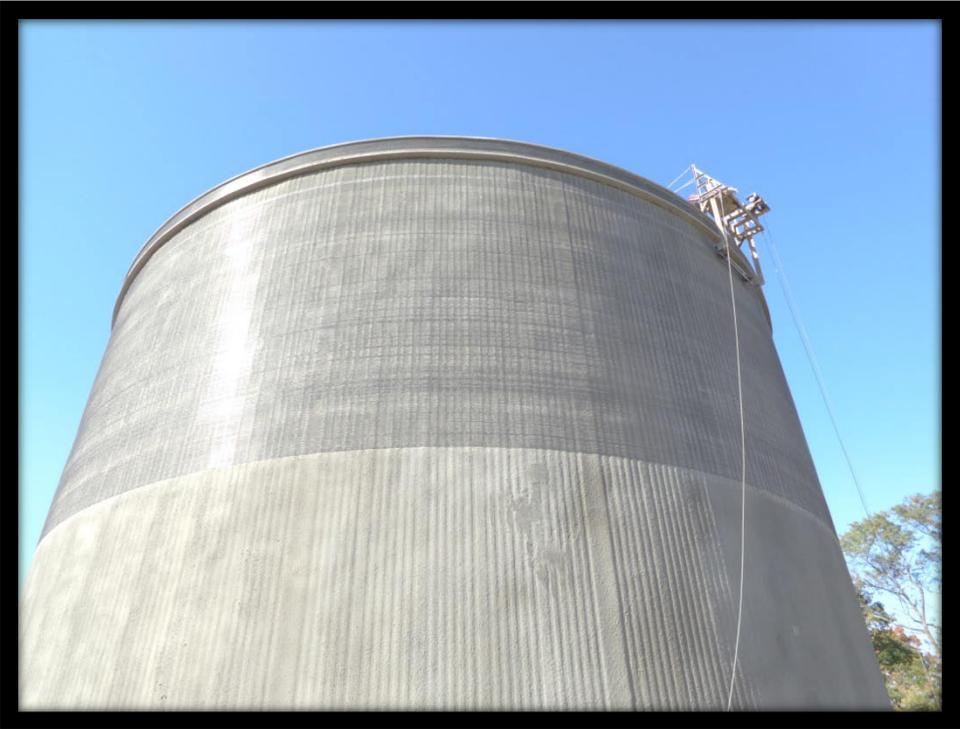


## Marne Avenue Water Storage Tank Replacement



With the floor, wall panels, and dome roof panels hardened the tank is ready to be assembled. Scaffolding is installed in the middle of the tank to provide a support system for the roof panels. A crane then individually removes the wall and roof panels from the molds and installs them until the tank is assembled. After all of the panels are placed empty spaces between each panel are filled with concrete to fully enclose the inside of the tank.

# Exterior Construction of Tank



Marne Avenue Water Storage Tank Replacement



## Marne Avenue Water Storage Tank Replacement



After the tank panels are in place the outside of the tank is coated with concrete then wrapped with steel wire. This process is repeated multiple times to ensure the integrity of the tank. The exterior of the tank will receive a final waterproofing and color in the Spring.

# Water Distribution Piping – Robinson Avenue



Marne Avenue Water Storage Tank Replacement



## Marne Avenue Water Storage Tank Replacement



A new water main is constructed from Robinson Avenue, across Marne Avenue and connected into the new water storage tank. This water main will serve as a source of water for the new tank.

**Water Distribution Piping – Mandigo Place**



## Marne Avenue Water Storage Tank Replacement



The existing water main along Mandigo Place is connected to a new water main which will serve as an additional source of water into the new tank. The new water storage tank can be seen in the top right of the image directly above.