Bid Tabulation Packet
for
Solicitation PNC2119168P1

Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Bid Designation: Public

BROWARD COUNTY
FLORIDA
Purchasing Division
www.broward.org/purchasing

Broward County Board of County Commissioners

Metric Engineering, Inc.

Bid Contact **Mariley Perez**
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Item #	Line Item	Notes	Unit Price	Qty/Unit	Attch.	Docs
PNC2119168P1--01-01	Continuing Engineering Services	**Supplier Product Code:**	**First Offer -**	1 / each	**Y**	**Y**

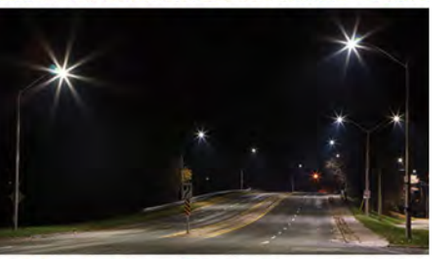
Supplier Total $0.00

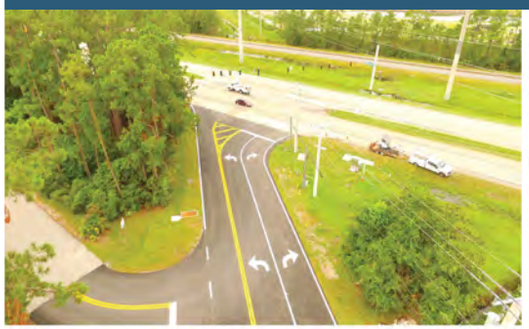
Metric Engineering, Inc.

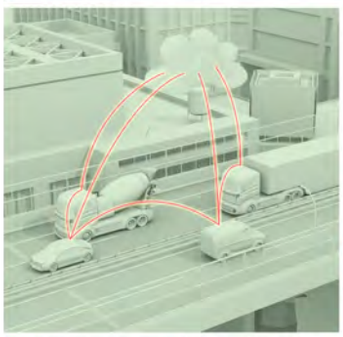
Item: **Continuing Engineering Services**

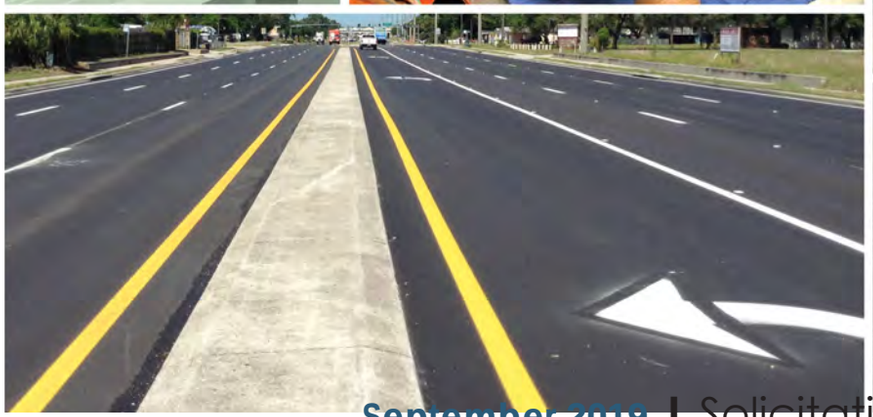
Attachments

Metric Engineering_PNC2119168P1 Continuing Engineering Services_09.11.19.pdf









September 2019 | Solicitation **PNC2119168P1**

EVALUATION CRITERIA FOR

Continuing Engineering Services for Traffic, Roadway, and Civil Projects

PREPARED FOR: BROWARD COUNTY

SUBMITTED BY:

METRIC ENGINEERING

EVALUATION CRITERIA

1) Ability of Key Personnel

(1) ABILITY OF KEY PERSONNEL

A. Describe the qualifications and relevant experience of the proposed Project Manager and all key staff to be assigned to this contract. Include qualifications and relevant experience of all subconsultants' key staff to be assigned to the contract. Identify County Business Enterprise (CBE) firms and their staff in the description.

Metric Engineering, Inc. (Metric) is one of the largest privately held minority-owned multi-disciplined engineering firms in the Southeastern U.S. with 365+ Florida employees. Headquartered in Miami, Metric was founded in 1976 on the principle of providing personalized consulting engineering services. Metric's core services include Program Management, Transportation Systems Management & Operations (TSM&O), Intelligent Transportation Systems (ITS), Advanced Traffic Management Systems (ATMS), Construction Engineering & Inspection (CEI), Technology Services, Transportation Management Center (TMC) Operations (including Active Arterial Management (AAM) and Integration Corridor Management (ICM), Traffic Operations, Traffic Engineering & Studies, Transportation Planning, Environmental Services, Roadway Design, Drainage Design, Structures Design, Project Development & Studies (PD&E), and Emergency Management Services (EMS).

Today, we are among the top consulting engineering firms specializing in civil and transportation projects. Engineering News-Record (ENR) Rankings:

- ✓ 2019 Top 500 Design Firms
- ✓ 2018 Southeast Top 100 Design Firms
- ✓ 2018 Top Construction Management-for-Fee Firms

With over 160 staff members dedicated to Traffic Operations & ITS, Metric is one of the largest ITS/ATMS design and communications consultants in the State of Florida. Much of our growth and diversification can be attributed to our efforts to understand our clients' emerging needs, as well as the expanding capabilities of our professionals. As an example, our Technology group has grown significantly in recent years, with service offerings such as Adaptive Signals Technology, Connected Vehicles (CV) Planning, Design, Implementation, Configuration, and Testing; Information Technology (IT); Network Architecture Design; Network & Wireless Security/Cyber Security; ITS Network and Device Management, Integration, and Maintenance; and Software Solutions (includes Website and Custom Application Development and Geographic Information Systems (GIS)).

