



Murfee Engineering Company, Inc.

General Statement Of Qualifications

November 2010

MURFEE ENGINEERING COMPANY, INC.

Murfee Engineering Company, Inc. offers a full range of civil and environmental engineering services. Qualified and experienced individuals who are well versed in numerous disciplines staff MEC. The successful integration of staff expertise with innovative planning and design enables MEC to provide services to private interests, governmental agencies, and municipal utilities on a cost-effective basis.

Mr. George Murfee established MEC in 1978. Mr. Murfee operated the firm as a sole proprietor until 1983 when Murfee Engineering Company, Inc. was organized with Mr. Murfee as owner and president. Since that time, the firm has grown considerably in size and capabilities and today, MEC provides consulting engineering services for both moderate and large-scale projects. Areas of practice include: site assessments and feasibility studies; site development planning, design and permitting; infrastructure design including major roadways, drainage and utility improvements; municipal utility district engineering including creation and bond reports, system design and permitting; and technical support for facility operations. Areas of expertise include: modeling, analysis, and design of regional water and wastewater systems; modeling, analysis and design of flood control, stormwater detention and water quality structures; roadway design; and permitting of projects at the local, state and federal levels.

Murfee Engineering Co., Inc. is currently registered with the TBPE, Firm #353

The following provides the employee profile of MEC.

<u>Classification</u>	<u>Number of Employees</u>
Registered Professional Engineers	8
Engineers in Training	1
Engineering/Drafting Technicians	5
Project Administration	2
Administrative/Accounting Personnel	3
<hr/> Total MEC Employees	19

The following is a selected list and description of MEC’s representative projects.

MASTER PLANNING SERVICES / SITE DEVELOPMENT



LCRA Office Complex, Park Street Site - MEC provided all site engineering for the major remodel and expansion of the Lower Colorado River Authority (LCRA) office complex. Work included drainage and hydrology analysis designs; grading, curb and gutter, and paving designs; water and wastewater utility designs; other utility designs; and approvals. The LCRA office complex incorporates demonstration sites for “best management practices” in the treatment of non-point source runoff. MEC designed these facilities and assisted in obtaining a grant from the Texas Natural Resources and Conservation Commission Grant to fund the construction of the pilot facilities.

St. John Neumann Catholic Church - a 30-acre church campus within the City of West Lake Hills. MEC assisted the Church in realizing its goal of expanding its ministries through the acquisition of a new site and replacement of its undersized facilities. MEC’s work included an initial assessment of the property, preparation of preliminary studies and constraints analysis, floodplain analysis, and preparation of conceptual utility, parking, grading and building plans for the church. MEC prepared the subdivision plat for the property and construction and permitting documents for the project’s site improvements. The recently completed phase one project consists of a 500-seat assembly building and 30,000 sf pastoral center.

Texas Industries, Inc. (TXI) - TXI, a major developer of gravel and material processing for the Central Texas region, retained MEC to prepare construction plans and permit applications for a large-scale mining operation along the north bank of the Colorado River. MEC provided site and drainage designs, permit applications and processing of approvals. MEC also provided support documents and participated in public hearings

before city boards and commissions to secure approvals of the necessary variances for the project.

Riverbend Baptist Church - a 40-acre church campus located along Loop 360 in the sensitive Hill Country of west of Austin. MEC has been the engineer-of-record since 1985 for the Riverbend Church. MEC's work has included the preparation of overall utility, parking, grading and building master plans for the church. MEC has prepared construction and permitting documents for all site improvements including the recently completed 4000-seat assembly building. Work has included hydrology and floodplain analysis; stormwater filtration design; grading and parking design; water and wastewater utility designs; governmental approvals; and construction support.

The Forum - a 14-acre health/retirement center in Austin. Work included drainage and hydrology analysis designs; grading, curb and gutter, and paving designs; water and wastewater utility designs; other utility designs; approvals; and construction support.

