ROBERT T. TOLBERT, P.E.

CONSULTING ENGINEER

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CURRICULUM VITAE

PROFILE:

A licensed Professional Engineer (Alabama, Arkansas, Georgia, Mississippi & Tennessee) with qualifications including a Bachelor's Degree in Mechanical Engineering from the University of Alabama at Birmingham. A Graduate level Certificate in Structural Engineering from the University of Alabama at Birmingham and a Master's Degree in Civil Engineering from the University of Alabama at Birmingham. Over 32 years work experience in industrial/construction fields, with experience (prior to becoming an engineer) including commercial and residential construction, excavation services, fabrication shops, machine shops, automobile mechanics (drag raced for ten years), farm equipment, HVAC, trucks and heavy equipment. A "hands-on" engineer, with an extremely strong aptitude, intuition and superb troubleshooting abilities, Mr. Tolbert has a thorough knowledge and understanding of building construction, machinery, automation, industry, manufacturing, automobiles, trucks, heavy equipment, automobile wrecks, industrial settings, railroads, marine, and structural standards. CAD software is used for design, projects and reconstruction, complete with plotter for up to 34" x 60" drawings or illustrations.

WORK EXPERIENCE:

Tolbert Engineering and Construction, LLC Self-Employed. Engineering, construction and excavation services for residential and small commercial projects on and around the Smith Lake, Alabama area. Innovative design and engineered construction for challenging projects structurally, topographically and architecturally.

Robert T. Tolbert, P.E., Self-Employed. Provide expert witness and Engineering consultation services to Attorneys in the State of Alabama, and the Southeast. Services available include opinions, analyses, reports, photographs, diagrams and testimony.

University of Alabama, Instructor in Mechanical Engineering Department. Taught classes in the Mechanical Engineering Department.

Jefferson State Community College, Part-time instructor. Taught courses in engineering/technical fields at Northeast campus. Includes teaching two advanced hydraulics/pneumatics courses to Boeing rocket engine test engineers in Decatur, AL.

Southeast Control Systems, Inc., Project Engineer. Sole responsibility for designing, installing, programming and startup of CNC (Computer Numerical Controls) for manufacturing machine equipment. Includes selection of components, ladder logic programming, modification of machinery, machine design, etc.

BE&K / Viatech, (Contract Position), Design Engineer. Duties included design, layout and specifications of chemical plants. Designed and specified the sizing, standards, economics and procurement of buildings, foundations, structural steel, pumps, piping, screens, pneumatics, hydraulics, fire fighting and safety equipment, etc.

Reliable Automation and Conveyor Systems, Inc., Project Engineer (Contract Position). Duties included the design and construction of industrial material handling systems, such as conveyors, piping systems, crane, monorails, robotics, PLC's (programmabale logic controllers), hydraulics, pneumatics and electrical controls.

Raytheon Engineers and Constructors (previously Rust Engineering Co.), (Contract Position.), Design Engineer II. Duties and responsibilities included the design, layout, construction and or demolition of paper mills, food plants and industrial facilities. Designed the oxygen delignification plant for the International Paper Riegelwood project, and designed projects such as Pillsbury, Mars Candy, Miller Brewing Company and others.

Kustom Kreations, Product and Compliance Engineering Manager. Duties and responsibilities include insuring that the manufacturing process and the final products of this company are in compliance with the requirements of Ford, General Motors, Dodge, RVIA (Recreational Vehicle Industry Association) and FMVSS (Federal Motor Vehicle Safety Standards). This includes safety, center of gravity calculations, and other functional testing and specifications. Received correspondence from the various manufacturers, Industry Associations, etc., and initiated whatever changes were necessary to bring this company in compliance with the mandates.

Rust Engineering Co., Design Engineer I. Duties and responsibilities included the design, layout, construction and/or demolition of paper mills, garbage disposal plants and waste to energy plants. Most of the work was done primarily in the woodyard, screening towers, and stock prep areas, focusing on material handling, piping systems, conveyors, screens, fans, blowers (pneumatic conveyors), pipe bridges, pumps, tanks, safety standards, etc. Solely responsible for several general arrangement designs on woodyards, blower systems, conveyors, monorail systems, etc., which were approved by the clients and released for construction. This position involved frequent field trips, to obtain existing site information and measurements.

Airlock Manufacturing Co., Inc. (Contract Position), Project Engineer. Duties and responsibilities included the design, manufacture, installation and start up of robotic pick and place machinery, utilizing vacuum pads for placement. Full charge design responsibility for several projects while there, and was flown to several sites around the Northeastern US to represent the company on the technical issues of the projects. Performed all engineering calculations necessary in the design of these robotic machines, was the Engineer-In-Charge at startup and programmed the PLC's during the initial installation period.

Thermo King Corp., (Contract Position), Project Engineer. Duties and responsibilities included the design and testing of railroad air conditioning equipment. Wrote test procedures for the rebuild of rail car air conditioning units. Performed **FEA** (**F**inite **E**lement **A**nalysis – Stress Analysis) calculations on the structures of the A/C units to insure that they would withstand the vibration and shock loads associated with RR service. This position required several trips to Hornell, NY to represent the company to the customer on technical issues. Full charge responsibility of several aspects of the projects, including the electrical design of the controls circuit.