Our multi-disciplinary workforce and strategically located regional offices (including an office in Broward County) enable us to provide both maximized local responsiveness and a diversified technical base. Our clients include local, county, state and foreign governments as well as private clients. We will continue to play a major role in the design, construction, maintenance, and security of our nation's transportation infrastructure. And we'll do this while providing the highest quality and personalized professional engineering services available. Our mission is to offer the personal service and attention our clients might receive from a smaller firm, while delivering the experience and resources of a national firm capable of handling even the most complex of projects.

Metric has planned, designed, integrated, inspected and managed over $500M in ATMS/ITS projects, $200M in ATMS/ITS CEI projects, integrated over a dozen ITS networks and supplied software and operations support throughout the State, performed $2.5B in traditional roadway CEI projects and more than $1 billion in roadway design work. Included in these projects is over $10M in work for Broward County. Based upon that experience, Metric is fully capable of supporting the County with an experienced managerial and technical engineering staff.

We are a full-service firm that specializes in these types of continuing services contracts. We have roadway design, traffic operations, signal retiming or migration, inspection staff, and ITS/ATMS engineers as well as high-level network professionals that, together, have designed hundreds of miles of ITS & Traffic systems alongside structural, civil and

transportation engineers that have supported our past efforts on the types of projects anticipated by the County. Our staff has completed over 100 major ITS/ATMS and related signal system projects in the past 15 years. During this time, Metric has been involved in the planning, design, review, integration, inspection, operation, maintenance, and management of ITS/ATMS services totaling $5B in overall Florida construction.

Overall, our commitment to excellence combined with our responsiveness has gained us an outstanding reputation in the ITS industry and more importantly, the trust and confidence of our clients. Our experience, innovative thinking and quality assurance program provides the necessary balance to ensure the optimum solutions to meet any clients' needs.

Metric Staff

The Metric Team has been performing identical work on very similar projects as we near the completion of our existing Broward County project and is proposing many of the same team members that work together on both the SEI and the current Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services project. In addition, we have added various subconsultants to provide a well-rounded, highly qualified team to ensure that all elements of a project are completed on time. Finally, our Team includes eight CBE certified firms to meet and/or exceed Broward County's CBE Goal of 25%.

The staff listed below are the key team members in each area of expertise. They are supported by literally hundreds of additional team members. We have tailored our team to include the best qualified staff and subconsultant team members in every discipline required in the RFP. Metric proposes one overall Project Manager and five Discipline Project Leads for this project in order to best manage work orders based upon the expertise needed. The five areas to be headed by our Project Leads are:

- Traffic Engineering Studies & Traffic Operations & Design
- ATMS/ITS Design
- Technology
- Construction Engineering & Inspection
- Roadway Design/Civil Engineering

Overall Team Leadership

Dale W. Cody, PE, PTOE– Project Manager | Metric's Senior Vice President of Production, Mr. Cody is a former District 5 Assistant District Traffic Operations Engineer with "hands on" experience in all aspects of ITS and traffic signal systems communication, traffic engineering, traffic studies, corridor retiming, and construction management. Mr. Cody has served as the Project Manager or Principal-in-Charge on more than 100 ITS projects and has managed or overseen more than 1,000 signal designs/reviews, 500 traffic studies, and the data collection of more than 8,000 locations. He has been involved in the development and/or modification of ITS and signal specifications, both as an FDOT employee as well as on the consultant side. He has also been involved in the development of Technical Special Provisions (TSPs) and Modified Special Provisions (MSPs) for various FDOT projects. He is a champion of TSM&O and the strategies associated with it, with special emphasis on the planning of Operations & Maintenance (O&M). When it comes to emerging technologies, he regularly presents to numerous clients (including Broward County), organizations, and schools (including University of Central Florida) on the advancement of Connected Vehicles (CV) / Automated Vehicles (AV) within the transportation industry. He is an invested partner and works with clients on developing standards, MOUs and security protocols in preparation for the CAV industry.

Mr. Cody has served as the Project Manager on the County's two previous contracts with Metric which means he has absolutely no learning curve when it comes to the management of this one. He knows the contract side (task authorizations, invoicing, CBE utilization goals) and the engineering side (design, specifications, QC, coordination).

Josh Reichert, PE– Deputy Project Manager; Traffic LEAD | As the former District 2 ITS Operations Program Manager, Mr. Reichert oversaw the North Florida RTMC operations, ITS Maintenance, Road Ranger Service Patrol and TIM Team programs. Additionally, he has been involved with various projects that worked to tie together agency networks in efforts to share resources and data and assisted with coordination efforts between ITS and construction. Before that he worked in District 2 Safety and Traffic Studies and has a wealth of experience with both topics. He brings his experience and understanding of ITS operations, CV/AV, connected infrastructure, Big Data, Smart Cities, and District 2/North Florida TPOs overall goals for future mobility. As Metric's Traffic Operations Manager, he oversees all of the division's projects, including the current Broward County Continuing Engineering Services, having a hand in the contract management and design coordination for each TWO. As Deputy Manager for this contract, he will continue this excellent coordination and maintain communication with the County.

Charles B. Stratton III – QA Manager | Mr. Stratton has 30 years of experience and currently serves as the Vice President of Traffic Operations and ITS, overseeing all Production, Integration, Inspection, and Operations. He has overseen or managed the construction, integration and network efforts for more than $350 million in ITS design. Throughout his career, he led the construction management and administration of roadway and ITS CEI projects; with more than 20 ITS CEI projects completed Statewide. Additionally, Mr. Stratton currently leads all of Metric's Traffic Incident Management (TIM) Team facilitation for six TIM Teams statewide (and in Puerto Rico) between multiple contracts. In recent years, he serves as Metric's Quality Assurance Manager overseeing production's submittals and ensuring deliverables are up to standard, submitted correctly and on-schedule.