Cielo - a 30 acre commercial building project for 287,000 square feet of office space in Austin. Work included drainage and hydrology analysis designs; grading, paving designs; water and wastewater utility designs, (including a lift station); other utility designs; approvals; and construction support.

Waterford Centre - a 38-acre commercial/retail project located in Austin at the intersection of US 183 and FM 1325. Work included engineering support for the creation of a public improvement district to finance the improvements; drainage designs; roadway designs; water and wastewater utility designs; off-site utility designs; additional lanes on FM 1325; and approvals.

Eanes ISD Stadium – MEC was retained by the District to provide civil engineering services for the renovation and expansion of the stadium at Westlake High School. The services included utility relocation, drainage design, and permitting.

Westlake High School 9th Grade Addition - MEC was retained by the District to provide civil engineering services for the expansion of the Westlake High School to incorporate a ninth grade center. As part of this work, MEC collaborated with the District's architect, planner and traffic consultant in the preparation of a masterplan for the 25-acre campus. The masterplan was prepared based on the projected enrollment growth and programmatic needs of the District. MEC's work included an analysis of the existing and projected utility demands, drainage facilities, roadways, parking, and physical education facilities of the campus. MEC also prepared construction plans for the major utility, drainage, parking and play fields for the ninth grade center.

Lake Travis ISD Stadium - Design of site grading, water, wastewater, and drainage improvements and provided construction administration. Prepared detailed construction plans, contract specifications and cost estimates. Processed the project through review and approval.

Bank of the West - a commercial building project for 46,500 square foot bank building in Austin. Work included hydrology analysis; grading, curb and gutter, and paving designs; water and wastewater utility designs; a large retaining wall and fill design; approvals; and construction support.

Limecreek - a 14-acre commercial site for a State Department of Highways and Public Transportation maintenance facility located at Cedar Park, Texas. Work included hydrology analysis; drainage and detention designs; grading, curb and gutter, and paving designs; water and wastewater utility designs; coordination of surveying; approvals; and construction support.

Pflugerville Hall - a four-acre commercial building project for a 10,000 square foot community center in Pflugerville, Texas. Work included supervision and coordination of grading and drainage; water and wastewater utilities; approvals; and site and building construction support.

Del Valle Correctional Facility - Expansion of the Del Valle Detention Facility for Travis County. Work included planning, survey coordination, water and wastewater system design, site grading and drainage, off-site utility coordination, and approvals.

City of Austin Airport Master Plans (Manor Site) - This project consisted of master plan preparation for the proposed airport. Murfee Engineering was responsible for the grading and drainage and utilities preliminary design and cost estimates. The grading and drainage elements included a hydrologic and hydraulic analysis of Wilbarger and Cottonwood Creeks and their tributaries affecting the airport site. A preliminary detention analysis situated stormwater detention ponds to serve the airport site at a fully developed condition. The TR-20 and HEC-2 computer programs were used for this study.

SUBDIVISIONS



Rutherford West Subdivision is a 292-lot residential development on a 650-acre tract located within the Onion Creek watershed. The proposed subdivision is immediately adjacent to and north of FM 967, approximately 1.7 miles east of the FM 967/FM 1826 intersection. The subdivision is located within the Edwards Aquifer Recharge Zone. Work included planning, platting, permitting; design of drainage, water quality improvements, water lines, roadways; preparation of Water Pollution Abatement Plan (WPAP), Organized Sewage Collection System Plan (SCS), Stormwater Pollution Prevention Plan (SWPPP), contract documents; project management and processing applications through Dripping Springs and Hays County. This project has been designed in accordance with the U. S. Fish and Wildlife Service Recommendations for Protection of Water Quality of the Edwards Aquifer.

