



CASE STUDY

Stormwater Capture & Treatment

DESCRIPTION

This site is approximately 2 acres in size and contains a commercial skylight manufacturing building which is approximately 72,000 sf. The remainder of the site is composed of employee parking lots, driveways, and equipment storage. The stormwater coming from the top of the manufacturing building and parking lots was tested and found to contain high levels of sediment and metals, requiring the installation and operation of the stormwater capture and treatment system. E&E trenched and installed approximately 1,000 lf of 8", 12" and 15" HDPE pipe, several parking lot stormwater collection boxes, a 13,000 gallon above ground storage tank, 2 x 8,000 gallon underground storage tanks and a 100 gal/min containerized Chitosan Enhanced Sand Filtration (CESF) treatment system, including trenching and installing electric power for the pumps and controls.

MAIN TASKS

- E&E performed as the design build project coordinator managing the design engineers and treatment system provider.
- E&E applied for and received the City of Santa Ana permits to construct the system.
- Trenching and installing pipe and stormwater receptors in the various employee parking lots.
- Installed 2 x 8,000-gallon concrete underground storage tanks.
- Installed a 13,000 gallon above ground poly tank.
- Installed a 40' sea container which housed the pumps and controls for the treatment system.
- Installed 4 x 1,000-gallon Chitosan sand filtration vessels.
- Piped and connected all equipment.

- Installed a power panel in the building then trenched and installed underground electric to the treatment system, then wired and connected all electrical equipment via a sub panel installed at the treatment system.

CHALLENGES

It was essential to keep the facility operating while trenching through their various parking lots, driveways and into the manufacturing facility. The project required removal & replacement of a 30' long powered security gate along with removal and replacement of the parking spaces where the underground storage tanks are located. Using a slide-rail shoring system, E&E excavated to a depth of 14' below ground surface and installed 2 x 8,000-gallon underground storage tanks which are used for storage and sediment entrapment.

INTERESTING POINTS

The work was performed in a fully active facility requiring careful planning to avoid disruption to operations.

Project was implemented during rainy season. Implementation of robust and effective bmps enabled all work to be executed without conditions adversely impacting the areas of construction.

Due to the water table, the tank design required modification, in turn requiring E&E to redesign shoring in the field.



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