Robert Linares, PE – Principal-In-Charge | Mr. Linares will serve as the Principal-in-Charge for this contract, and currently serves as Metric's Assistant Vice President of Roadway Design, PD&E, and Traffic Operations. He brings 19 years of experience and knowledge to the management of several engineering disciplines, project oversight, the development of staff and client needs, as well as technical planning and production experience.

Jessica Bloomfield, PE– QA/QC (Civil Engineering/Roadway Design/Drainage) | Ms. Bloomfield currently is Metric's Area Design Manager for North Florida and serves as a Project Manager and Roadway Engineer. She focuses on all aspects of highway design and planning, as well as drainage design, project management, and utility design and coordination. She is also responsible for preparing construction cost estimates and specification packages.

Craig Carnes, EI (18) – QA/QC (Technology/Operations/CEI) | Mr. Carnes currently serves as Vice President of ITS Operations and has over 18 years of ITS design and project management experience, and plays a major role with the District 2, District 5 and Puerto Rico Highway Transportation Highway Authority (PRHTA) TIM programs. Formerly, he served as an ITS Construction Project Manager for the FDOT Turnpike Enterprise, with responsibilities including CEI oversight, ensuring adherence to contractual and Department rules/regulations, integration of all ITS equipment and devices, review of final project testing, and project closeout. As Vice President of Operations, he directly oversees ITS CEI, TMC Operations and Technology.

Traffic Engineering & Operations

Steven Schindler, PE, PTOE– Senior Engineer: Traffic | As a Traffic Engineering Project Manager at Metric, Mr. Schindler brings over 26 years of experience providing extensive transportation engineering services. Mr. Schindler has been Project Manager/EOR on approximately 100 traffic operations and traffic safety studies for FDOT Districts 1, 5, and 6. Areas of proficiency include traffic operations, intersection analysis, signalization design, signing and pavement marking design, maintenance of traffic analysis and design, roadway repurposing "road diet" studies, pedestrian crossing analysis, traffic signal warrants, roundabout analysis, speed zone studies, traffic impact analysis, residential traffic calming plans, and project management. Mr. Schindler also has extensive experience in roadway design and construction engineering as well.

Christopher Dew, PE, PTOE– Senior Engineer: Traffic | Mr. Dew has 10 years of multi-faceted traffic operations and ITS experience, including design, operations, analyses, retiming and studies. He is a well-qualified Project Engineer who is IMSA Traffic Signal Technician Level III certified and has hands-on experience both in the field and in the office. Along with his traffic operations experience, Mr. Dew has designed ITS, new traffic signals and signal improvements/modifications for various intersections throughout Georgia and other states for both state DOT's and local government agencies. Along with operation and design, Mr. Dew has performed numerous traffic studies including the analysis of entire corridors, traffic signal warrants, driveway studies, origin/destination, safety studies and studies pertaining to developments of regional impact (DRI). He is knowledgeable in all things signal systems including adaptive vehicle detection, adaptive signal control, TSP, and more.

Ricardo Gonzalez, PE– Senior Engineer: ITS/Traffic | Mr. Gonzalez has over 21 years of traffic engineering experience, including lighting design using 3D modeling for photometric calculations, ITS/ATMS design, retiming with traffic simulation and field implementation, time-space development, programming of signal timings, and plans preparation. Ricardo has retimed over 100 traffic signals in Broward County and serves as a Signal Retiming Engineer and Lighting EOR for the projects that include these work groups.

Stefan Escanes, PE – Senior Engineer: ITS/Traffic/TSM&O | Mr. Escanes currently serves as Project Manager and Data Collection Manager for the South Florida Region. His expertise includes managing multiple concurrent work orders and data intensive projects through the various traffic operations, transportation planning, and PD&E Study contracts. Additional experience includes traffic analyses for Traffic Operations and PD&E Studies using the latest traffic simulation software including Vissim, Synchro, Sidra, Corsim and more. His years of experience includes AAM and signal retiming and implementation in Florida. He has also worked on adaptive and TSP projects, knowing when to apply these operational technologies for maximum agency benefit. Stefan is one of the main transportation engineers at Metric who performs in-depth traffic modeling and simulation services, including for roundabouts statewide. In addition, Mr. Escanes is IMSA Traffic Signal Technician Level II certified and is proficient in the use of all of the latest data collection equipment, PTMS count collection, signal controller programming, and wireless ITS networks.

Penny Kamish – TMC Operations Manager | Ms. Kamish has 30 years of experience in Management of Traffic Operations and the dissemination of real-time traffic information. She has been a member of the North Florida Freeway Management Team, now referred to as Traffic Incident Management (TIM), for 20 years. She also has a strong record of service within Public/Private sectors coordinating scheduled and non-scheduled traffic events (incidents, special events, hurricanes, major roadway closures and wildfires). As Metric's TMC Manager, she oversees all of Metric's TMC Operations contract which includes innovative TSM&O strategies such as ICM, AAM, and Express Lanes operations. With this experience, she is an expert at Performance Measures and the creation and reporting of these through summary dashboards.

Sijong Jo, PhD – Senior Designer: Traffic | Dr. Jo has an extensive background in all phases of traffic engineering and transportation modeling. He is especially proficient in computer modeling, traffic operation analysis, traffic and revenue forecasts and has authored several publications on these and similar topics. Dr. Jo has also spearheaded the completion of numerous traffic engineering assignments in the United States and in several foreign countries.

John Battle – Senior Designer: Traffic | Mr. Battle has over 14 years of experience (all of which are with Metric) and currently serves as the Traffic Operations Section Leader, where he has completed hundreds of traffic studies and analyses. Additionally, he served as the Data Collection Manager for 12 years (before his promotion to Traffic Operations Section Leader), overseeing the data collection team and all data collection activities. During that time, he oversaw the data collection on every Metric project, amounting to over 9,600 locations Statewide. Mr. Battle is a task lead on many traffic studies contracts and provides Traffic Operations design support to all of Metric's design projects throughout the State. He is experienced in all aspects of arterial retiming, signal operations, and data collection needed to create and design effective signal systems and intersections.