Rim Rock development consists of 167 single-family lots. The 316-acre subdivision is located in North Central Hays County within the Bear Creek, Little Bear Creek and Onion Creek Watersheds. The location of the development is immediately adjacent to and southeast of FM 1826, approximately 4.3 miles south along FM 1826 of the Travis/Hays County Line. A portion of this development is located within the Edwards Aquifer Recharge Zone and Contributing Zone. This project has been designed in accordance with the U. S. Fish and Wildlife Service Recommendations for Protection of Water Quality of the Edwards Aquifer. Work included planning, platting, permitting; design of drainage, water quality improvements, water lines, roadways; preparation of Water Pollution Abatement Plan (WPAP), Organized Sewage Collection System Plan (SCS), Stormwater Pollution Prevention Plan (SWPPP), contract documents; project management and processing applications through review and approval.

Gilbert Lane Subdivision – a 645-lot, 164 acre residential subdivision located in the two-mile extra-territorial jurisdiction of the City of Austin. The subdivision is located north of FM 969 east of FM 973, 2,500 feet north of the intersection of FM 969 and Gilbert Road. Work included preliminary environmental assessment; planning; survey

coordination; platting; hydrology analysis; drainage, detention and sedimentation design; street design; water and wastewater utility design; off-site roadway improvements including a left turn lane on FM 969, off-site utility coordination, and preparation and processing of a FEMA Letter of Map Revision (LOMR).

Esquel Subdivision – a 163-lot, 111 acre residential subdivision in Austin, Texas. Work included planning and design of all infrastructure improvements including the extension of Escarpment Blvd., a four-lane, divided collector street, from SH 45 to Danz Creek. Extra consideration was required as the project is located over the Edwards Aquifer Recharge Zone.

Onion Creek Addition is a 300-lot residential subdivision located in Austin, Texas. Work included planning, platting and design of all infrastructure improvements including a major bridge over Onion Creek, 9-hole addition to the golf course, and replacement of development's wastewater effluent holding pond.

Parkside Subdivision – a 292 lots, 69.71 acre residential subdivision located on Lindell Lane east of Decker Lane in Austin, Texas. Work included planning, platting, preliminary design of infrastructure and processing the proposed subdivision through review and approval.

Springbrook - a 1,600-acre mixed use subdivision located near Austin, Texas. Work included preliminary environmental assessment; planning; survey coordination; platting; hydrology analysis; drainage, detention and sedimentation design; grading, sidewalk, and street design; water and wastewater utility design; and off-site utility coordination.

Springbrook Center - a 650-acre mixed use subdivision located near Austin, Texas. Work included preliminary environmental assessment; planning; survey coordination; platting; hydrology analysis; drainage, detention and overtopping analysis; grading, sidewalk, and street design; water and wastewater utility design; and off-site utility coordination.

Springbrook One - a 130-acre mixed use subdivision located north of Pflugerville, Texas on the Pflugerville Loop. Work included preliminary environmental assessment; planning; survey coordination; platting; hydrology analysis; drainage, detention and sedimentation design; grading, sidewalk, and street design; water and wastewater utility design; and off-site utility coordination.

Wildhorse Ranch PUD Land Plan Revision is a 1,899 acre mixed use Planned Unit Development located in the limited purpose jurisdiction of the City of Austin. The project is located approximately 2,400 feet south of Hwy 290 at SH 130. The proposed revision to the PUD Land Plan was to incorporate the extension of SH 130, the extension of Parmer Lane through the tract and associated land use changes due to these extensions. Work included planning, survey coordination, hydrology analysis, street design, drainage and detention design, and water and wastewater utility design for this development and

for the region. Project also included processing the proposed revision through review and approval.

Vizcaya Subdivision is a proposed 1,058 acre residential community located in western Travis County on the south shore of Lake Travis. A total of 497 units are proposed consisting of single family lots and villas. Amenities for the project include a golf course club, and marina. Work included preliminary environmental assessment; planning; survey coordination; platting; hydrology analysis; drainage, detention and sedimentation design; street design; water and wastewater utility design; off-site roadway improvements and off-site utility coordination.

Rocky Creek Subdivision consists of 468 single family lots, 11 greenbelt lots, one utility lot, and a parkland lot on 468 acres. The project is located on Hamilton Pool Road (R.M. 3238) in Travis County. Work included land planning, platting, drainage study, detention analysis, hydrology analysis, street design, water and wastewater utility design, and processing applications through review and approval.