Kershaw Mfg. Co., Inc., Project Engineer. Duties and responsibilities included the design, manufacturing and demonstration of railroad maintenance equipment. This included structural design, heavy emphasis on the electro-hydraulic (and/or pneumatic), engine selection, cab design, noise control, etc. Performed **F**inite **E**lement **A**nalysis (**FEA**) on crane structures, hydraulic/pneumatic design calculations (including heat generation and dissipation), power requirements, bearing life and load, and many other engineering functions pertinent to the design and manufacture of custom equipment. Sole responsibility for a machine called the "Kribber/Adzer" that Kershaw designed and built for CSX Railroad. The Head of Maintenance for CSX requested me personally to design two other projects after the Kribber/Adzer, those projects being the switch undercutter, and the dump car. Developed a machine called a "Ramp Car" that loaded equipment from the track to a flat car for transporting. This car eliminated the use of a crane for loading equipment up to 80,000 lbs.

BE&K Engineering Co., Inc., Mechanical Engineer. Duties and responsibilities included the design, layout, construction and/or demolition of paper mills. Most of the work was done primarily in the woodyard, screening towers, and stock prep areas, focusing on material handling, structures, conveyors, screens, fans, blowers (pneumatic conveyors), pipe systems, pipe bridges, tanks, pumps, safety standards, etc. Prepared general arrangement drawings, mechanical details, flow sheets, P&ID's, and other necessary documentation. Extensive use of Intergraph Microstation, computer programming, and engineering calculations necessary for the design of the conveyors, fans, blowers, screens, dust control, etc. This position required frequent field trips to the project sites.

Dravo Lime Co., Longview Division, Plant Engineer/Maintenance Engineer/Safety Director. Duties and responsibilities included design, construction and/or demolition of any and all capital expansion projects, major repair/rebuild projects, maintenance and modification projects. Performed the engineering calculations necessary for the design of conveyors, drives, ventilation, materials handling, hoppers, ducts, pipelines, pumps, enhancing combustion processes, etc. Responsibility included the compliance with pollution and safety standards, dealing with **OSHA**, the **A**labama **D**epartment of **E**nvironmental **M**anagement (**ADEM**) and **MSHA M**ining **S**afety **H**ealth **A**ct (Mining's version of **OSHA**) extensively.

Tree Farmer Equipment Co., Inc., Production Engineer. Duties and responsibilities included the design and manufacture of logging skidders. Responsible for the design of structures, powertrains, transmissions, hydraulics, brakes, grapples, and many other aspects of the design. Responsible for testing on the **R**oll **O**ver **P**rotective **S**tructure (**ROPS**) & **F**alling **O**bject **P**rotective **S**tructure (**FOPS**) in accordance with SAE Standards.

Tolbert Excavating Company, Inc., Owner/President. Operated an excavating contracting business, using bulldozers, front-end loaders, backhoes, compactors, motor graders, and other types of heavy equipment to perform excavation services, grade work and demolition. Built roads, lakes, excavated building sites (residential and commercial), cleared land, septic tanks, compaction, fill work, hauling, demolished buildings, etc.

Turner Welding, Welder/Fabricator/Machinist. Built fabricated and machined assemblies from detailed engineering drawings. Operated all shop equipment, rolls, presses, welders, etc.

Southern Research Institute, Fabricator/Machinist. Worked as a welder/machinist building test equipment for research work at the institute. Involved all types of metals, such as stainless, titanium, magnesium, inconel, etc.

US Navy, Welder/Pipefitter/Damage Controlman. Attended welding school, pipefitting school and damage control schools in the Navy. Enlistment time was spent as a ship welder/damage controlman.

LICENSES/EDUCATION/CERTIFICATIONS:

State of Georgia Professional Engineer License Number PE033488 (2008)
State of Tennessee Professional Engineer License Number 111157 (2007)
Alabama Onsite Wastewater Board – Advanced Installer's License Number 2103 (2006)
State of Arkansas Professional Engineer License Number 12327 (2006)
State of Mississippi Professional Engineering License Number 16727 (2005)
Master of Science Civil Engineering, University of Alabama at Birmingham (2005)
Structural Engineering Graduate Certificate, University of Alabama at Birmingham (2003)
Certified in Traffic Accident Reconstruction, Northwestern University (2001)
SME (Society of Manufacturing Engineers) Gear Design seminar, Nashville, TN (2000)
GE Fanuc Ladder Logic Programming, Chicago, IL (1999)
GE Fanuc i-Series Maintenance and Troubleshooting, Chicago, IL (1999)
State of Alabama Professional Engineering License Number 21013 (1995)
Mechanical Engineering Review, University of Alabama at Birmingham (1994)
Bachelor of Science Mechanical Engineering, University of Alabama at Birmingham (1990)
Numerous seminars on pumps, screens, cranes, electrical equipment, etc. (1988-1998)
Associate of Applied Science, Jefferson State Junior College, Birmingham, Alabama (1988)
MSHA (Mining Safety Hazard Act) Several seminars (1987-1989)
Welding School, Bessemer Tech, Bessemer, Alabama (1980)
Welding and Pipefitting, United States Navy, San Diego, California (1978)
Sheet Metal and Plate Fabrication, United States Navy, San Diego, California (1978)
Firefighting and Damage Control, United States Navy, San Francisco, California (1977)
Advanced Academic Diploma, Hewitt Trussville High, Trussville, Alabama (1976)
Basic Machine Shop Practice, Tarrant Vocational School, Tarrant, Alabama (1975)