

# SMALL ARROW ENGINEERING, LLC



## **Education:**

B.S., Management  
Technology, MSSU,  
Joplin, MO, 1995

A.S., Computer Aided  
Drafting and Design,  
Missouri Southern State  
University, 1992

## **Certifications:**

National Institute of  
Certified Engineering  
Technicians  
Level 1 Certification  
Level 2 Certification  
Level 3 & 4 Candidate

## **Employment History:**

2010 – Present  
Small Arrow  
Engineering,  
Joplin, MO  
Senior Designer

2008 – 2010  
Lee Engineering  
& Assoc.,  
Springfield, MO  
Senior Designer

2005 – 2008  
CJW Transportation  
Consultants,  
Springfield, MO  
Project Manager

1996 – 2005  
Tri-State Engineering,  
Joplin, MO  
Senior Designer

1994 – 1996  
MoDOT,  
Joplin, MO  
Senior Highway Design  
Technician

## **Troy Dunlap - Senior Designer**

### **Professional Experience:**

Troy is the Senior Designer for Small Arrow Engineering (SAE) with 21 years of design experience in the civil engineering field. He has been responsible for designing large roadway and intersection improvement projects as well as water, sanitary sewer and storm drainage projects.

### **Relevant Experience:**

#### **City of Springfield**

Troy has been the lead designer for several signal and intersection improvements in the City of Springfield. These projects include signal and streetscape improvements to a 4 block long downtown corridor along Campbell Avenue from Walnut Street to Olive Street. Troy also oversaw the design of a streetscape project on Commercial street, encompassing about three city blocks. Another project was improvements to Fort & Sunshine (Rte 60). This design included realignment of an offset intersection. Finally, dual left turn lanes were added to the redesign of the Glenstone (Bus 65) and Primrose intersection. This project was a cost share effort between MoDOT Dist 8 and the City.

#### **City of Ozark**

Troy was the lead designer for the Route CC and 22nd Street signalized intersection improvement in the City of Ozark. This upgraded intersection will serve the new Deerbrook Commercial Subdivision. Another new signalized intersection was designed at Rte NN & Bluff Drive to serve the new Ozark High School. Finally, 4 new signalized intersections with upgraded geometrics and lighting systems were designed for the Rte 14 & Rte 65 interchange. This work was completed for MoDOT Dist 8 with City input.

#### **Missouri Avenue, MoDOT District 9**

The project improved the two-mile corridor between I-44 and Ft. Leonard Wood in St. Robert, MO. As lead designer for the project, Troy was responsible for the signal design and geometric layouts for interchange modifications and three major intersections along Route Spur I-44. Other responsibilities included drainage design for the highway and intersections.

#### **Missouri American Water**

Troy was the lead designer for an EPA funded project. The project involved topographic survey, design, right-of-way acquisition and construction observation for a new water distribution system. The new system provided residents of Northern Newton County a cleaner water supply. Troy was responsible for design of approximately 80 miles of water main from 2" PVC to 16" DIP in size.

#### **City of Joplin**

Schifferdecker Ave. was widened from two lanes to three lanes, with grading for a future 5-lane corridor from 7<sup>th</sup> Street to 20<sup>th</sup> Street. Eighteen new storm sewer systems were designed to alleviate flooding and drainage improvements were made to the Short Creek Watershed both east and west of Schifferdecker Avenue. Troy also designed the roadway widening, creek channel widening and 3 signalized intersections with upgraded intersection geometrics.