Avana Subdivision (Spillar Ranch) is a 1,000-acre mixed-use development located south of SH45 at Escarpment Blvd in Austin, Texas. The project Proposes 650 single family homes, an 18-hole golf course, and resort hotel. Work included land planning, environmental analysis, platting, drainage and detention study, hydrology analysis, street design, water and wastewater utility design, and processing applications through review and approval.

Counts Estates development consists of a 150.55-acre, 101-lot single-family development within the boundaries of the corporate city limits of Dripping Springs and within the Onion Creek Watershed. The development is located south of Butler Ranch Road and east of its intersection with RR12. Work included planning, platting, permitting; design of drainage, water quality improvements, water lines, roadways; preparation of Water Pollution Abatement Plan (WPAP), Organized Sewage Collection System Plan (SCS), Stormwater Pollution Prevention Plan (SWPPP), contract document; project management and processing applications through review and approval.

Hall Tract Development Agreement and Concept Plan is a project located on Ranch Road 12 in Dripping Springs, Texas. The project consists of 104 single-family lots, 5 commercial lots, 8 greenbelt lots and 1 parkland lot on approximately 157 acres. Work included planning, drainage analysis, preparation and processing of development agreement and concept plan through the approval process of Dripping Springs, project management, and coordination with Dripping Springs and adjacent property owners.

Wells Branch Nature Park Subdivision and Site Plan proposes a nature trail located at Wells Branch Parkway and Wells Port Drive in Austin, Texas. Work included detention and water quality design, designing the trail to meet accessibility requirements, permitting and processing the subdivision and site plan applications for review and approval. Project scope included the design of alternative water quality and detention methods for the proposed development.

Circle C Subdivision - a 4,500-acre mixed use subdivision located near Austin, Texas. Work included preliminary environmental assessment; planning; survey coordination; platting; hydrology analysis; drainage and filtration design; detention and overtopping analysis; grading, sidewalk, and street design; water and wastewater utility design; and off-site utility coordination.

Rob Roy - a 1,500-acre mixed use subdivision located near Austin, Texas. Work included planning; survey coordination; platting; hydrologic analysis; drainage and filtration design; grading, and street design; water utility design; and off-site utility coordination.

Spanish Oaks Subdivision – a 1,300 acre mixed use subdivision located in western Travis County. Work includes preliminary environmental assessment; planning; survey coordination; platting; hydrologic analysis; drainage and filtration design; detention and overtopping analysis; grading, street design; water and wastewater utility design; and off-site utility coordination.

Falconhead Subdivision - a 440 acre mixed use subdivision located in western Travis County. Work includes preliminary environmental assessment; planning; survey coordination; platting; hydrology analysis; drainage and filtration design; detention and overtopping analysis; grading, street design; water and wastewater utility design; and off-site utility coordination.

Round Rock Ranch - a 363-acre mixed-use subdivision located east of Round Rock on Gattis School Road. Work included planning; survey coordination; platting; hydrologic analysis; drainage, detention and sedimentation design; grading, sidewalk, and street design; water and wastewater utility design; and off-site utility coordination.

Bohls Ranch - a 1,100-acre mixed use subdivision located near Austin, Texas. Work included planning; survey coordination; platting; hydrology analysis; drainage and filtration design; grading and street design; water utility design; and off-site utility coordination.

STORMWATER QUALITY

There is a growing interest across the country to protect and preserve our natural resources. This interest and concern is generating guidelines and regulation aimed at the identified sources of pollution.

Murfee Engineering Company (MEC) has been tracking the ongoing development of rules and regulations at both the federal, state and local levels, and has been involved in assisting these entities with reviewing, planning and developing appropriate stormwater regulations. To ensure compliance, MEC has kept close attention to the Edwards Aquifer water quality rules, the Environmental Protection Agency's NPDES and now the TPDES Construction General Permit and the Municipal Separate Storm Sewer System (MS4) Permit.

