

YANKEE FORD CAR DEALERSHIP

THOMASTON, ME - STORMWATER CASE STUDY

In Thomaston, ME, car dealership Rockland Ford recently decided to expand its facility by moving part of the business across the street into an undeveloped, 6-acre plot of land. Now renamed 'Yankee Ford', the dealership's new expansion will use the same architectural design as the existing location and will include an approximately 24,000 square foot building with over 200 parking spaces to accommodate much of the vehicle inventory. Since the area was vacant before construction, a stormwater management system would need to be installed to mimic natural soil drainage.



One of the largest challenges with this particular site was its soil composition. Under the primary, top soil layers was a heavy clay soil base. In nature, stormwater would typically be filtered through these top soil layers and be absorbed into the ground. However, when those permeable layers are removed due to construction, the only soil available for infiltration is the underlying clay.

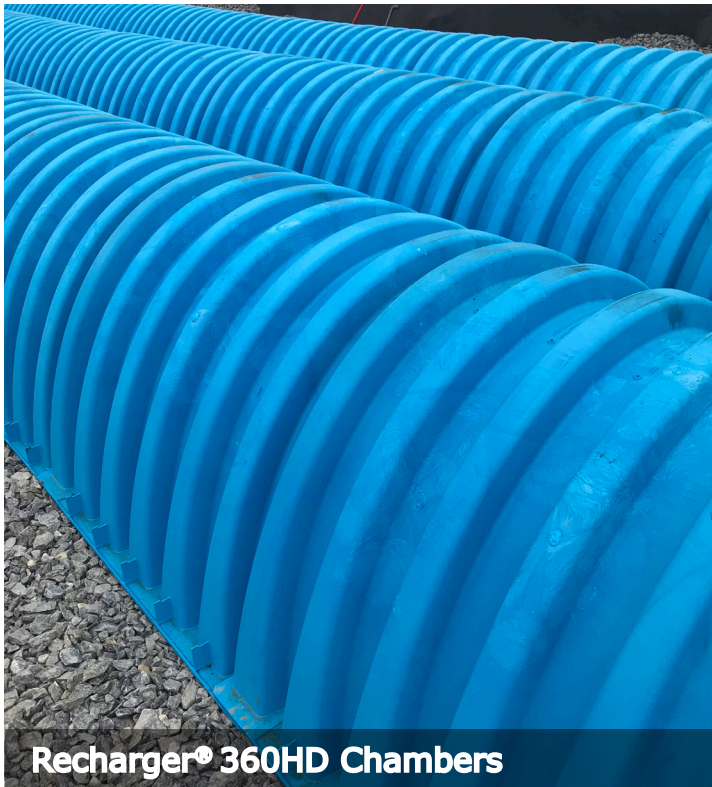
System 1:	
Storage Provided	21,464 CF
Area	7,770 SF
Chamber Model	Recharger® 360HD
System 2:	
Storage Provided	13,642 CF
Area	5,114 SF
Chamber Model	Recharger® 360HD
Total Units:	535
Project Engineer	Sitelines PA Brunswick, ME
Contractor	Peter Overlock Owls Head, ME

Clay soil is an impermeable soil, meaning that water cannot be absorbed into it. Therefore, to effectively manage incoming stormwater, a stormwater management system would need to be able to drain out all water after every storm to avoid storm surge leaving the site. Clay soils also tend to be weak and unstable, which can be problematic for contractors trying to use heavy machinery to install the system. Lastly, the surface area available had a relatively small footprint and limited depth – meaning the stormwater system chosen would need to provide large storage volume over a small area – and withstand heavy traffic above-ground.

Originally, the engineer looked to install an underground pipe system. However, this proved to be expensive and owners encouraged engineers to look for an alternative. After careful consideration, CULTEC sub-surface plastic chambers were evaluated and ultimately chosen for the site.

CULTEC CONTACTOR® & RECHARGER® STORMWATER SOLUTIONS

A plastic chamber system, like CULTEC's chambers, would allow for more storage volume over a limited area at a more reasonable price point. The chambers are easy to install and do not require heavy machinery to place into configuration. Additionally, the particular chambers chosen for the site, the Recharger® 360HD, are structural foam injection molded, allowing them to withstand heavy traffic loads that the dealership is expected to experience. Lastly, the 360HD chambers conform to the performance requirements of ASTM standards F2787-13 and F2418-16a.



Recharger® 360HD Chambers

The Recharger® 360HD was selected for this project due to its strength, high-capacity storage capability and its compact footprint. The 360HD is a 36" tall chamber, complete with a side portal internal manifold feature to further conserve project area. Each CULTEC chamber is value engineered for maximum cost savings, and has 8.6% more storage per foot over 42" HDPE pipe. The combination of increased storage volume and cost savings ultimately made the 360HD chamber the perfect fit for the Yankee Ford project.

In addition to their storage capacity, the chambers are easily stacked on pallets for cost-efficient shipping and a reduced carbon footprint. The lightweight nature of the product also allowed contractors to hand place the units on-site, unlike larger, more cumbersome products.

"The individual chambers went together easily by overlapping the corrugations – simple to use and easy to install" said Peter Overlock, contractor at the Yankee Ford project. "My team really appreciated the technical support as well. CULTEC went the extra mile and sent one of their technical designers to oversee the beginning of installation at the site, and our sales representative was always available for any questions we had."

The contractor wasn't the only party who enjoyed the team collaboration. "At CULTEC, we're very proud of our technical department and their capabilities" said Dan Gera, CULTEC Technical Manager. "We're available to speak directly with engineers and contractors to address any of their project specific questions. This really sets us apart from our competition – we're always willing to roll up our sleeves and work hard to complete a project with no issues."

Comprised of two systems, the CULTEC chambers provided a total of 35,106 cubic feet of storage. The 535 Recharger® 360HD units were installed over a total of 12,814 square feet. The expanded portion of the Yankee Ford dealership is scheduled for completion in the spring of 2020.



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