

ARCHITECT - ENGINEER QUALIFICATIONS

PART I - CONTRACT-SPECIFIC QUALIFICATIONS

A. CONTRACT INFORMATION

1. TITLE AND LOCATION *(City and State):*
 2. PUBLIC NOTICE DATE:
 3. SOLICITATION OR PROJECT NUMBER:
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B. ARCHITECT-ENGINEER POINT OF CONTACT

1. NAME AND TITLE: Jeffrey W. Buckholz, P.E., President
 2. NAME OF FIRM: JW Buckholz Traffic Engineering Inc
 3. TELEPHONE NUMBER: 904-886-2171
 4. FAX NUMBER: 904-886-2170
 5. E-MAIL ADDRESS: jwbuckholz@aol.com
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C. PROPOSED TEAM

(Complete this section for the prime contractor and all key subcontractors.)

- 9a. PRIME (CHECK HERE):
 - 9a. JOINT-VENTURE PARTNER (CHECK HERE):
 - 9a. SUBCONTRACTOR (CHECK HERE):
 - 9a. FIRM NAME: JW Buckholz Traffic Engineering Inc
 - 9a. IF BRANCH OFFICE CHECK HERE:
 - 10a. ADDRESS: 3585 Kori Road
Jacksonville, FL 32257
 - 11a. ROLE IN THIS CONTRACT: Subconsultant
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- 9b. PRIME (CHECK HERE):
 - 9b. JOINT-VENTURE PARTNER (CHECK HERE):
 - 9b. SUBCONTRACTOR (CHECK HERE):
 - 9b. FIRM NAME:
 - 9b. IF BRANCH OFFICE CHECK HERE:
 - 10b. ADDRESS:
 - 11b. ROLE IN THIS CONTRACT:
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- 9c. PRIME (CHECK HERE):
- 9c. JOINT-VENTURE PARTNER (CHECK HERE):
- 9c. SUBCONTRACTOR (CHECK HERE):
- 9c. FIRM NAME:
- 9c. IF BRANCH OFFICE CHECK HERE:
- 10c. ADDRESS:
- 11c. ROLE IN THIS CONTRACT:

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- 9d. PRIME (CHECK HERE):
- 9d. JOINT-VENTURE PARTNER (CHECK HERE):
- 9d. SUBCONTRACTOR (CHECK HERE):
- 9d. FIRM NAME:
- 9d. IF BRANCH OFFICE CHECK HERE:
- 10d. ADDRESS:
- 11d. ROLE IN THIS CONTRACT:

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- 9e. PRIME (CHECK HERE):
- 9e. JOINT-VENTURE PARTNER (CHECK HERE):
- 9e. SUBCONTRACTOR (CHECK HERE):
- 9e. FIRM NAME:
- 9e. IF BRANCH OFFICE CHECK HERE:
- 10e. ADDRESS:
- 11e. ROLE IN THIS CONTRACT:

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- 9f. PRIME (CHECK HERE):
- 9f. JOINT-VENTURE PARTNER (CHECK HERE):
- 9f. SUBCONTRACTOR (CHECK HERE):
- 9f. FIRM NAME:
- 9f. IF BRANCH OFFICE CHECK HERE:
- 10f. ADDRESS:
- 11f. ROLE IN THIS CONTRACT
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D. ORGANIZATIONAL CHART OF PROPOSED TEAM (Attached; check here)