The control of stormwater pollutants from new development projects is attainable through the institution of ordinance and code which mandates the use of either vegetative or structural controls and other design/construction methods. However, the control of stormwater quality from existing development, especially urbanized areas, can be both costly and disruptive and requires careful planning and implementation.

MEC has a uniquely thorough background in the planning, design and implementation of controls for stormwater quality. Our continuous involvement with the Texas Commission on Environmental Quality (TCEQ) and Lower Colorado River Authority (LCRA) and its staff on behalf of other state agencies, local/regional government and private sector clients have given MEC an insight into the process and timely implementation of cost effective project development.

In the past, MEC has demonstrated the ability to work in concert with experts in the field of Municipal and State law to develop regional implementation plans which took into account financial restraints and planning goals, yet offered the flexibility necessary to adjust to the ever changing financial and regulatory environment.

MEC would appreciate the opportunity to discuss these issues with you. We would enjoy the opportunity to share our knowledge and insight at your convenience and to offer our services to help you plan for the needs of your community.

Water Quality Projects

Circle C Subdivision – Designed bioretention sites and over 2 dozen sediment/filtration ponds to meet City of Austin water quality regulations. Prepared Edwards Aquifer Water Pollution Abatement Plans (WPAP) and Sewage Collection System Plans (SCS) to meet TCEQ requirements.

LCRA General Office Complex – Designed innovative water quality controls based upon LCRA's Lake Travis NPS Ordinance. Design included both structural and vegetative controls. Structural controls included extended detention ponds, peat-sand filters, and

wet ponds. The ponds were retrofit to serve existing structures as well as new construction.

CCNG Spanish Oaks Development – Designed retention/irrigation ponds with stormwater detention features to capture the peak flow of multiple storm events and utilized vegetative filter areas to meet LCRA and City of Bee Cave NPS Ordinance. Prepared Edwards Aquifer Contributing Zone Plans to meet TCEQ requirements. Prepared NPDES General Construction Permit Stormwater Pollution Prevention Plans (SWPPPs) to meet EPA requirements.

Falconhead – Designed retention/irrigation ponds with stormwater detention features to capture the peak flow of multiple storm events and utilized vegetative filter areas to meet LCRA and City of Bee Cave NPS Ordinance. Prepared Edwards Aquifer Contributing Zone Plans to meet TCEQ requirements. Prepared NPDES General Construction Permit Stormwater Pollution Prevention Plans (SWPPPs) to meet EPA requirements.

Georgetown Village - Designed sedimentation/filtration ponds with stormwater detention features to capture the peak flow of multiple storm events and utilized vegetative filter areas to meet TCEQ Edwards Aquifer Standards. Prepared Edwards Aquifer Water Pollution Abatement Plans (WPAP) and Sewage Collection System Plans (SCS) to meet TCEQ requirements.

TCEQ Edwards Aquifer Rules - Technical Guidance on Best Management Practices Participated on the committee to develop and draft the USFWS September 1, 2000 and November 27, 2002 Recommendations For Protection of Water Quality of the Edwards Aquifer.

US Fish and Wildlife Service Consultation - Obtained approval from USFWS that the development plans of Rutherford Rim, Rutherford West and Greenhawe, located in the recharge and contributing zones to the Edwards Aquifer in Hays County are not likely to adversely affect any threatened or endangered species.

ROADS AND STREETS



Gilbert Road Paving and Drainage Improvements – Work included paving and widening approx. 2,800 lf of an existing county road. The improvements included the addition of ribbon curbs, striping and a 24- barrel, 5'x2' box culvert. Construction had to be done under traffic as the road was the only access for adjacent properties including water wells of the City of Manor.

Southwest Williamson County Road District #1 - 4.7 miles of four-lane arterial and intersection improvements located northwest of Austin, Texas at the intersection of US 183 and RM 620. Work included street and drainage design, approvals, and construction support.

