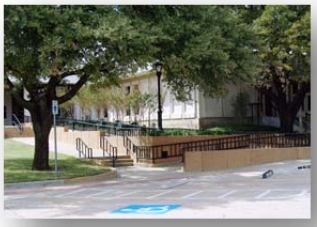
Civil Engineering



City Hall ADA Ramp – Grand Prairie, TX

Project involved the design of a new ADA ramp for Grand Prairie's City Hall. Services included land planning, storm sewer installation, site erosion control planning, traffic control planning and construction oversight.

Specific design features required by the city included "matching" the appearance of the new ramp to the existing architecture facade of the city hall building and match the construction type of retaining walls, handrails and light fixtures, etc.

The completed project achieved the city's requirements and exceeded construction and aesthetic expectations.

Cooper Square Addition Land Planning and Development – Mansfield, TX

Prepared Master Development Plan for a 16.8-acre tract of land that included the design layout of storm drain facilities, water distribution system, sanitary sewer services, franchise utility layout, and overall mass grading design. The Master Plan provided for subdividing the tract into specifically zoned parcels of land (lots) conducive toward retail/office, retail and medical offices. Other civil engineering tasks included hydrological/hydraulic studies, permitting access driveway & Traffic control plan for State Highway 157, geotechnical studies and pavement design.

The development of Cooper Square Addition is ongoing. Construction plans for the future construction of a banking facility have been prepared. Other facilities within the development include retail centers, and a pharmacy. As development continues, JEA HydroTech will be at the forefront as the lead consulting firm engaged in design, as well as, project and construction management.

Cavender's Boot City – Hurst, TX

Development documents were prepared for grading and drainage, storm drain system's utilities, landscape and irrigation, paving design and traffic control concerns during construction. Other related documents included geotechnical studies and erosion control plans under TCEQ regulations. Public works improvements included preparing construction documents for the design and construction of a 24" RCP Main Storm Drain (SD). The construction of the new SD system was made a part of the overall project development.

Elevated Water Storage Tank and System Improvements, Rollins Hills Estates - Parker County, TX

Performed an analysis of the existing water storage, supply, pumping, and distribution system for the residents of Rollins Hills Estates. We determined that the water distribution system should be comprised of two (2) pressure planes. Water was originally supplied from two wells. The total storage for the community was insufficient to supply the demands of the residents. The in line booster pumps had no redundancy in the system. The 6" water lines serving the residents were found to meet the minimum fire flow requirements. It was recommended that a 150,000 gal. elevated storage tank be constructed. The design was performed to construct the recommended elevated storage tank, eliminate the two existing booster pump stations, and add two additional 10 HP pumps to the existing two pumps now serving the existing system.

Impact Fee and Capital Improvements Study - Corinth, TX

Evaluated the current impact fees and determined maximum future fees based on a detailed technical study including projected growth and needed facilities. Interacted with the Citizens Advisory Committee, Planning and Zoning Commission in workshops and public hearings leading to the City Council adopting the impact fees at a Public Hearing.

Water Treatment Plant Expansion - Newport, TN

A Water Treatment Plant Expansion project in Newport, Tennessee, required designing specific components. The new plant components included a backwash basin, flocculation basin, and settling basin. The engineering scope of services included sizing plant components, providing the structural details for each of the components foundation supports, piping system design, and overall utility layout and distribution.

Wagon Wheel Park Irrigation Paluxy Well - Coppell, TX

Worked closely with the City of Coppell and other consultants to identify site constraints, regulatory requirements, and design alternatives for the development of a site plan. Based on criteria established and data gathered, construction plans and specifications were prepared.

Two Irrigation Paluxy Wells - Argyle, TX

Planning, design and development of two Paluxy wells to provide irrigation water to two (2) sites. Worked closely with G&A Consultants, the Argyle Independent School District and other consultants to identify site constraints, regulatory requirements, and design alternatives for the development of a site plan.

Water System Analysis - Flower Mound, TX

Assembled data used for a computer model to evaluate the City's water supply, ground storage, pumping, distribution, and elevated storage. Availability and cost of water supply sources for the projected needs of the fast growing town evaluated. Report of recommended and needed improvements for use in adopting impact fees prepared.

Corinth Trinity Well - Corinth, TX

Analyzed water well yield data for the proposed Trinity Well. Bid documents prepared for the 1,600-foot deep, 10" casing gravel wall well. Assisted the City staff with the bidding process, evaluation of bids, award of contract, construction administration, pump selection, and final inspection.

SRF Preliminary Feasibility Report - Corinth, TX

Studied historical populations and projected trends; wastewater flows; existing and needed system capacity; alternative plans for improvements; permitting social and environmental issues. Prepared recommendations for action with cost projections and projected schedule for upgrading the City's wastewater collection system.

Water Impact Fee Update - Carrollton, TX

Water use-data and the water network analysis computer model for the population served by the City of Carrollton Water Department reviewed and updated. Recommendations made for separating the four pressure planes within the service area, and the mode of providing water supply to each.

Wastewater System Study - Corinth, TX

Numerical spreadsheet model of the City's wastewater collection system developed to evaluate the system's performance under current and future population loads. Prepared Engineering reports outlining recommendations for improving the collection system to adequately serve present and future population.