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME: **Jeffrey W. Buckholz, P.E.**
13. ROLE IN THIS CONTRACT: Traffic Engineer
- 14a. YEARS EXPERIENCE - TOTAL: 30
- 14b. YEARS EXPERIENCE - WITH CURRENT FIRM: 19
15. FIRM NAME AND LOCATION (City and State): JW Buckholz Traffic Engineering Inc
Jacksonville, Florida
16. EDUCATION (DEGREE AND SPECIALIZATION): BSCE / 1976 / Civil Engineering
MSCE / 1977 / Civil Engineering (Transportation)
MBA / 1983 / Finance
PhD / 2007 / Civil Engineering (Transportation)
17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE):
Florida PE 39705
Georgia PE 21641
California PE 31497
Ohio PE 46038
Michigan PE 31919
Massachusetts PE 32899
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.):
Institute of Transportation Engineers (ITE) - Member
International Municipal Signal Association (IMSA) – Member
Level II IMSA - Certified Traffic Signal Technician
Level II IMSA - Certified Signs & Markings Specialist
Author - IMSA Levels I and II Traffic Signal Training Manual
Author - IMSA Traffic Signal Inspection Manual
Certified Unlimited Electrical Contractor in Florida (EC-0001856) and Georgia (ER-101784)
Certified Fiber Optic Technician, Levels I, II and III
Certified LAN Cabling Technician
Court Certified Expert Witness in Traffic Engineering
Adjunct Professor, University of North Florida (2005 – Present)
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- 19a(1) RELEVANT PROJECT - TITLE AND LOCATION (City and State): US 1 Multi-Modal Transportation Study
St. Johns County, FL
- 19a(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 1997
- 19a(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable): N/A
- 19a(3) RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:
Check here if project performed with current firm:
The primary purpose of the study was to identify and evaluate alternative methods for improving the mobility of motor vehicles, pedestrians, bicycles, and trams along the 13 mile US 1 corridor - and to do so for both a short term (5 year) and long term (20 year) design horizon. Proposed improvements include measures to increase roadway capacity, improve traffic operations and safety, and enhance aesthetics along the corridor. The study contained an extensive public involvement phase with a slide presentation and associated audio tapes prepared for three public meetings.
- 19b(1) RELEVANT PROJECT - TITLE AND LOCATION (City and State): North-South Corridor (CR 2209) Long
Range Transportation Study
St. Johns County, FL
- 19b(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2001

19b(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable): N/A

19b(3) RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:

Check here if project performed with current firm:

The St. Johns County regional planning model was extensively modified to reflect network and socioeconomic changes associated with this new roadway. Hourly design volumes were developed from the daily modeling results and a series of mainline and intersection capacity analyses were completed. A final lane configuration was proposed for the corridor and associated levels of service were determined.

19c(1) RELEVANT PROJECT - TITLE AND LOCATION (City and State): Development of Flagler County Long Range Transportation Planning Model
Flagler County, FL

19c(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2005

19c(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable): N/A

19c(3) RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:

Check here if project performed with current firm:

The CUBE modeling platform was used to construct a long-range transportation planning model for Flagler County, including the City of Palm Coast. The model was calibrated using 2005 as the base year and daily traffic projections were developed for both the 2015 and 2025 design years. The model is currently being used for all long-range transportation planning endeavors in Flagler County, including the evaluation of proposed roadway additions.

19d(1) RELEVANT PROJECT - TITLE AND LOCATION (City and State): Coordinated Signal System Retiming
Northern Florida

19d(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2007

19d(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable): 2007

19d(3) RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:

Check here if project performed with current firm:

The retiming of over 500 traffic signals covering 35 major corridors in Northeast and Central Florida. These include some of the most heavily traveled corridors in Florida and involve time-based systems, hard-wire interconnect systems, closed-loop systems, and UTCS systems. A host of innovative timing and phasing techniques, including such items as external phase holds, time-of-day switchable lead/lag operation, and detector switching, were used to facilitate progression and reduce cycle failures. Improved timings were both developed and successfully implemented as part of this work. Before and after travel time runs were used to document the sizeable monetary savings associated with the retiming effort. Synchro, Transyt and Passer microcomputer programs were used to develop the base timings.

19e(1) RELEVANT PROJECT - TITLE AND LOCATION (City and State): Interstate 95 ITS System
Palm Beach County, FL

19e(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2004

19e(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable): Not yet constructed

19e(3) RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:

Check here if project performed with current firm:

Final design plans and Technical Special Provisions were prepared for the installation of 16 permanent Dynamic Message Signs, 34 CCTV cameras, and 155 RTMS detection units along Interstate 95 in Palm Beach County, Florida. A 40-mile long fiber-optic communication system (using two 48-count single mode fiber-optic cables) was also designed as was a four-node multiplexer system and associated central control elements.