Hannon Lane - 2.0 miles of four-lane arterial in the Circle C subdivision, Austin, Texas. Work included street and drainage design, approvals, and construction support.

Escarpment Boulevard - 2.4 miles of four-lane arterial in the Circle C subdivision, Austin, Texas. Work included street and drainage design, approvals, and construction support.

Arterial 12 - 2.2 miles of four-lane arterial in southwest Austin, Texas. Work included roadway and drainage design, approvals, and construction support.

MoPac South Extension (Loop 1) - 5.5 miles of freeway section in south Austin, Texas. Work included roadway and drainage design and utility relocation.

Slaughter Lane (from 1826 to Brodie Lane) - 2.5 miles of four-lane major arterial roadway in Austin, Texas. Work included street and drainage design, approvals, and construction support.

Slaughter Lane (from Brodie Lane to IH-35) - 3.1 miles of six-lane major arterial roadway in south Austin, Texas. Work included street and drainage design, approvals, and construction support.

State Highway 45 (the Outer Parkway) - 2.7 miles of the Parkway in Austin, Texas. Work included preliminary plan preparation for the Texas Department of Highways and Public Transportation for roadway and drainage design.

MOKAN Highway - included preliminary engineering, administration, graphic development, drainage, survey coordination, quantities, and estimates.

MAJOR WATER AND WASTEWATER FACILITIES

Lindell Lane 24-inch Watrline, Travis county - a cost reimbursement project between the City of Austin and Wild Horse Investments that consisted of approximately 8000 feet of 24-inch potable water line. The waterline tied to a City main north of US 290 at Decker Lane, crossed US 290 and then paralleled Decker Lane to Lindell Lane where it headed cross-country to the east. The line in the area of US 290 was designed and built in stages to accommodate the TxDOT US 290/SH 130 intersection construction and included bores for crossing beneath Decker Lane and under Capital Metro railroad. The project was bid as a City of Austin project and, upon completion, was accepted and is owned by the City of Austin.

LCRA Hamilton Pool Road Water System - The project extended the LCRA's Bee Cave water system out Hamilton Pool Road to serve developing areas. It included a 2 MGD potable water pump station constructed at an existing ground storage reservoir site off Hwy 71, over 18,000 linear feet of 16-inch potable waterline generally following Hamilton Pool Road to the West, a 250,000 gallon ground storage reservoir, a 2 MGD hydro-pneumatic water system at the end of the 16-inch waterline, and subsidiary projects that extended 12-inch waterlines to the south and to the west from the end of the 16-inch line. The project was let in three separate bids with additional line work change added to the original bids. The project included extensive coordination with outside environmental consultants as well as the representative for an individual conservation property that was being crossed. Special conditions were developed for restoration in environmentally sensitive areas and the design was, in numerous areas, augmented to respond to environmental concerns.

Hornsby Bend 12-inch Water Transmission Main - approximately 11,500 feet long and set generally along Webberville Road and Dunlap Road in eastern Travis County. The line connects the Hornsby Bend water wells near Webberville Road and Decker Lake Road to its elevated reservoir east of the Hornsby Bend development. The line crosses Decker Creek and Webberville Road and is generally set within easements.

Circle C Contract Bond Improvements - approximately 60,000 linear feet of wastewater interceptor, 2 - 2 million gallon Southwest "B" reservoirs, a 15,000 gpm pump station, and Southwest "A" storage reservoir site development, 12,000 lineal feet of 24" – 48" water transmission main. Work included environmental assessment, platting, survey coordination, design, approvals, and construction support. Project received Environmental Award from the City of Austin.

WCID #20 - Intake structure on Lake Austin and 0.86 mgd water treatment plant. Work included planning, survey coordination, design, approvals, and construction support.

Springbrook Center - approximately 6,650 linear feet of 12-24 inch wastewater trunk line. Work included planning, survey coordination, design, approvals, and construction support.