Kmart Plaza – Hurst, TX

Design Plan documents were prepared for the extension of 500 L.F. of a Storm Drain System within the Right-of-Way. Related project activities included sizing of storm inlets, route surveying, hydrological analysis and associated geotechnical studies. The complete system was installed primarily to serve the Kmart Plaza.

Greenville Industrial Air Park, Phase II - Greenville, TX

Project included preparation of plans and specifications for constructing 3,000 LF of gravity sewer line. Project also included designing a new Lift Station, based on future sewer flows, population served and land use assumptions. Wet well size selected; the pump and pump settings were designed to satisfy system demands and TCEQ rules and regulations.

Fourth Avenue Church of Christ - Dallas, TX

New 8" AWWA 900 water line designed. The new line design considered reconnection of existing service lines and installation of new services. Specifications for valves, ductile iron fittings, trenching, and traffic control devices were made a part of the complete project.

The project also included the preparation of civil engineering plan documents and construction documents for a new gymnasium facility. Engineering services included a site development plan; grading/drainage plan; erosion control plan; preparation and submittal of a Storm Water Pollution Prevention Plan; geotechnical investigation; and a Boundary Survey.
RE: City Plan #S034-288

I-30 North Frontage RD (Sayle - Terrell RD) - Greenville, TX

Project included designing a new Lift Station of (518,400 GPD pumping rate), 850 LF of 6" force main and 3,500 LF of 8" gravity sewer. The design of the Lift Station was based on projected sewer flows, population served and land use assumptions. Hydraulic modeling of the proposed system, in connection with other pumps on the same force main, was performed. Wet well size was selected; the pump and pump settings were designed to satisfy system demands along with TNRCC (TCEQ) rules and regulations. The complete project included preparing plan/profile documents and construction specifications.

Ore City Elementary School Lift Station, Ore City, TX

Designed Lift Station for a sanitary sewer system serving an elementary school. Determine pump sizes, flow, elevations, size of force main and required volume of wet well. Investigated soil types, water table, and calculated uplift forces on the lift station.

Pinnel Pointe Lift Station, Corinth, TX

Projected served population and hydraulic loading based on estimated gallons per capita per day (GPCD) and infiltration & inflow (I&I). Computed system curve for various operating conditions and selected duplex pumps. Evaluated buoyancy for this 30-ft deep lift station near Lake Lewisville. Prepared construction documents and reviewed shop drawings.

Coram Deo Academy Lift Station, Flower Mound, TX

Estimated present and future flows based on levels of development and designed lift station based on projected hydraulic loads. Performed value analyses of total project cost (Construction plus present worth of operations and maintenance) for the selection of optimum pumps and force main combinations. Prepared plans and specifications and reviewed contractors and suppliers submittals.

Big Green Car Wash Machine – North Richland Hills, TX

Project involved converting an existing automotive repair shop into a modern automated car wash facility incorporating detail bays and vacuum areas.

The modifications to the existing building consisted of demolishing portions of the interior reinforced concrete floor system and constructing a new reinforced concrete support system to accommodate the latest service equipment. Existing steel structure components were removed and replaced with new steel members in order to meet new span and load requirements.

Civil Engineering services included preparing site development plans involving storm water system design, public work utilities, providing franchise utility layouts, meet State and Federal erosion control regulations, designing reinforced concrete pavement plans for parking area and ADA accessible concrete sidewalks and coordinate permit requirements with the City of NRH and TxDOT. The project traffic control needs mandated extensive coordination with both the Cities of NRH and Hurst incorporating their complete specifications. In addition, rules and regulations governing traffic concerns along Texas' rights-of-way were also considered in the plan layout.

To enhance the development's design, a "green" theme was realized through a most creative landscape feature surrounding the facility.

BEFORE

AFTER

Kwik Industries - Dallas, TX

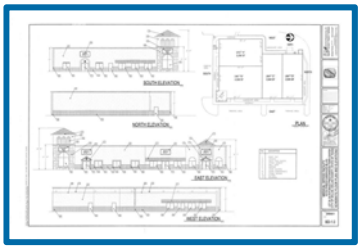
Prepared civil engineering design plan documents for the construction of Car Lube & oil maintenance facilities, Dry Cleaning/Laundry buildings and Car Wash facilities. Engineering documents were prepared for numerous sites in 100 cities and 39 counties within the State of Texas.

Engineering services included preparing complete site development plans consisting of: demolition plans; grading & drainage; detention ponds; storm drain systems; site utilities (water and sanitary sewer systems); lift stations; paving design; erosion control plans; SWPPP; landscape and irrigation plans; traffic control plans; channel design; culvert design; and, flood studies.

Overall services included foundation support system design; structural steel framework; masonry wall plans; and, performing geotechnical investigations.

Recent project in Frisco, TX performed under a “Design/Build” agreement, developed a new commercial tract. Site development consisted of: stabilizing the support soil mass involving reinforced earth applications; designing and constructing a reinforced concrete foundation system to support a 5,000 sq. ft. Dry Cleaning retail building; and, designing and pouring a new reinforced concrete paved parking area (approx.. 8000 sq. ft.) to serve the new facility.

Medical Plaza Facility – Dallas, TX



Engineering services included preparing complete site development plans consisting of site utilities; paving; storm drain design; and, parking area layout and design. As part of our overall services we prepared construction documents for the design and layout of a 10,000 sq. ft. single building, with included the architectural layout design; building steel framework; structural design; and, mechanical, electrical and plumbing systems.