

CASE STUDY

United States Cold Storage (USCS)

Richland Township, Pennsylvania

Storage Provided:	79,336 cubic feet
Area:	35,102 SF
Model:	Recharger® 330XLHD
Number of Units:	931
Installed:	June 2014
Engineers:	Bohler Engineer Center Valley, Pennsylvania
Contractor:	The H & K Group Blooming Glen, Pennsylvania



United States Cold Storage (USCS) has been providing refrigerated storage services to the food industry since 1889. Today, USCS is a leading national public refrigerated warehouse operator with 35 facilities located in 12 states. The organization recently chose to increase its presence in Pennsylvania with a three-phase expansion plan, totaling 500,000+ sq. ft., with the first phase being the construction of a 230,000+ square-foot cold storage facility to utilize truck and rail transport for shipping operations in Richland Township, Penn.

In January 2013, engineers from Bohler Engineering, based in Lehigh Valley, Penn., were brought on to assist with due diligence exploration and were tasked with designing the new location, which would include the installation of a stormwater management system. Engineers from Bohler collaborated with The H&K Group/Blooming Glen Contractors, Inc. (BGC) and Primus Builders to develop the new layout for the site.

Several stormwater solutions were considered, but the contractors ultimately selected cost-efficient CULTEC stormwater management chambers to provide detention, temporary storage of excess stormwater on-site and allow for infiltration in accordance with both the Township and State regulations. The team broke ground on the project in November 2013.

Originally, the project was specified around a concrete underground stormwater management system at the request of USCS due to anticipated truck traffic. The H&K Group/Blooming Glen Contractors, Inc. had favorable results using CULTECs chambers on previous projects and therefore asked CULTEC to present an alternate design using its chambers. An alternate design specified with CULTEC's Recharger 330XLHD chambers was presented to and approved by Bohler Engineering as an equivalent alternative to the



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original concrete system from a stormwater management perspective. The CULTEC system was ultimately selected by H&K Group/ Blooming Glen Contractors, Inc. based on cost-effectiveness, ease of installation and wheel load capabilities.

CULTEC's Recharger 330XLHD chambers are designed for traffic applications and capable of withstanding the weight of the tractor trailers that will visit the storage facility daily. This particular project included a total of 931 chambers that provide the site with 79,419 cu. ft. of storage when surrounded by stone. A single chamber measures 30.5" high, 52" wide and 8.5' long and holds 475 gallons.

The team faced various challenges during the design and installation of the stormwater management system. Originally nicknamed the "Great Swamp" by early settlers in the 1700s, the site required prep work including site stabilization and purging as well as consideration of the site's high groundwater. Contractors worked to install chambers around a number of light pole bases along the

building, which presented further challenges during both the design and the installation phase.

"We had to manipulate the system a few times on-site due to the presence of the pipes, poles and other issues. We were still able to get the chambers installed within four days because CULTEC's product designs can be altered out in the field if needed, offering customers flexibility and a much more accommodating option compared to various others systems currently on the market," explained Rob Mitchell, contractor with The H&K Group/ Blooming Glen Contractors.

In addition to the CULTEC chambers, several other stormwater management solutions are present on-site. Vegetated swales provide initial pre-treatment to eliminate fine particles from runoff. A combination of catch basins, water quality separators, manholes and HDPE and concrete pipes, remove up to 44% of total suspended solids from runoff. In addition, rain gardens absorb rainwater runoff from impervious areas before it is directed into the