North Travis County MUD #5 - 300,000 gallon per day first phase wastewater treatment plant, 2,400 gallon per minute well system, elevated reservoir, and transmission and approach mains for the North Travis County MUD #5. Work included planning, permit preparation and application, survey coordination, design, and approvals.

183/620 Water Line - approximately 7,500 linear feet of 18-30 inch water line including two bores under US 183. Work included planning, survey coordination, design, approvals, and construction support.

Lakeline - water, wastewater, and drainage improvements for the Lakeline Development in the right-of-way of Pecan Boulevard, Lakeline Boulevard, and Stonestop Boulevard. Work included planning, survey coordination, design, approvals and construction support.

Lake Creek Lift Station - a 7,000-gallon per minute station for North Austin Municipal Utility District #1. Work included planning, survey coordination, design, approvals, and construction support.

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North Travis County MUD #5 - 300,000 gallon per day first phase wastewater treatment plant, 2,400 gallon per minute well system, elevated reservoir, and transmission and approach mains for the North Travis County MUD #5. Work included planning, permit preparation and application, survey coordination, design, and approvals.

RECREATIONAL FACILITIES



Circle C Golf Course - a 166 acre golf course located within the Circle C subdivision southwest of Austin, Texas. Work included site grading and drainage designs, erosion control, and approvals.

Spanish Oaks Golf Course - a 200 acre golf course located within the Spanish Oaks subdivision in western Travis County, Texas. Work included site grading and drainage designs, erosion control, and approvals.

The First Tee of Greater Austin - a 100-acre golf course located adjacent to the YMCA's East Communities Branch in Northeast Austin, Texas. MEC assisted the First Tee in evaluating the feasibility, preparing the construction documents and securing the necessary governmental approvals for its planned youth-oriented golf course and ball field facilities. MEC's work included the preparation of a special ordinance waiving certain code requirements, design and permitting of infrastructure improvements, platting of the property, and construction phase services.

Onion Creek Country Club – A nine-hole addition to the Onion Creek Country Club in Austin, Texas. MEC's work included collaborating in the design with the golf course architect, preparation of construction documents, assistance in obtaining approvals and permits and construction services for the project. The design incorporated 220 residential lots and required a major modification to the Club's wastewater treatment and replacement of effluent holding ponds.

Circle C Soccer Complex - a recreational complex located within the Circle C subdivision southwest of Austin, Texas. Work includes site grading and drainage

designs; street and parking designs; water utility designs; approvals; and construction coordination.

Onion Creek Golf Course - 9-hole addition to the Onion Creek Country Club in Austin, Texas. Work included coordination of preliminary and final designs with the course designer (Coore-Crenshaw), permitting, and construction support.

Austin Aqua Festival Facility - a 60-acre mixed use park facility for the Austin Aqua Festival. Work included hydrology analysis, drainage and filtration designs; grading, curb and gutter, and paving designs; sidewalk and trail designs; building site designs; water and wastewater utility designs (including lift station design); and approvals.

Circle C Swim Center - an Olympic size pool with associate facilities located within the Circle C subdivision southwest of Austin, Texas. Work included site grading and drainage designs; street and parking designs; water and wastewater utility designs; off-site utility coordination; approvals; and construction coordination.

Falconhead Golf Course - a 200 acre golf course located within the Falconhead subdivision in western Travis County, Texas. Work included site grading and drainage designs, erosion control, and approvals.

STORMWATER MANAGEMENT AND HYDROLOGICAL ANALYSIS

Little Walnut Creek Watershed Master Plan – This project, for the City of Austin, consisted of the hydrologic and hydraulic analysis of the urban watershed. The scope included the evaluation of the creek with respect to erosion problems and identification of structures in the floodplain.

Little Walnut Creek Erosion Control Projects – Murfee Engineering, in association with RJ Brandes Company completed the design for several erosion control projects along Little Walnut Creek in the City of Austin. Design elements included gabions as well as earth retaining systems designed to provide a supportive medium for vegetation.

