



WOOD RODGERS, INC. | HYDRAULIC STRUCTURES

Wood Rodgers structural engineering staff of design professionals have substantial experience with the structural design of various types of hydraulic and environmental liquid containing structures. Our staff has provided engineering services for water districts, municipalities, private development, and specialty design-build contractors. These projects include water and wastewater treatment plants, dam spillways, fish ladders, storm water pump stations, sewer lift stations, hydraulic containment vessels, control buildings, and maintenance service platform structures. Whether it is the design of new facilities or the retrofit design of existing structures, our solutions always feature practical and economical design solutions. Wood Rodgers prepares structural assessment reports which entails the on-site review of components, surveying, as-built document preparation and review, structural analysis modeling, testing of materials, and the summary report of retrofit recommendations.

“Wood Rodgers was able to listen, address and incorporate District’s comment into design and construction contract documents.

The quality of the content in the structural plan sheets is very good and detailed. ”

—Moses Tsang, Flood Control Design
Alameda County Public Works Agency



BERT CRANE WASTEWATER TREATMENT FACILITY

Atwater, California

Wood Rodgers provided structural engineering design for the City of Atwater’s new Regional Wastewater Treatment Plant (WWTP). The new plant was required to increase average flow capacity to 6 mgd (expandable to 12 mgd ultimate) and comply with new regulatory requirements for advanced treatment. Constructing a new WWTP allowed the City to replace aging facilities, eliminate odor problems for commercial businesses and nearby residents, eliminate chemical deliveries through the heart of town, and make valuable land available for other City or community uses. Their resulting efforts were successful with a \$42 million construction project finishing with less than 0.3 % in change orders. In addition, construction was completed six months ahead of schedule. The structures designed include, but are not limited to: Headworks including screening, grit removal and odor control provisions; Two biological nutrient removal oxidation ditches with secondary clarifiers; Effluent filtration/UV disinfection facilities; Office/laboratory space; and Sludge digestion / dewatering facilities, including cake storage.

REDWOOD CREEK CHANNEL IMPROVEMENTS

Redwood City, California

The reaches were constructed in the 1960s as rectangular reinforced concrete channels. The concrete walls have been rotating inward and the City has had to resort to steel struts to reinforce them. Wood Rodgers provided structural assessments for the channels, prioritized the sections that need to be replaced, and to develop improvement strategies and plans, specifications, and cost estimates for two of these channel reaches. Wood Rodgers developed a Basis for Design Report to document the structural assessment, the prioritization of reaches, and alternatives for improvements. The alternatives included replacing the walls only, replacing the whole channel sections, placing sheet piles with a Giken sheet pile presser, capping the channel with a concrete ceiling, flow bypasses to replace the channel, reinforcing the sections inside the channel with detention to mitigate impacts, and others.



BROOKTRAILS LAKE EMILY DAM AND IMPROVEMENT

Mendocino, California

Wood Rodgers provided structural retrofit detailing to replace the existing stop log spillway with an Obermeyer Hydro operable bladder gate system which required the addition of new retaining structures. The new spillway and abutments were supported on matt foundation and steel piles. The reservoir earthen dam crest was raised 3'-0" to increase storage capacity to 251 acre feet.



CACHE CREEK CASINO WASTEWATER TREATMENT FACILITY

Lodi, California

Wood Rodgers provided structural design and construction support services for the expansion to 350,000-gpd Cache Creek Casino Wastewater Treatment Facility. Project challenges included delivering a fast track \$5 million project within nine months and providing structural designs to accommodate extremely tight site conditions which required innovative design and construction coordination.



STORM PUMP STATION REHABILITATION PROJECTS: D02, D09, D01, & D45

Sacramento County, California

Wood Rodgers provided design, construction, and startup support services for mechanical and structural elements for four of Sacramento County's storm drain pump stations were built as far back as the mid-1950s and had not been upgraded since that time. Designs included redundant monitoring systems for wet well level, replacement motor controls, backup power systems, and motorized actuators for the existing slide gates to meet modernization requirements for all four storm water pump station facilities.



AMERICAN CANYON ULTRAFILTRATION WATER TREATMENT PLANT

Napa County, California

Wood Rodgers served as the structural engineer of record for this 6.0 MGD ultrafiltration water treatment plant, which provides drinking water for the residents of American Canyon. The structural design included a 150,000-gallon above-grade concrete water treatment tank; below-grade pipe chase system; and masonry enclosed in a pre-engineered metal building structure with a bridge crane that is able to operate over the footprint of the entire facility.



WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
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