

CASE STUDY

Major General Emmett J. Bean Federal Center Lawrence, IN

System 1:

Storage Provided: 16260 CF
Area: 6828.8 SF
Model: Recharger® V8HD
Number of Units: 144
Installed: April 2015

System 2:

Storage Provided: 23214 CF
Area: 6723.38 SF
Model: Recharger® 902HD
Number of Units: 216
Installed: July 2016

System 3:

Storage Provided: 42015 CF
Area: 12496 SF
Model: Recharger® 902HD
Number of Units: 384
Installed: August 2016

Engineer: Dewberry
Peoria, IL

Contractor: HIS Constructors, Inc.
Indianapolis, IN

For years now, the U.S. Military has been in the forefront of the minds of most Americans. Many military compounds and buildings have recently begun the process of updating various features — security and structural maintenance being a few to name. A substantial part of structural maintenance that any large facility faces — military and non-military — is how to optimize large parking lots and outdoor storage areas to remain safe during unpredictable weather events. This thought inspired a portion of the renovations to the United States' second largest military facility behind the Pentagon; the Major General Emmett J. Bean Federal Center, commonly referred to as Building One. Building One operates as finance offices for the entire U.S. military. Situated over the 72



acres of land, the 3-story masonry structure was built in 1953 and houses over 4,800 employees. The Bean Federal Center contains 60 percent of the nation's entire usable square footage for DFAS safes, vaults and financial systems, and the only DFAS area for classified data. The building is the third largest federal building in the country.

As property of the General Services Administration (GSA), the Federal Center is currently undergoing a repair and alteration project as part of center-wide site improvements — the largest of which is the remodeling of the Federal Center's parking area. In addition to resurfacing and reconfiguring over 1,000,000 square feet of parking lots, the project proposal calls for an updated stormwater management system to address serious drainage deficiencies that have historically plagued the lots. Much of the current stormwater system for Building One is as old as the building itself, and is in a state of disrepair, repeatedly causing



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flooding of the parking lot during storms. In 2012, GSA took stopgap measures, such as hot patching and minor repaving, to temporarily address this issue — however, the underlying drainage deficiency remains and the lack of a quality storm water system continues to result in the deterioration of the parking lot. Over the years, several locations become hazardous during large rain events due to flooding and require closing off. Additionally, degraded areas of the parking lot must also be closed frequently to accommodate temporary fixes. The inconveniences and safety issues have propelled the GSA to look into upgrading and replacing the existing stormwater system. In preparation for the upcoming winter and following spring, the project's team needed to move on a solution quickly.

"The reconstruction of the parking lot was a major part of the overall project," said Jay Schiel of Utility Pipe Sales. "The current parking lot had very poor drainage and there was virtually no stormwater management on

site prior to our efforts in concert with the design engineers and contractors."

It was clear that implementing a stormwater system underneath the parking lot was a necessity, but it wasn't that simple. There was an issue of inconsistent groundcover that needed to be addressed. Over the years as the parking lot weathered away, so did the ground cover; leaving behind varied depths under which the new stormwater management remedy would be installed. The varied elevations created the challenge of finding an effective stormwater management system capable of meeting high-volume requirements under both limited and excess cover, depending on the location of the system. After an initial attempt at proposing another plastic chamber product, the project team redesigned their plan and included CULTEC's stormwater management chambers. The wide variety of chamber sizes offered by CULTEC were ideal for the area's varying cover requirements.



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CULTEC chambers offers the most extensive line of chamber sizes ranging from 8.5" — 48" high to fit almost any installation requirement. Therefore, the client was able to utilize two sizes of CULTEC chambers to accommodate the varied site restraints without needing multiple stormwater products from a series of manufacturers. Keeping with one manufacturer allows the contractor to become familiar with how the products are installed and helps to fast-track the overall installation. CULTEC's products meet traffic wheel load criteria and are manufactured at facilities with strict quality control, making them ideal for a military installation such as this one. For the Center, CULTEC's Recharger® V8HD™ and Recharger® 902HD™ products were specified. Both of these chambers are ultra-high capacity chambers and would aptly address the flooding issues while withstanding heavy rainfall and traffic conditions. The Recharger V8HD chamber measures at 32" high and has a bare chamber storage of 8.68 cubic feet per linear foot. Likewise, the Recharger 902HD model is 48" high and boasts a chamber storage of 17.66 cubic feet per linear foot. There were three new stormwater systems installed in three phases. Phase I installed 144 Recharger V8HD units as of April 2015, Phase II consisted of putting 216 of the Recharger 902HD units in place in July 2016, and finally Phase III recently installed in August 2016 placed the remaining 384 Recharger 902HD units.