Springbrook Centre Regional Detention - This project consisted of design of a three stage regional detention pond system for the upper Gilleland Creek watershed beginning at Picadilly Lane and continuing upstream. The first phase of the system consisting of two ponds was constructed by Cash Construction Company for a price of \$1,246,921.45. Construction began in October 1987 and was completed the following year. This project was funded as part of an interlocal agreement between the City of Austin and John Lloyd Development. Murfee Engineering was responsible for the preliminary planning, preparation of a regional detention and dam safety analysis, construction plans and the contract administration/inspection for this project. The U.S. Department of Agriculture Soil Conservation Service (USDA SCS) TR-20 computer program was used to determine the storm discharges, the U.S. National Weather Service (U.S. NWS) DAMBRK computer program was used for the dam safety analysis. The U.S. Army Corps of Engineers HEC-2 Water Surface Profiles and the Texas State Department of Highways and Public Transportation (T.S.D.H.P.T.) THYSYS computer programs were used to provide input to the previously referenced programs.

Circle C Regional Detention - This project has consisted of floodplain determinations and detention analyses for the Circle C Ranch development in upper Slaughter Creek, Williamson Creek and Bear Creek watersheds. The hydrologic and hydraulic analysis includes the following creeks and their tributaries: Slaughter Creek from near FM 1826 to its exit from the development near Brodie Lane, Danz Creek from FM 1826 to its confluence with Slaughter Creek, and floodplain determination for an unnamed tributary to Bear Creek. Associated with the development are the downstream wastewater interceptors and the necessity of locating such out of the 100-year floodplain. For the various phases of these interceptors, floodplain determinations were made of Slaughter Creek from the above mentioned locations downstream to IH-35. The results of the above floodplain delineations served as input for the planning and design process for the Circle C Ranch development. Determination of these floodplains and detention analyses began in 1983 and continued through 1990. The TR-20, HEC-2, DAMBRK, and THYSYS as well as the HEC-1 Flood Hydrograph Package computer programs have been used for these analyses.

MoPac-South/State Highway 45 Drainage - This project consisted of the design of MoPac-South from U.S. 290/S.H. 71 to its southern terminus and SH 45 from FM 1826

to its intersection with MoPac South. Murfee Engineering Company was responsible for the drainage design and bridge and culvert hydraulic analysis/design. This includes bridge crossings of Williamson, Slaughter, and Danz Creeks for the length of the project. The Danz Creek hydrologic analysis included a stream bifurcation which required a split flow analysis to determine the design flows for the proposed crossings. The design has been in phases beginning in 1986 and continued through 1989. The TR-20, HEC-2, and THYSYS computer programs were used to support the design.

MUNICIPAL AND OTHER GOVERNMENTAL ENTITIES

Sunfield Municipal Utility Districts 1, 2, 3, and 4 – Creation reports, District Engineering services including bond election reports, Master District facility design

Circle C Municipal Utility Districts 1, 2, 3, and 4 - Creation reports, systems design and approvals, construction support, bond reports, funds release reports, and District engineering services.

Water Control and Improvement District #20 - Creation report, systems design and approvals, construction support, bond reports, funds release reports, and District engineering services.

North Travis County Municipal Utility District #5 - Creation report, systems design and approvals, construction support, bond reports, funds release reports, and District engineering services.

Tanglewood Forest Municipal Utility District - District engineering services, system design and approvals, bond reports, fund release reports, and remedial engineering support.

North Austin Municipal Utility District #1 - District engineering services, system design and approvals, bond reports, fund release reports, special systems analyses, and remedial engineering support.

Wells Branch MUD - District engineering services, system design and approvals, bond reports, fund release reports, and remedial engineering support.

Springwoods MUD - District engineering services, system design and approvals, bond reports, fund release reports, and remedial engineering support.

City of Rollingwood – City Engineering, review of development plans, drainage improvement.

Barton Creek Water Supply Corporation - Corporation engineering services, system design and approvals, reports, and remedial engineering support.

LCRA – General consultation on waters supply issues, design of minor wastewater improvements and permitting for wastewater treatment plants.