Colton Distribution Center Bldg 1

Colton, California

Stormwater Management

Engineer:
Thienes Engineering

Contractor:
Boudreau Pipeline

Installation:
2020

Nicknamed “Hub City,” Colton, California, is home to the Colton Crossing, which was built in 1833 and was one of the busiest at-grade railroad crossings in the United States. Commerce and traffic will dominate this development’s surface, leaving limited space for largescale stormwater systems.

Technical Description:

- Debris Separating Baffle Box® Separators
- UrbanPond® Concrete Detention System
- (3) Modular Wetlands® Linear Bioretention Systems

Thienes Engineering, the Engineer of Record, was chosen to engineer the site and provide the most efficient solutions. Thienes had their work cut out for them. Colton’s land premiums are a driving force in designing stormwater solutions within a minimal footprint. Tricky soil conditions and the need to address pollutants of concern, such as oil, grease, total suspended solids (TSS), trash, debris, and metals, along with meeting the regulations of the Santa Ana Regional Water Quality Board NPDES Permit and the County of San Bernardino Water Quality Management Plan was also a challenge.

A treatment train consisting of the Debris Separating Baffle Box (DSBB), UrbanPond® stormwater storage system, and Modular Wetlands® Linear was specified. The UrbanPond, a traffic-rated underground stormwater storage system, was designed with considerations such as height of cover, live and dead loads, proximity to adjacent structures, and required detention volume. This land-saving precast storage system allows for development above grade while providing stormwater storage below grade. UrbanPond modules are quick and easy to install, and in this project, UrbanPond LinkUP slabs were used, reducing the number of precast modules needed without compromising storage. LinkUP slabs replace a complete

module, roofing the gap when surrounded by four other UrbanPond modules.

Upstream of the UrbanPond is a DSBB hydrodynamic separator that reduces flow velocity and separates floatables like trash, debris, and oil; and settleable particles such as sediment. The DSBB pretreats the stormwater and supports the entire connected systems' efficiency and long-term maintenance costs.

Downstream of the UrbanPond are three 10'x20' Modular Wetland Linear bioretention systems. The Modular Wetlands will treat downstream flows from the UrbanPond for TSS, heavy metals, hydrocarbons, and more. The systems were engineered and sized for the required treatment flow rates, working together as a treatment train to address pollutants of concern and meet local regulations. This stormwater project in Colton represents the ability to engineer a creative treatment train system that satisfies local regulations while meeting unique challenges and site constraints.