INTRODUCTION

Bax Engineering Company, established in 1981 specializes in civil engineering, land planning and surveying for private and public entities. Bax Engineering’s in-house resources include over 35 years of project files as well as the survey records of two previous St. Charles County firms. These two firms, St. Charles County Engineering acquired by Bax in 1981, and Kerr Surveying Company of Wentzville acquired by Bax in 1987 provide an extensive basis of records, plats, and surveys from which Bax Engineering grew.

Through this growth, the focus of Bax Engineering has always been to provide the highest quality service, quality in design and survey, as well as a high level of response to our clients. As a way to implement such service, departments were established within the framework of the firm based on particular areas of expertise. Services we provide are:

- Roadway Design
- Land Planning
- Land Surveying
- Construction Surveying
- Civil Engineering
- Construction Monitoring
- 3D Scanning/High Definition Surveying
- Aerial Drone Surveying

PRINCIPALS:
Clifford L. Heitmann, P.E., President
Dale J. Bax, Vice-President

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LOCATION:
221 Point West Blvd.
St. Charles, MO 63301
Phone (636) 928-5552
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Corporate Professional Licensure
(State of Missouri):
Professional Engineering Corp. 655
Professional Land Surveying Corp. 144

PERSONNEL:
Engineering 17
Surveying 14
Administration 4
Total Staff: 35

REGISTERED PROFESSIONALS:
Bax Engineering employs engineering and surveying professionals registered in the states of Missouri and Illinois.
Professional Engineers 5
Professional Land Surveyors 2

REFERENCES:
Mr. Chris Bostic, P.E., PTOE
Engineering Design Manager
St. Charles County Government
(636) 949-7305

Mr. Brad Temme, P.E.
Assistant City Engineer
City of St. Charles
(636)-949-3237

Mr. Derek B. Koestel, P.E.
Director of Public Works
City of Lake Saint Louis
(636) 695-4221

Mr. Wade Montgomery, P.E.
City Engineer
City of O’Fallon
(636) 379-5567

Mr. Robert Schaffer, P.E.
City Engineer
City of Sullivan
(573) 468-8965
Bax Engineering Company Overview

PRIMARY ENGINEERING CAPABILITIES

Site Planning
Preliminary Plans     Construction Cost Estimates
Improvement Plans     Sanitary Sewers, Force Main and Lift Station Design
Roadway and Intersection Design  Storm Sewers
Detention and Retention Facilities  Water Distribution Modeling
Potable Water Mains     Lake Design
Low Pressure Sewer Systems  Trail Design
ADA Improvements     Grading
Parking Lots     Specifications and Job Special Provisions
Flood Plain Studies Construction Administration and Observation
Coordination, through review process, with governmental agencies and utility companies
Assistance with zoning, rezoning, conditional use permits and zoning variances
FEMA Letters of Map Amendment (LOMA) and Revision (LOMR)

PRIMARY SURVEYING CAPABILITIES

Boundary, Right-of-Way and Easement Surveys
ALTA/ACSM Land Title Surveys
Topographic and Profile Surveys
Construction Stakeout:
  Buildings    Parking Lots
  Sewers       Water Mains
  Grading      Land Development Improvements
  Road         Cut Sheet Preparation
3D Scanning/High Definition Surveying
Boundary Adjustments, Re-Subdivision and Lot Consolidation Plating
FEMA Letters of Map Amendment (LOMA) and Revision (LOMR)

CURRENT EQUIPMENT & COMPUTER CAPABILITIES

Bax Engineering Co., Inc. utilizes state-of-the-art hardware and software –including:
  Hewlett Packard Design Jet T920 Color Plotter
  Kip 9000 Engineering Plotter/Scanner/Copier
Trimble TSC3 Data Collectors using Trimble Software with:
  - Trimble R-8 GPS Survey Instruments
  - Geodimeter Survpro Robotic Total Stations
  - Stations Honda ATV with GPS Configuration
  - Trimble 5600 Robotic Total Stations
Leica ScanStation C10 LIDAR Scanner (3D Scanner/High Definition Surveying):
  - Cyclone 7.3 Software
  - Cloudworx for AutoCAD Software
Unmanned Aerial Vehicle Surveys (Aerial Drone Topographic Surveying)
To aid our engineering and surveying staff with design and drafting of our projects, we use:
  - AutoCad Civil 3D 2013 Software
  - Trimble Geomatics Office
  - WaterCAD V8i
  - Microstation V8i
  - Power GEOPAK
  - HEC-1 Flood Hydrograph Software
  - HEC-2 Water Surface Profile Software
  - HECRAS Water Surface Profile Software
  - Pond Pack Storm Routing – V8i
  - Hydraflow Storm Sewer Version 2010
Past Projects

