UNITED STATES COLD STORAGE (USCS)

RICHLAND TOWNSHIP, PA - STORMWATER CASE STUDY

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.

Bohler Engineering was tasked with designing the new location, which would include 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.

System Specs	
Storage Provided	79,336 CF
Area	35,102 SF
Chamber Model	Recharger® 330XLHD
# Units	931
Project Engineer	Bohler Engineer Center Valley, PA
Contractor	The H & K Group Blooming Glen, PA

Several stormwater solutions were considered, but the contractors ultimately selected CULTEC stormwater management chambers to provide detention, temporary storage of excess stormwater on-site, infiltration in accordance with Township, state and federal environmental regulations.

Originally, the project was specified around a concrete underground stormwater management system. This specification came at the request of USCS due to anticipated truck traffic and load bearing requirements. However, the site contractor had favorable results using CULTEC chambers on previous projects he had been part of, and therefore asked CULTEC to present an alternate design using its chambers. So, the alternate system was designed and presented, featuring CULTEC's Recharger 330XLHD chambers, to Bohler Engineering as an equivalent alternative.

The design was approved by the engineering team, and the CULTEC system was ultimately selected by the contractor 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.


Recharger® 330XLHD Chamber

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.


CULTEC Internal Manifold Feature

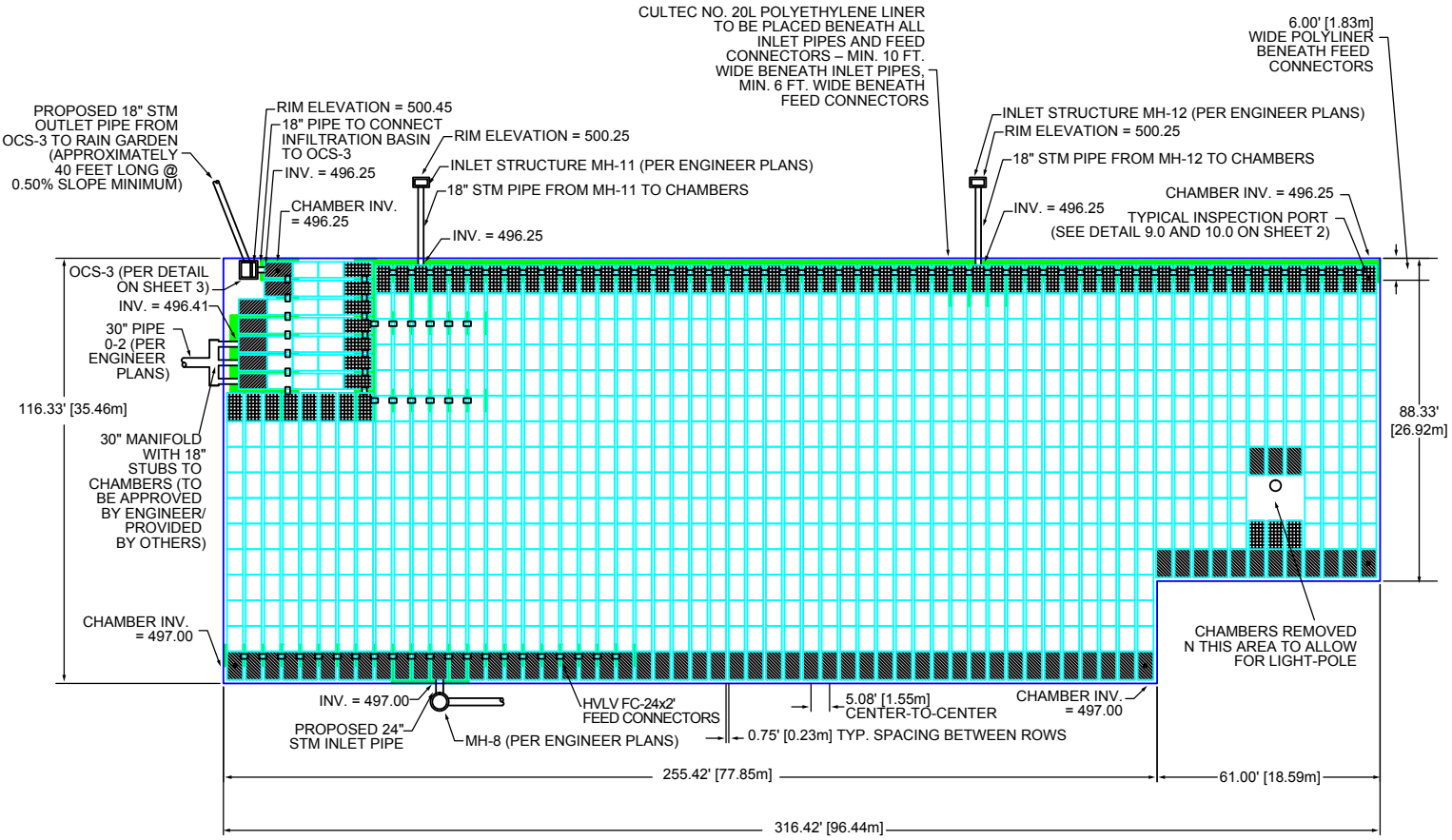
Contractors worked to install chambers around a number of light pole bases along the building, which presented further challenges during both the design and the installation phase.

"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 in the field if needed, offering flexibility when 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. 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 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. We were very satisfied with the CULTEC chambers, and will specify them in the future."

CULTEC, Inc.
878 Federal Road • P.O. Box 280
Brookfield, CT 06804 USA
P: (203) 775-4416 • 1 (800) 4-CULTEC
www.cultec.com



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