Justin Schick, PE – Engineer: Lighting/Signals | Mr. Schick serves as an ITS/Traffic Operations designer where, primarily, his focus is on plans preparations and lighting design for numerous projects over the last three years. Day-to-day responsibilities include photometric analyses, lighting design, voltage drops, plans preparation, cost estimates and quantities.

Patrick Eklin – Data Collection Manager (CFL) | Mr. Eklin served as a Data Collection Technician in Metric's Lake Mary office before being promoted to Data Collection Manager. In this role, he oversees Metric's entire Central Florida's Data

Collection Team and all data collection activities that support Districtwide/Continuing Services Contracts and a wide range of projects. Overall his specific data collection experience includes 24-hour volume/classification counts, 48-hour volume/classification counts, 7-day volume counts, pedestrian counts, turning movement counts for traffic studies, signal retiming, access management studies, railroad queue counts, before and after speed studies, and pedestrian crossing counts. Much of his data collection experience has been to support arterial retiming studies and signal timing development/implementations.

Roadway Design, Maintenance of Traffic & Utility Coordination

Brian Fuller, PE – Senior Roadway Engineer/Utility Coordinator | Mr. Filler has 28 years of experience and has served Metric as a Project Manager and Senior Highway Engineer since 1996; he has a strong background in all aspects of roadway design. Mr. Fuller was employed by the FDOT for five years as a Roadway Project Design Engineer. He is responsible for the complete assembly of roadway construction plans on complex, major, and minor projects. His experience includes roadway design, traffic control design, utility coordination, and quality computations. Mr. Fuller has worked on a number of intersection improvement designs for Broward County. His recent responsibility is to maintain project schedules and budgets without compromising safety, environmental concerns, constructability, or Federal and State standards and policies.

Reja Rabbi, PE – Roadway Engineer | Mr. Rabbi has nine years of experience and currently serves as a Senior Project Engineer in Metric's Miami office and is experienced in a wide variety of engineering areas. He has significant South Florida project experience and is skilled in MicroStation - FDOT SS4, Corridor/3D Roadway Design, GEOPAK, S&PM Design, Signalization Design ERC, Scheduling FDOT Specification Package and CITS.

Harold McKnight - Utility Coordinator | Mr. McKnight has 24 years of experience and serves Metric as a Roadway Designer on complex, major, and minor highway projects since 1999. His experience includes the design and preparation of roadway plan/profiles, cross-sections, drainage structure sheets, traffic control plans, and quantity computations. Mr. McKnight is proficient in the use of MicroStation and GEOPAK. He also manages the majority of the utility coordination for Metric's Central Florida office including projects that span the State of Florida and specifically Broward County.

ITS/ATMS Design

Rolando Ramirez, PE – Senior Engineer: ITS | Mr. Ramirez, serves as Metric's Director of ITS/Traffic Operations and has 20 years of diverse engineering experience, including extensive traffic operations and ITS design and planning over the past decade. He currently serves as an ITS Project Manager and has led the design and planning of nearly 60 ITS projects. Prior to working at Metric, Mr. Ramirez worked as a transportation engineer gaining significant experience in traffic demand modeling (macro and micro level), Development of Regional Impact (DRI) studies and Traffic Impact Analyses. Along with working with the private sector, Mr. Ramirez worked closely with public agencies on Long Range Transportation Plans (LRTP), air quality, signal warrants and eminent domain projects. Rolando has been involved in the development and/or modification of ITS specifications and has also written Technical Special Provisions (TSPs) and Modified Special Provisions (MSPs) for various traffic and ITS projects.

Renata Leach, PE – Senior Engineer: ITS | Mrs. Leach joined Metric after completing her Electrical Engineering degree and has been with Metric ever since, a total of 14 years. She serves as an ITS Project Engineer & Project Manager and has worked on dozens of influential traffic and ITS projects, such as the District 4 TSM&O program and Statewide AAM projects. As Metric's ITS Production Manager, she leads every ITS design effort. Her expertise and emphasis is electrical and power design for ITS systems and always plans for the future needs of CV-related technologies.

Jessica Knox, PE, PTOE – Senior Engineer: ITS/Traffic | Ms. Knox has served in numerous Traffic Operations, ITS, and TSM&O roles, diversifying her experience within the industry. She started as an RTMC Operator; monitoring and analyzing real time traffic data. She performed as an in-house Turnpike Traffic Services Specialist, reviewing and evaluating traffic plans and studies. She also has experience as an ITS Engineer, including the design of freeway and arterial networks, ATMS, network integration and emergency pre-emption. Mrs. Knox also served as an in-house consultant for District 5 performing plans reviews, systems engineering documentation preparation, and assisted the client with daily operations.

Mrs. Knox moved to Jacksonville in June of 2016, where she has since been working on the District 2 TMC Consultant Contract. She is responsible for plans reviews, assisting with minor ITS design projects constructed through the ITS Maintenance Contract, reviewing TSM&O policy and procedure documents developed by Central Office, and assisting the client with any tasks necessary. diverse experience has provided Mrs. Knox with knowledge and understanding of many facets of the Traffic Operations Program for several FDOT Districts and Statewide efforts.