**Veteran’s Memorial Parkway at Woodlawn Avenue (CMAQ Funding)**

Project included survey and road design services for intersection improvements to Veteran’s Memorial Parkway at Woodlawn Ave. in the City of O’Fallon. Improvements consisted of the addition of turn lanes in all quadrants and widening to improve traffic circulation. Preparation of right of way plans and exhibits was included as part of the services provided. Improvements were made to over 1,300 L.F. of roadway. Utility coordination during design helped to minimize utility relocations during construction.

**Elm Street at Elm Point Industrial Intersection Improvements (CMAQ-7302(650)—City of St. Charles**

This project is an extension of a previous roadway widening performed by Bax Engineering. The intersection of Elm Street and Elm Point Industrial was improved to accommodate additional through lanes along Elm Street. In addition, dual left turn lanes were added from eastbound Elm Point Industrial Drive to northbound Elm Street. Bax previously performed design work to widen Elm Street between the eastbound Highway 370 ramps to Elm Point Industrial as part of federal project number STP-7303(613). The project was undertaken to improve traffic flow in the area and reduce congestion at the intersection.

**South Main Street—City of St. Charles**

Project consisted of approximately 2,000 linear feet of roadway improvements including significant grade change (in excess of 25-ft.) to widen the roadway and connect to the newly developed Streets of St. Charles. The project started at South River Road and extended to the overhead Blanchette Bridge at Interstate 70. Intersection improvements at South River Road were also incorporated into the design of the project. The construction of this project coincided with the construction of the Blanchette Bridge project and thus, the staging was developed to maintain traffic while not interfering with the Blanchette project. The large amount of fill required Bax to consider settlement monitoring following installation of the fill.
St. Charles Rock Road ADA Sidewalk Improvements

Surveying, engineering and construction administration services for reconstruction as necessary to bring approximately 7,400 L.F. of sidewalk into compliance with ADA standards. Ramps were upgraded at all intersecting streets and driveways along the project. Portions of the sidewalk were reconstructed to comply with ADA requirements. Project encompassed both sides of the state right of way from Orlando Ave. to the eastern limits of the City of St. John.

Ridgeview Sidewalk & Hawthorne Sidewalk

Bax prepared a topographic survey and construction plans for a sidewalk extension 2,800 L.F. in length along Ridgeview Avenue (from West Randolph to its terminus) and 1,600 L.F. in length along Hawthorne Avenue (from Park Avenue to West Randolph) in the City of St. Charles. Project included new sidewalk ramps and new driveway approaches as necessary to meet ADA requirements. Impacts to adjacent yards and trees were minimized through the use of small retaining walls. During design consideration was made to minimize utility adjustments and relocations.

Blackhurst and Hardin Sidewalk (SRTS)

Bax prepared a topographic survey and construction plans for the Blackhurst-Hardin Safe Routes to School Sidewalk project in the City of St. Charles. The length of the project was 4,680 feet with 3,830 feet along streets that did not have a sidewalk on either side. An additional 830 feet extended along the entry drive and parking areas within the Blackhurst Elementary School and Hardin Middle School complex. The proposed sidewalks, curb ramps, and crosswalks along such streets were constructed in accordance with ADA Standard.

Highway 94 & 370 Bike Trail

Bax prepared a Feasibility Study with conceptual plan and is currently in the final plan phase for a new on and off road bicycle trail connecting the Katy Trail at Dusable Park to the Great Rivers Greenway Boschert Greenway in the City of St. Charles. The study also included a future phase of the project which will provide connection to the future 110 acre park at Hawning Road. Funding for the project is being provided by the City of St. Charles in conjunction with a grant from Missouri Department of Natural Resources.

Current Sidewalk and Trail Project

Woodlawn/ Civic Park Resurfacing and Sidewalks (STP)

Bax prepared a topographic survey and construction plans for the extension of a sidewalk along the east side of Woodlawn Avenue in the City of O’Fallon. The project began approximately 825 feet south of West Pitman Avenue extending north to Civic Park Drive, a distance of approximately 2930 feet. The project included new ADA compliant driveway approaches, ADA compliant ramps at side streets and at all four quadrants of the Woodlawn Avenue and Civic Park Drive Intersection. In addition the project included widening to provide a left turn lane at West Elm Street.