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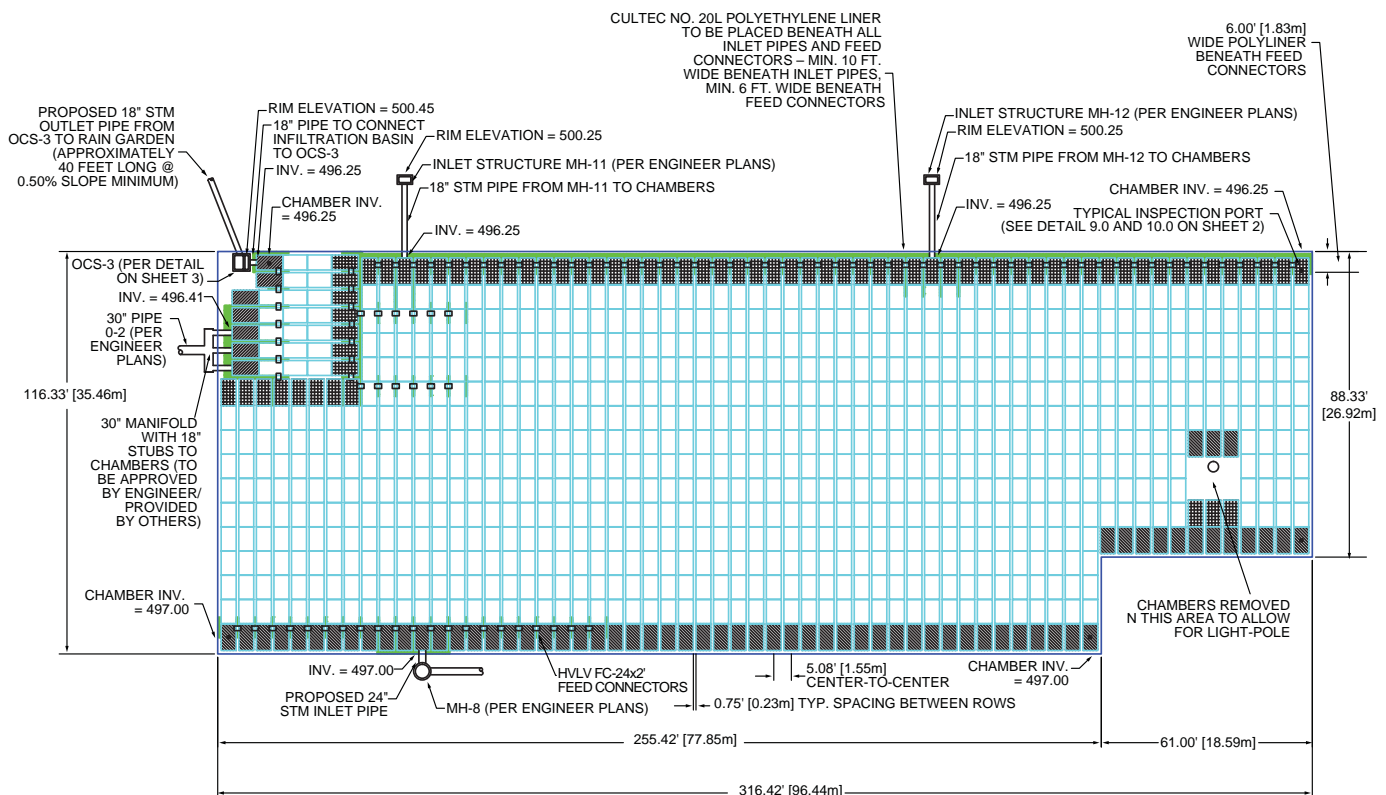
CULTEC units, which eliminate 80% of total suspended solids via infiltration.

“Richland Township and Buck County Conservation District regulations and the National Pollutant Discharge Elimination System (NPDES) permit program required volume mitigation for increased runoff volume,” said Steve Walsh of Bohler Engineering. “This volume reduction was achieved using CULTEC’s underground infiltration chambers in conjunction with other volume, rate and water quality best management practices proposed on-site.”

Phase I of this project which includes the build-out of the primary structure, was scheduled to be completed in early 2015. Phases II and III, which will feature building

expansions and a second underground stormwater management system, should begin in late 2015.

BGC and The H&K Group Family of Companies provide heavy civil/site contracting and construction services, construction materials including crushed stone, asphalt and ready-mix concrete, building materials including architectural stone, mulch and bio-soil products, concrete block retaining wall products, soil management and materials recycling services and facilities through over 80 operations in four states including eastern PA, NJ, MD and DE. The Richland Township, Penn-based USCS is now open and has hired approximately 100 workers.



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