

TxDOT interstate highway rest stop wastewater system

David Venhuizen designed a high performance biofiltration (recirculating gravel filter) treatment system and drip irrigation effluent dispersal system for two rest stops on Interstate Highway 37 between San Antonio and Corpus Christi, one serving northbound lanes and one serving southbound lanes. These are the most highly used rest stops in Texas. A significant design challenge was to assure that the system could respond to highly variable flows generated by variable pattern of rest stop usage. The treatment system incorporated tanks used in the pre-existing wastewater system, adding only the filter bed containment tanks and a reclaimed water holding tank.

The subsurface drip irrigation system was integrated into landscaping plan. It composed the drip irrigation for the portion of the “island” between the truck parking area and the auto parking area from the entry end of the rest area to the restroom building, which lay about halfway between the entry and the exit ramps. The other half of the “island” is irrigated through a surface spray system, also designed by Venhuizen, which is fed by the potable water system. The two irrigation systems mesh seamlessly, using a unified control system. The drip field feed system provides capability to add makeup water to provide irrigation in excess of what is produced by the wastewater flow in the peak irrigation season.



The Treatment Center Filter Beds at the Northbound Rest Stop



Entry Monument – Northbound Rest Stop
All this landscaping up to the buildings is the drip irrigation field