



Dutchland

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Modifying Existing Post-Tensioned Concrete Structures

Specializing

In

Designing

Manufacturing

And

Constructing

Modifying post-tensioned structures to adapt to changes in tank function is very feasible and does not compromise the structural integrity of the tank if done properly. Typically, adding wall penetrations can be easily accomplished. Less than 1% of Dutchland tanks have needed to be modified; however, when modifications have been required, Dutchland has always been able to accommodate the changes.

Shown below is a project in which Dutchland, Inc. was contracted to add a sluice gate into an existing post-tensioned wastewater treatment plant.

Waste

Water

Treatment

Plants

Water

Storage

Tanks



Rough opening cut into wall.



Installed sluice gate.

Pumping

Stations

In 2012, the Ephrata Borough Authority added an outside ring to an existing oxidation ditch originally constructed in 1982. The modified wastewater process upgrade required the installation of a 4-ft by 4-ft sluice gate into the existing 10-ft tall post-tensioned wall. The tank was modified by terminating the post-tensioning strand at the opening and adding make-up tendons to the wall above the opening in the structure. The tank modification was completed in 72 hours.

Custom

Precast

Concrete

Structures

Post-tensioned concrete structural designs are extremely flexible. Tendons are typically spaced with sufficient distance to allow penetrations of standard sizes to be added later. Usually smaller penetrations can be core drilled through the walls without affecting the post-tensioning strand at all. Post-tensioned tank owners and consulting engineers are reminded that Dutchland, Inc. should be consulted before modifications are made in post-tensioned tanks to help ensure project success.