19f(1) RELEVANT PROJECT - TITLE AND LOCATION (City and State): St. Johns County Closed-Loop Traffic
Signal System
St. Johns County, FL

19f(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 1992

19f(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable): 1994

19f(3) RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:

Check here if project performed with current firm:

A detailed set of plans and an extensive set of special provisions were developed for this state-of-the-art traffic control system that utilizes fiber optic cable for master-to-local communications. Since a large portion of the system was within historic St.

Augustine, a number of important aesthetic and archeological issues had to be addressed within the plans and specifications. Construction inspection services were also provided for this project.

- 19g(1) **RELEVANT PROJECT - TITLE AND LOCATION (City and State):** Closed-Loop Signal System Expansion
Vero Beach, FL
- 19g(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 2000
- 19g(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable):** 2002
- 19g(3) **RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:**
Check here if project performed with current firm:
Using Indian River County's existing SONET system, upgrades were designed to facilitate communication with master controllers and 30 pan/tilt/zoom cameras. A large fiber-optic interconnect system (using 96-count single mode fiber-optic cables) was also designed as were numerous traffic signal improvements.
- 19h(1) **RELEVANT PROJECT - TITLE AND LOCATION (City and State):** Orlando Metric Signing Project
Orlando, FL
- 19h(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 1993
- 19h(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable):** 1994
- 19h(3) **RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:**
Check here if project performed with current firm:
The preparation of metric signing plans for all of the major grade-separated facilities in the greater Orlando area, including: I-4, the Beeline Expressway, the East-West Expressway, Florida's Turnpike, and the Eastern Beltway. The work included the inventory of existing signs, the conversion of all the numerical signs from English to Metric, and the modification of all the substandard non-numerical signs to meet FHWA standards. The design work involved approximately 1500 signs and resulted in a 400-sheet set of detailed signing plans, included an extensive set of guide sign worksheets. In advance of the design work, a design report was prepared which recommended the most cost-effective method (overlay, panel replacement, or new sign) for conversion from English to Metric legends.
- 19i(1) **RELEVANT PROJECT - TITLE AND LOCATION (City and State):** Group 5 and Group 6 Traffic Signal
System Inspection Services
Ft. Lauderdale, FL
- 19i(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 2001
- 19i(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable):** 2001
- 19i(3) **RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:**
Check here if project performed with current firm:
CEI services were provided for the expansion of Broward County's UTCS Extended traffic control system, which utilizes both user owned multi-pair copper cable and telephone circuits for central-to-local communications. Over 70 miles of communication cable installation and testing was completed during this project and modifications were made at 71 controller cabinets with 3 intersections being completely rebuilt. Given the congested utility situation that exists throughout Broward County, a significant field effort was required by inspection personnel to find locations where conduit runs could be safely installed with a minimum of delay. Inspection personnel prepared a CAD map covering a large portion of Broward County's existing traffic signal communications system as part of this project. Buckholz Traffic also handled EEO/AA/DBE requirements for this project.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. **NAME:** Tony Delacruz
13. **ROLE IN THIS CONTRACT:** CAD Designer / CUBE Modeler
- 14a. **YEARS EXPERIENCE - TOTAL:** 22
- 14b. **YEARS EXPERIENCE - WITH CURRENT FIRM:** 16
15. **FIRM NAME AND LOCATION (City and State):** JW Buckholz Traffic Engineering Inc
Jacksonville, FL
16. **EDUCATION (DEGREE AND SPECIALIZATION):** BSME / Mechanical Engineering
17. **CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE):**
None