Technology (Networks, ITS Maintenance & Integration, Software Solutions)

Demetrius Lewis – Network/CV Specialist; Technology LEAD | Mr. Lewis brings more than 14 years of experience in network engineering, administration, design and integration of local- and wide-area networks (LAN/WAN). He was also responsible for maintaining FDOT's and Central Florida Expressway ITS telecommunications system, technical contract writing, management and negotiations, fiber-optic network design and management, reviewing network design plans and fiber schematics, SunGuide® software administration and integration, and interfacing and coordinating with multiple interagency disciplines and externally to successfully develop RFPs and deploy ITS projects. Mr. Lewis' expertise also includes over 10 years of ITS experience which include his experience serving as an ITS Project Manager for FDOT District 5, where he was responsible for overseeing ITS engineering development and deployment. Mr. Lewis' experience includes managing ITS projects, budgets and schedules, and overseeing the installation of ITS infrastructure and subsystems. As Metric's Technology Manager, he oversees Networks, ITS Maintenance & Integration, and Software Solutions. He has served as a CV expert on all of Metric's CV projects which include working hand-in-hand with our clients to test and define specifications, security protocols and more.

Scott Agans, ENS – Network Specialist | Mr. Agans is a Senior Network Engineer with 20+ years of experience, specializing in ITS, IT and telecommunications. Mr. Agans has "hands-on" experience in the ITS field, including network engineering, systems integration, switch routing, premise wiring and configuration as well as fiber optic cable design, construction, troubleshooting and testing. He has over 10 years of experience in managing and performing Fiber Optic installations, seven years of experience in managing major ITS integration projects and five years' experience managing ITS CEI contracts.

Richard Phillips – Network Specialist | Mr. Phillips is a Senior Network Engineer and brings an extensive experience in a broad range of technologies. He is proficient in secure network design, maintenance and administration for single and multi-tenant environments which means he is experienced with large and small IT environments, teams and budgets. Mr. Phillips is adept at developing effective security policies and procedures, project documentation and milestones, and technical/business specifications.

Kevin Boston – ITS Integration/Maintenance Specialist | Mr. Boston joined Metric as an Integration Technician and has successfully worked his way into Systems Integration Project Management. In his current role with Metric Engineering, Mr. Boston's responsibilities include but are not limited to installation, testing and integration, maintenance and troubleshooting of various ITS devices. Kevin is currently assigned to the FDOT District 5 ITS Maintenance Services Contract. He has over nine years of ITS experience, with six years of experience in managing major ITS integration and maintenance projects.

Eric Wyllins – ITS Integration/CV Specialist | Mr. Wyllins serves Metric as a Project Manager within the Technology Group. Mr. Wyllins has over 17 years hands-on experience in construction, engineering and inspection and materials testing as well as being the integration field lead on major ITS deployment projects. This multifaceted experience provides him with the insight into the role of Sr. Inspector as well as a firm understanding of the key elements required to integrate, test and turn up a major ITS deployment. He is also leading the way in CV/AV by assisting in the design, integration, and deployment of RSUs for large scale CV/AV projects. This multifaceted experience provides him a firm understanding of the key elements required to manage, integrate, test and turn up a major ITS and CV deployments.

Simone Babb, GISP – GIS/CV Specialist | Ms. Babb has over 17 years of experience utilizing her GIS capabilities within the transportation industry. She formerly served as GIS Coordinator/Management Analyst for FDOT District 5 with

responsibilities such as GIS scope development, application development, and GIS and transportation planning tasks to include managing the Urban Area and Federal Functional Classification and Level of Service (LOS) update process for two decades. Ms. Babb served on the FDOT D5 Level of Service Task Team and also was an integral part of the GIS Functional Steering Committee and D5 GIS Users' Group. Ms. Babb was instrumental in the coordination and set-up of the District Five's Enterprise GIS system and the formation of the District's GIS Users' Group which involved working with the District on the development of their GIS Strategic Plan. Overall, Ms. Babb continues to be involved in Statewide GIS efforts and future initiatives and is active in the GIS community, attending conferences and workshops to keep up with technology changes and best practices in industry. She uses GIS industry practices to develop practical solutions for reporting and decision-making that is cost effective. As Metric's Software Solutions Manager, she has assisted with several District's initiatives including website re-developments and upkeep efforts, transportation planning activities, GIS services, assists with various data collection and application developments, and various transportation planning activities including performing reviews/analyses for various projects. More recently, Ms. Babb has been directly involved in the CV interoperability technology research, testing, design and systems integration of RSUs devices.

Drainage, Structures, Environmental

Alexander Caso, PE – Structures Director | Mr. Caso has 25 years of structural design experience, including concrete and steel bridges, retaining walls, and ancillary structures. His expertise includes various alternative delivery methods such as design-build and PPP projects. He has served in project management roles on projects for the FDOT, CFX, and numerous municipal clients throughout the state of Florida. His structural design knowledge includes fixed and movable bridges, structural rehabilitation, inspection and load rating, post-design construction services, plans production and conducting QC/QA reviews.

Michael Holt, PE – Drainage Manager | Mr. Holt recently joined Metric with 12 years of experience and serves as Drainage Department Manager, having worked as the Discipline Lead and/or Engineer of Record for various drainage tasks throughout his career. His group specializes in drainage design, providing stormwater management design and permitting support for other disciplines, as well as serving various FDOT Districts, municipalities, and private clients. Project experience includes drainage design for stormwater retrofits to resolve localized flooding, RRR roadway projects, highway reconstruction projects, and interstate/interchange design/construction in both the Design-Bid-Build and Design-Build models. Mr. Holt is proficient with MicroStation, AutoCAD, and GIS, as well as multiple stormwater modeling programs, including adICPR, Ponds, MacStorm, ASAD, XPSWMM, and HCSWMM.