"We're proud to be able to offer such a wide variety of chambers for different capacity and cover requirements," said Dan Gera, Technical

Specialist for CULTEC, Inc., "The breadth of product line is one of the strengths of the CULTEC product, and often seals the deal for a potential customer — they can trust CULTEC will have their solution, no matter what the site requirements".

The three beds were configured in just over a 26,000 square foot area. Once installed, the three systems in total provided just over the 81,460 CF of storage the project required. A sediment removal filter system was installed upstream of the chambers for pretreatment of the soils on site, working to trap heavier sediment before it reaches the CULTEC system. Additionally, CULTEC Separator™ rows were installed on the exterior rows of each bed at any location where water is entering the system to further promote water quality and allow maintenance of the system.

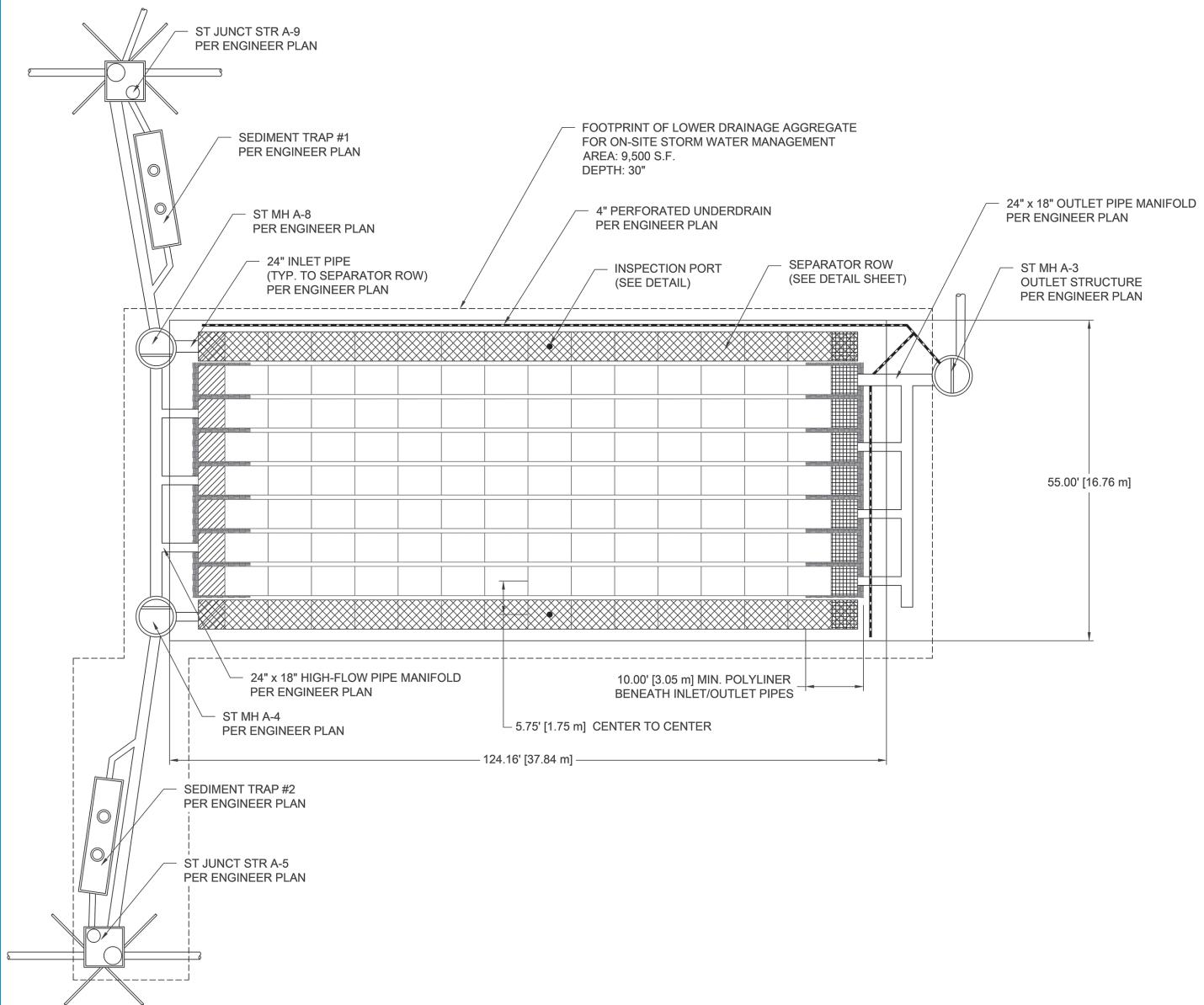
All parties involved felt the installation went smoothly. According to project superintendent Grant Collinsworth, HIS Constructors, Inc., "the installation went very quickly and the Cultec representative was on-site to offer advice and answer any questions we had."