18. **OTHER PROFESSIONAL QUALIFICATIONS** (*Publications, Organizations, Training, Awards, etc.*):
Basic and advanced Autocad training, FCCJ, Jacksonville, Florida
Intergraph training, Intergraph Corporation, Huntsville, Alabama
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- 19a(1) **RELEVANT PROJECT - TITLE AND LOCATION** (*City and State*): Southwest Jacksonville Long Range
Transportation Planning Study
Jacksonville, FL
- 19a(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 2002
- 19a(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION** (*If applicable*): N/A
- 19a(3) **RELEVANT PROJECT - BRIEF DESCRIPTION** (*Brief scope, size, cost etc.*) **AND SPECIFIC ROLE:**
Check here if project performed with current firm:
The northeast Florida regional planning model was used to model 2025 traffic volumes for the southwestern portion of Jacksonville. Hourly design volumes were developed from the daily modeling results and a series of intersection capacity analyses were completed. A final lane configuration was proposed for all intersections of interest in the study area and associated capacity levels were identified.
- 19b(1) **RELEVANT PROJECT - TITLE AND LOCATION** (*City and State*): Kernan Boulevard Corridor Study
Jacksonville, FL
- 19b(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 2003
- 19b(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION** (*If applicable*): N/A
- 19b(3) **RELEVANT PROJECT - BRIEF DESCRIPTION** (*Brief scope, size, cost etc.*) **AND SPECIFIC ROLE:**
Check here if project performed with current firm:
This study projected future traffic for a 2025 design year and recommended both mainline and intersection lane configurations. Grade-separation was recommended at the busy Atlantic Boulevard/Kernan Boulevard and Beach Boulevard /Kernan Boulevard intersections.
- 19c(1) **RELEVANT PROJECT - TITLE AND LOCATION** (*City and State*): Monument Road Closed-Loop Traffic
Signal System Design
Jacksonville, FL
- 19c(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 1996
- 19c(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION** (*If applicable*): 2001
- 19c(3) **RELEVANT PROJECT - BRIEF DESCRIPTION** (*Brief scope, size, cost etc.*) **AND SPECIFIC ROLE:**
Check here if project performed with current firm:
A detailed set of traffic signal plans and TS-2 closed-loop technical special provisions were generated for this project and a unique unipole mast arm design was developed for the Monument/Lone Star intersection.
- 19d(1) **RELEVANT PROJECT - TITLE AND LOCATION** (*City and State*): Wonderwood Traffic Signal Design
Jacksonville, FL
- 19d(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 2001
- 19d(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION** (*If applicable*): 2003
- 19d(3) **RELEVANT PROJECT - BRIEF DESCRIPTION** (*Brief scope, size, cost etc.*) **AND SPECIFIC ROLE:**
Check here if project performed with current firm:
Engineering plans and technical special provisions were developed for this small 5-signal closed-loop system. Included in this project was the design of a traffic signal for an existing fire station. Prior to initiating the signal system design, a comprehensive traffic study was prepared which identified the optimum lane arrangement and signal phasing for each intersection.
- 19e(1) **RELEVANT PROJECT - TITLE AND LOCATION** (*City and State*): Hendricks Avenue Traffic Signal Design
Jacksonville, FL
- 19e(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 2003
- 19e(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION** (*If applicable*): 2006
- 19e(3) **RELEVANT PROJECT - BRIEF DESCRIPTION** (*Brief scope, size, cost etc.*) **AND SPECIFIC ROLE:**
Check here if project performed with current firm:
A detailed set of plans and technical special provisions were developed for this closed-loop traffic control system. The signals are located in a very tight urban area where right-of-way is scarce, which complicated the mast arm layout and design.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person.)

12. **NAME:** Peter Vintu
13. **ROLE IN THIS CONTRACT:** CAD Designer / Traffic Data Technician
- 14a. **YEARS EXPERIENCE - TOTAL:** 21
- 14b. **YEARS EXPERIENCE - WITH CURRENT FIRM:** 17
15. **FIRM NAME AND LOCATION (City and State):** JW Buckholz Traffic Engineering Inc
Jacksonville, FL
16. **EDUCATION (DEGREE AND SPECIALIZATION):** Bachelor of Science in Mathematics/1969
Master of Science in Mathematics/1975
17. **CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE):**
None
18. **OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.):**
Certified Worksite Traffic Supervisor - American Traffic Safety Services Association
Certified Pavement Marking Technician - American Traffic Safety Services Association
Certified Traffic Signal Technician, Level I - International Municipal Signal Association
Fiber Optic Installation & Splicing Certificate - Siecor Corporation
Certified Concrete Field Testing Technician, Grade I - American Concrete Institute
Certified Nuclear Density Testing Technician - Troxler Electronic Laboratories