Ryan St. George – Senior Environmental Scientist | Mr. St. George started at Metric in April 2015 and has a total of 15 years of experience. Prior to joining Metric's team, he spent eight years as a Natural Resource Specialist II for Broward County's Aquatic and Wetland Resource Program primarily serving as a lead environmental resource permit application reviewer and natural resource protection compliance/enforcement officer. Before joining Broward County, Mr. St. George also spent 4 years with Miller Legg as an Environmental Scientist performing a wide variety of wetland and wildlife support services for public and private development projects. In addition to project management, he now provides, contract oversight, environmental permitting, construction compliance, wetland delineation, mitigation monitoring, natural resource survey, and related services for a variety of Metric projects. Mr. St. George has strong relationships with Federal, State, and local regulatory staff and an in-depth familiarity with environmental permitting and compliance requirements in Florida.

In-House Staff

Margaret "Maggie" Maher – Engineer Intern | Ms. Maher has proven transportation engineering and design experience, including site design, ADA curb ramps, guide rail, and typical roadway sections. She currently provides a multiride of in-house support services for Broward County such as plan preparation, cost estimation, site reviews, MOT design, QC checks, presentation prep, comment resolution for roadway, sidewalk, drainage, and traffic projects.

Sonia Shreffler-Bogart, PE, PTOE – Senior Engineer: Traffic | Ms. Shreffler-Bogart's expertise is in transportation planning and traffic operations. Ms. Shreffler-Bogart's 27 years of experience includes but is not limited to traffic impact analysis, transit studies, Development of Regional Impact (DRI), Preliminary Development Agreement for DRI PDA), Notice of Proposed Change to a DRI (NOPC), Land Use Change Amendments (LUA), Project Development & Environment Studies

(PD&E), Major Use Special Permit Studies (MUSP), Traffic Signal Warrant Studies, Corridor/Arterial Analysis, Trolley/Transit Circulator Feasibility Studies, Safety and Operations Studies. Ms. Shreffler-Bogart experience includes assignments related to project management of traffic/transportation engineering and transportation planning/site development projects. Tasks include working closely with other disciplines on multi-faceted projects; establishing methodologies and performing analyses; writing technical reports; communicating findings with staff; giving presentations of findings to clients, agencies and the public. Projects completed were in private and public sectors at international, state, regional and local levels.

Construction Engineering & Inspection (CEI)

Peter Medico, PE – CEI Senior (Roadway/Bridge) Inspector | Mr. Medico has more than 30 years of experience focused on Bridge and Roadway CEI and Contract Administration. His work has included quality assurance reviews, presentations to dispute review boards, claims analysis and claims resolution. His involvement encompasses public and private sector projects, major interstate and urban roadway design and construction management with emphasis on service and quality control. His recent assignments as the Sr. Project Engineer on various FDOT Districts 1, 3, 4, 6 and 7 and Broward County projects (Including our current Broward County contract) have provided him with hands-on quality CEI experience. Mr. Medico has personally prepared and submitted five FDOT Final Estimates and supervised the preparation of 18 Final Estimates.

Mauricio Pinzon – Project Administrator/CSS | Mr. Pinzon has over 18 years of experience in roadway design and construction engineering inspection projects. His experience includes inspection of signalization, structural fabrication, concrete, drainage structure installation, earthwork, asphalt paving, lighting, ensuring contractor's compliance with MOT, and is proficient with Broward County, FDOT and SFWMD reporting and documentation procedures. Mr. Pinzon has worked on numerous Broward County projects as a Project Administrator/CSS. Mr. Pinzon also worked as a Construction Engineer on several projects for the National Highway Institute and Urban Development Institute in Bogotá, Colombia.

Abdallah "Abi" Asaseh – CEI Senior Inspector | Mr. Asaseh has more than 25 years construction experience with the last 19 years specifically for FDOT roadway and bridge construction projects in southeast Florida. Mr. Asaseh is knowledgeable in pay item measuring, computations, and accurate site source record documentation. He is an excellent team player and mentors the staff who are new to the industry. He has worked on projects that include signalization, roadway widening, guardrail, drainage, sound walls, bridges, earthwork, concrete, earthwork, ITS, signage and pavement markings, landscaping, and toll facilities.

Subconsultants

The Metric Team (At-A-Glance)

The below is a quick reference of Metric's overall proposed Team. Overall, Metric proposes 16 subconsultants – eight of which are CBE certified with Broward County. A copy of the below chart as well as our Team's organizational chart and IMSA/CTQP matrix is provided following this section along with key staff resumes and applicable certifications and licenses.