The three-phase stormwater chamber installation was fully completed in August 2016 without any issues. The project was well received by the General Services Administration and the employees of the Major General Emmett J. Bean Federal Center, who can now be confident that their parking areas will drain stormwater properly for many years to come. Construction on the entire project is expected to be complete by the end of this year, 2016.



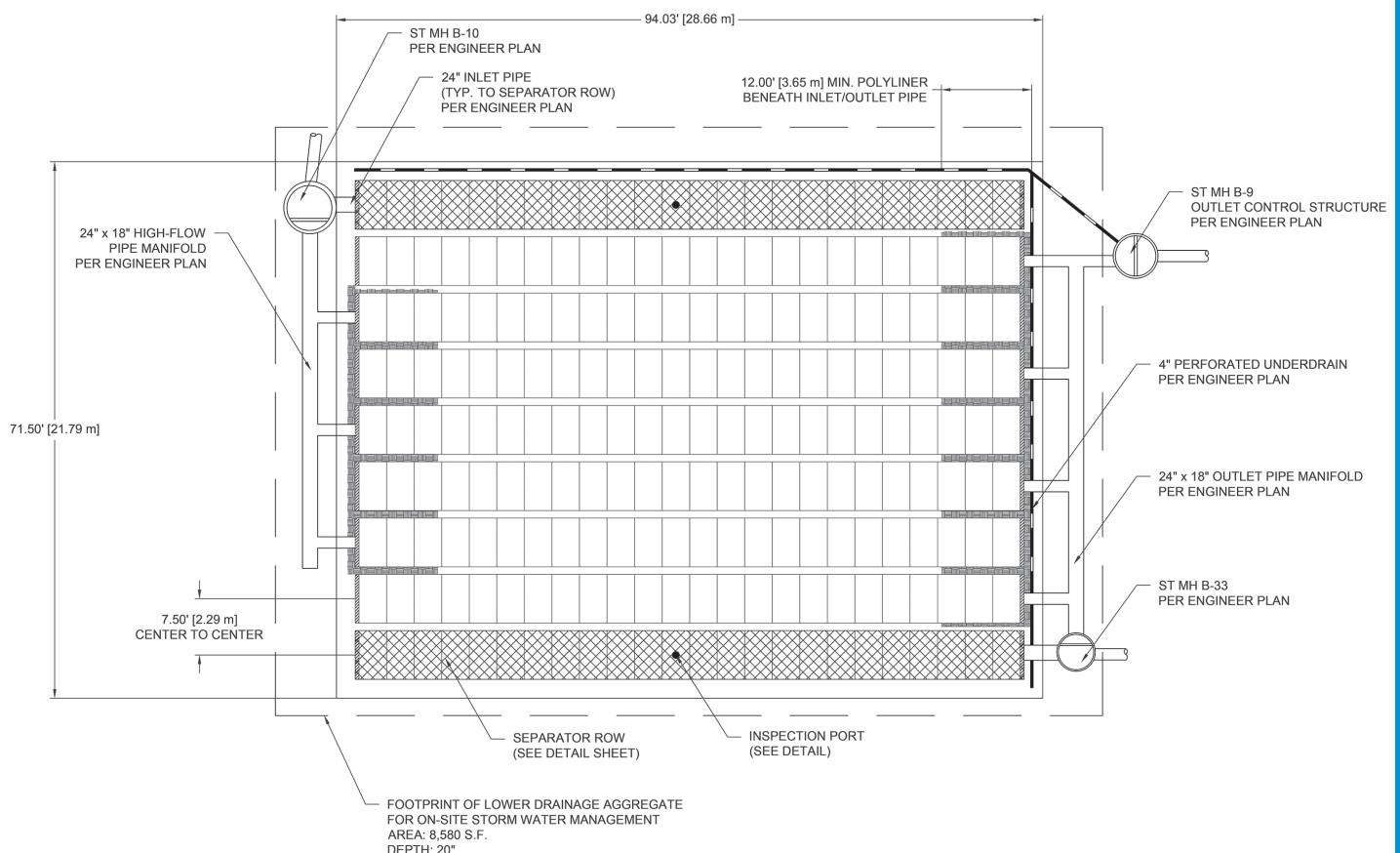
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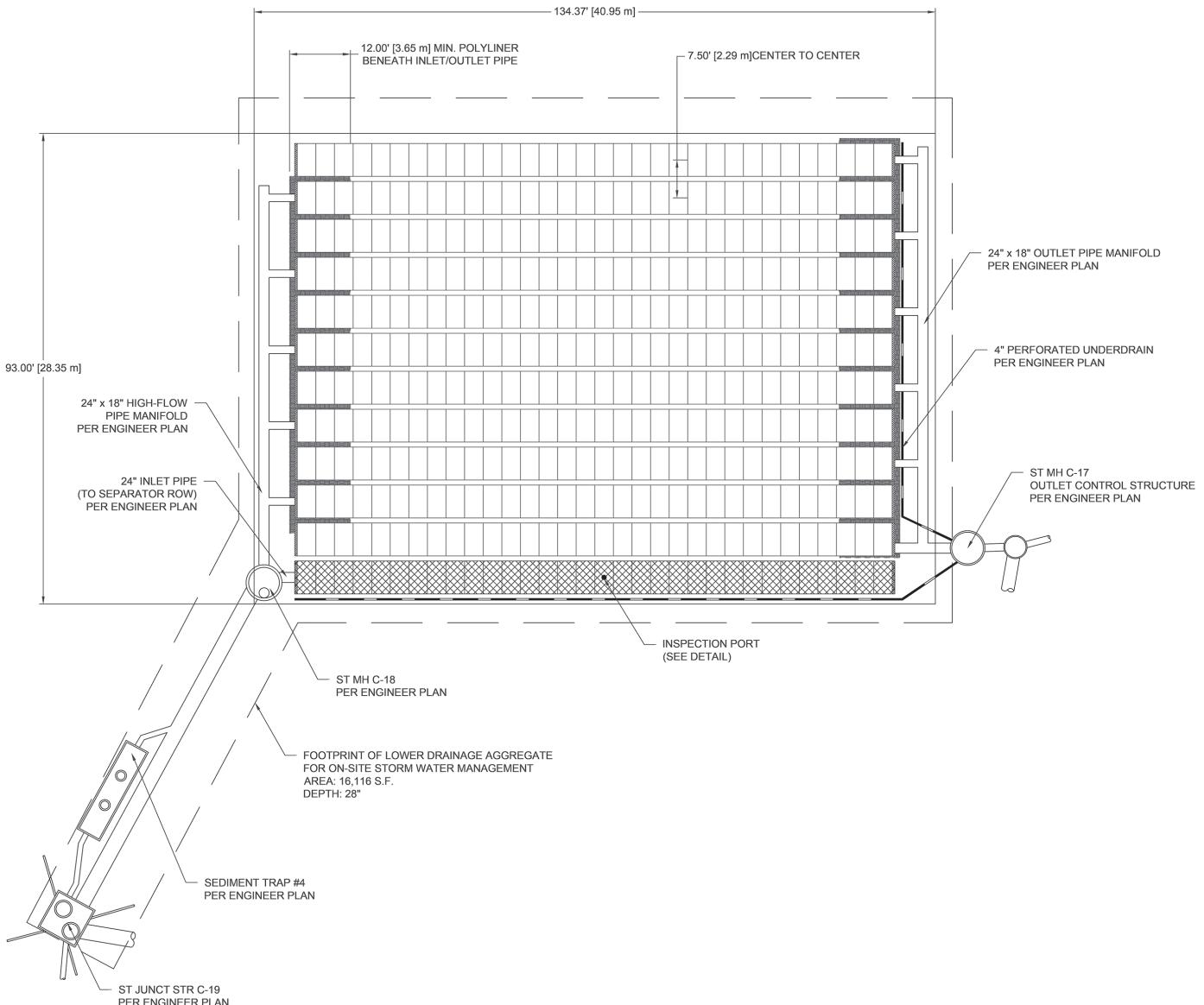
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