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- 19a(1) **RELEVANT PROJECT - TITLE AND LOCATION (City and State):** I-95 and I-595 CMS System
Broward County, FL
- 19a(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 2003
- 19a(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable):** 2003
- 19a(3) **RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:**
Check here if project performed with current firm:
Buckholz Traffic provided all inspection services for this system, including factory acceptance testing, communication testing and computer system testing services. The system included 33 changeable message signs and a fiber-optic communications system.
- 19b(1) **RELEVANT PROJECT - TITLE AND LOCATION (City and State):** Main Street Signal System Upgrade
Jacksonville, FL
- 19b(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 1993
- 19b(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable):** 1993
- 19b(3) **RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:**
Check here if project performed with current firm:
CEI services were provided for this federal-aid project, which covered a 3-mile stretch of Main Street near Downtown Jacksonville. Utility coordination was critical in this congested area and extreme precautions were taken to avoid damaging existing underground utilities and to provide the required NESC clearances to overhead electric and communication lines. Buckholz Traffic also handled EEO/AA/DBE requirements for this project
- 19c(1) **RELEVANT PROJECT - TITLE AND LOCATION (City and State):** Data Collection for Traffic Signal Timing
Northeast and Central Florida
- 19c(2) **RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES:** 2007
- 19c(2) **RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (If applicable):** N/A
- 19c(3) **RELEVANT PROJECT - BRIEF DESCRIPTION (Brief scope, size, cost etc.) AND SPECIFIC ROLE:**
Check here if project performed with current firm:
Over the past sixteen years, Buckholz Traffic has completed traffic signal retiming projects throughout north and central Florida, involving some of the busiest corridors in the state. Buckholz Traffic personnel have conducted hundred's of TMC's and machine counts in support of this work. Buckholz Traffic personnel have also field-collected signal timing data from a wide variety of signal systems, including TBC systems, UTCS systems, and closed-loop systems - and are capable of

retrieving and interpreting even the most complex signal timing data. In addition, Buckholz Traffic personnel have conducted many before and after corridor travel time and delay studies in support of project evaluation.

19d(1) RELEVANT PROJECT - TITLE AND LOCATION (*City and State*): FDOT District 3 Roadway Inventory
Northwest Florida

19d(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 2001

19d(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (*If applicable*): N/A

19d(3) RELEVANT PROJECT - BRIEF DESCRIPTION (*Brief scope, size, cost etc.*) AND SPECIFIC ROLE:

Check here if project performed with current firm:

Buckholz Traffic inventoried all of the roadways in District 3 so that a complete update to the RCI could be compiled. This inventory work included both urban sections (such as exist in Pensacola and Tallahassee) and rural sections. Buckholz Traffic personnel updated the database and modified straight-line diagrams were prepared based on the results of the inventory. Precise "measured miles" for DMI calibration were established throughout District 3 and used on a regular basis to ensure that the required accuracy was obtained. Buckholz Traffic also inventoried HPMS sample sections and prepared revised county maps for District 3.

19e(1) RELEVANT PROJECT - TITLE AND LOCATION (*City and State*): Lem Turner Road Closed-Loop Traffic
Signal System
Jacksonville, FL

19e(2) RELEVANT PROJECT - YEAR COMPLETED - PROFESSIONAL SERVICES: 1998

19e(2) RELEVANT PROJECT - YEAR COMPLETED - CONSTRUCTION (*If applicable*): 2001

19e(3) RELEVANT PROJECT - BRIEF DESCRIPTION (*Brief scope, size, cost etc.*) AND SPECIFIC ROLE:

Check here if project performed with current firm:

A detailed set of plans and an extensive set of technical special provisions were developed for this 22-signal traffic control system, which utilizes fiber-optic master-to-local communications. Prior to initiating the design, a detailed system timing report was prepared for FDOT review, which contained information on existing signal operation and identified needed signal improvements.