FIRM NAME *Overview of Proposed Role(s)*	APPLICABLE REQUIRED FDOT PREQUALIFICATIONS (MINIMUM REQUIRED BY PRIME: 3.1, 3.2, 6.1, 7.1, 7.3, 10.1)																					CERTIFICATION	
	3.1 - Minor Highway Design	3.2 - Major Highway Design	4.1.1 - Miscellaneous Structures	6.1 - Traffic Engineering Studies	6.2 - Traffic Signal Retiming	6.3.1 - ITS Analysis	6.3.2 - ITS Implementation	6.3.3 - ITS Traffic Engineering Systems Communication	6.3.4 - ITS Software Development	7.1 - S&PM	7.2 - Lighting	7.3 - Signalization	8.1 - Control Surveying	8.2 - Design, Right-of-Way & Construction Surveying	8.4 - Right-of-Way Mapping	9.1 - Soil Exploration	9.2 - Geotechnical Classification Lab Testing	9.3 - Highway Materials Testing	9.4.1 - Standard Foundation Studies	9.5 - Geotechnical Specialty Lab Testing	10.1 - Roadway CEI	10.3 - Construction Materials Inspection	10.4 - Minor Bridge & Miscellaneous Structures CEI	15.0 - Landscape Architect	CBE	SBE
Metric Engineering, Inc. (Metric) [1] *Prime Consultant*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓			✓		✓	✓	✓			
EBS Engineering, Inc. (EBS) [2] *Civil Engineering / Roadway Design / CEI*	✓									✓		✓									✓				✓	✓
*Keith & Associates, Inc. (Keith) [3] *Civil Engineering / Roadway Design / Utility Coordination / SUE / CEI*	✓	✓		✓	✓					✓	✓	✓	✓	✓	✓						✓			✓		
*HP Consultants, Inc. (HPCI) [4] *Traffic Engineering / ITS / Geotechnical*				✓	✓	✓	✓			✓		✓				✓	✓		✓		✓				✓	✓
*F&J Engineering Group, Inc. (F&J) [5] *CEI*																					✓	✓	✓		✓	
*Florida Engineering & Testing, Inc. (FE&T) [6] *Construction Materials Testing*																✓	✓		✓						✓	
*Albeck Gerken, Inc. (AGI) *an Iteris Company* [7] *ITS & ATMS Design / Signal Migration*				✓	✓	✓	✓	✓	✓	✓		✓														
Wantman Group, Inc. (WGI) [8] *Complete Streets / Survey / SUE*	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓						✓			✓		
BMA Consulting Engineering, Inc. (BMA) [9] *Signalization / Intersection Design / Miscellaneous Structures*	✓	✓	✓							✓	✓	✓									✓	✓			✓	
*TranSystems Corporation (TranSystems) [10] *Mechanical Bridge Inspection / Miscellaneous Structures*	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓									✓	✓	✓			
*Testing, Engineering, & Consulting Services, Inc. (TEC) *an SGS Company* [11] *Concrete Cast Beams Testing*																										
*Southeastern Archaeological Research, Inc. (SEARCH) [12] *Cultural Resources*																										
*Stoner & Associates, Inc. (Stoner) [13] *Survey & Mapping*																									✓	
Compass Point Surveyors, PL. (CPS) [14] *SUE*																									✓	
Tierra South Florida, Inc. (TSF) [15] *Geotechnical / CEI*																✓	✓	✓	✓	✓	✓	✓				
Duland Design, LLC. (Duland) [16] *Landscape Architecture*																									✓	✓
Adept Public Relations, LLC. (Adept PR) [17] *Public Involvement*																									✓	✓

** On Previous Contract*

Albeck Gerken, Inc. (AGI) [An Iteris Company]

Proposed Role: ITS/ATMS Design/Signal Migration

AGI, an Iteris company, is a traffic operations engineering services provider headquartered in Tampa, FL, with offices in Orlando and two in other states. AGI specializes in TSM&O, which includes traffic operations engineering, ATMS operation and transportation analysis. In July 2019, Iteris, Inc. (Iteris) completed its acquisition of AGI.

AGI's highly respected team of traffic operations engineering and consulting experts join Iteris equally respected team of experts in planning, signal operation, signal and ITS design, integrators and transportation analytics. This combined knowledge enables the firm to provide comprehensive services ranging from initial traffic impact studies, transportation modeling, planning, systems engineering, and detailed design, through implementation and performance monitoring. Iteris combines the knowledge of transportation engineers, systems engineers, system integrators, software engineers and transportation planners to offer an unmatched combination of talent and experience. Iteris develops and deploys innovative solutions that help agencies reduce traffic congestion, enhance transit use, monitor and manage transportation networks and provide greater access to reliable traveler information.

AGI serves as a subconsultant to Metric on previous and the current Continuing Engineering Services where they have been responsible for performing the database conversions and deployment through Broward County's Trafficware ATMS.now central system software. This included the translation of Urban Traffic Control System (UTCS) signal timings to be programmed in the local traffic signal controllers. AGI successfully deployed database conversions for over 1,000 intersections within the County.

AGI has developed successful in-house workforce development programs which include Signal Timing Specialist, ATMS Operator, Transportation Analyst, and Corridor Manager. AGI's staff is well-known for its highly trained, focused professionals that work on signal systems and deploy signal timings every day. Their staff includes nine PTOE's, thirteen IMSA Level III certifications, and nine (Signal Timing Specialists. Our staff is trained in depth on traffic control equipment programming, implementation, and follow-on operation, as well as central control hardware and software, from numerous manufacturers. Speaking of staff, proposed AGI team members include:

MORE ABOUT ITERIS

Iteris, a publicly-traded corporation (NASDAQ: ITI), is the market leader in applying informatics solutions to the transportation industry since 1987. Iteris' staff have decades of expertise in traffic management, along with superior services and patented products that help detect, measure, and manage traffic and vehicular performance; minimize traffic congestion; and empower Iteris clients with solutions to better manage their transportation networks. The firm is headquartered in Santa Ana, CA with nationwide coverage.

Joe Molinaro, PE, PTOE – ATMS Manger | Mr. Molinaro has over 25 years of experience working in the fields of ATMS operations and Arterial Program Management and manages a team of engineers and technicians that provide transportation system management and operations support to public sector clients. Mr. Molinaro also has extensive experience in traffic signal system hardware and software installation and operation. He has worked with various traffic signal controller platforms and manufacturers' hardware and software, including NEMA TS 1, NEMA TS 2 (Type 1 and Type 2), 170, 2070, and ATC; and has worked with various system architectures including both distributed closed loop and centralized.

Randall Clark – Senior ATMS Specialist | Mr. Clark has been with AGI since 2010 and is an IMSA certified traffic professional. He has over 39 years of experience working in the field. Randy specializes in ATMS operations, database conversions, cabinet level operation, responding to citizen complaints, and implementation projects. His duties consist of providing transportation system management and operations support to public sector clients.

Wantman Group, Inc. (WGI)

Proposed Role: Complete Streets/Survey/SUE

WGI is a national design firm with nearly 600 professionals in 18 offices across Florida, Texas, Michigan, Illinois, Indiana, and North Carolina. Founded in South Florida in 1972 by a dedicated professional engineer, WGI grew from a private client base and diversified into the public sector by growing their expertise to include Land Development/Municipal Engineering, Traffic and Transportation Engineering, Parking Solutions, Geospatial Services, Subsurface Utility Engineering, Structures, Landscape Architecture, Environmental Sciences, Architecture, Land Planning, MEP Engineering, Water Resources, and Creative Services. They will provide Complete Streets services including supporting Survey and SUE efforts.

Glenn Havinoviski, PE – ITS Planning & Implementation | Mr. Havinoviski is an international expert in ITS who has served as a practice builder, practice leader, and office principal, providing project management and technical leadership for transportation technology and operations projects in the U.S. and abroad. His expertise is rooted in transportation systems management and operations activities, utilizing the systems engineering process to identify useful mobility solutions, including applications involving CV/AV, ICM, interactive traveler information and mobility services, adaptive signal control, bus rapid transit and related traffic signal priority operations activities. He has worked with a wide variety of project participants, including Federal, state and local agencies including toll and transit authorities. Glenn is particularly known for being sensitive to various enforcement, multi-modal, and local operational issues.

Lisa Nisenson – New Mobility / Complete Streets | Mr. Nisenson is a respected urban designer known for combining timeless community design and innovation, with focus on fast-tracking advanced planning techniques and emerging technologies. Her urban design experience includes transit-oriented development, green infrastructure and energy-efficient land use. She has been a new mobility and smart city consultant, researcher on smart mobility, and urban planning start-up founder (GreaterPlaces). Currently she is participating in national efforts to develop next generation planning tools to incorporate uncertainty and trends into plans and policies. Her specialty is designing processes to create custom roadmaps, policy updates, and strategic plans.

Joseph Edgar, PSM – Surveyor & Mapping | Mr. Edgar has more than four decades of experience providing surveying and mapping services to meet client quality, cost and schedule requirements. His experience includes control survey mapping, maintenance right-of-way mapping, platting, condominium documents, subdivision design, boundary surveys, GPS, and route surveys. Joe has served on numerous surveying and mapping projects for the FDOT.

Jay Scagliola, PSM – Senior SUE Field Supervisor | Mr. Scagliola has been surveying in Florida since 1971 and is highly skilled in all phases of land surveying, including mapping performance standards, data collection and calculation, as well as drafting. Jay has 25 years of experience in subsurface utility locating, design and management services on major public infrastructure and site development projects including roadways and asset inventories. His widespread network of contacts and utility locating knowledge is well respected by municipal and private as well as Florida Department of Transportation. His responsibilities include designating and utility locating coordination, quality assurance, and final project review of survey processing and computer drafting.

Keith & Associates, Inc. (Keith)

Proposed Role: Civil Engineering/Roadway Design/Utility Coordination/SUE/CEI

Keith was incorporated as a Florida corporation in 1998. They provide civil engineering, transportation design and development, construction management, comprehensive planning, landscape architecture, surveying and mapping and subsurface utility engineering services. Their staff combines the technical work experience of over 160 professionals, each with an extensive working knowledge of local and regional projects.

Keith has extensive experience in providing professional civil engineering and roadway design services required for the development or redevelopment of land including the permitting, design, coordination and construction of roadway / parking area(s), stormwater, potable water, utility, and wastewater systems. Keith's staff has provided comprehensive planning and engineering services in various disciplines involving many government agencies, institutions, and municipalities. Keith provides expertise in Land Surveying which is evidenced by their staff's combined South Florida surveying experience of over 100 years. Services include boundary, topographic, control, wetland, mitigation, route, aviation, bathymetric, GIS, GPS, as-built, American Land Title and coastal surveys, legal descriptions, right-of-way mapping, design base sheets, title review, DTMs, differential leveling, construction stakeout, platting, expert witness surveying, and mapping services. The firm maintains 10 full-time field crews with the appropriate MOT and Safety training.

Lisa Bernstein, PE – VP of Traffic Engineering | Ms. Bernstein is an accomplished transportation engineer with over 30+ years of experience in both the public and private sector. She has reviewed and managed projects from roadway construction to traffic impact studies. She is proficient in plan design and review including site plans, signing and marking, signalization, traffic control agreements, permit review and submittals. She has prepared and reviewed trip generation reports, traffic impact studies, signal warrant analyses, parking studies, roadway compliance reports, crash analyses and land use amendments.

Lori Treviranus, PE – VP of Transportation | Ms. Treviranus has over 18 years of experience in civil engineering, providing the highest quality infrastructure and facility solutions to transportation agencies, local governments, private developers and institutional clients. She is experienced in roadway design, intersection development, super-elevation transitions, roadway modeling, cross-sections, pedestrian/bike paths, master planning, hydrology/hydraulic studies, cost estimation, stormwater control plans preparation, drainage and utility design, NPDES permitting and SWPPP preparation and

implementation. In addition, she is familiar with the surveying aspect of civil engineering and has experience working with sustainable designs. Typical scopes of work she has been responsible for include acquisition and due diligence tasks, creation of conceptual plans and assistance with funding throughout the project phases and public outreach activities.

James Thiele, PE – Project Manager III (Civil/Roadway) | Mr. Thiele has over 30+ years of experience in performing Land Development Civil Engineering in South and Central Florida as well as central Pennsylvania. His experience includes all aspects of site planning, grading and drainage, sanitary sewer collection, water distribution system design and construction supervision services. His experience includes senior level project oversight and management of multiple stages of the design and development processes for residential, recreational, commercial, industrial and institutional developments. His ability to reduce complex technical language to readily understandable terms has afforded him numerous assignments representing governmental bodies for the firms he has worked for. Utilizing his vast experience, he has mentored scores of other Engineers that have gone on to successful noteworthy careers. All the projects Mr. Thiele has worked on required interaction and coordination with multiple governing agencies as well as other professional disciplines. Knowing the process from conception to project close-out affords him the ability to foresee issues that affect costs, schedule and quality of a project. He uses this knowledge and experience to quickly address and solve any problems that inevitably arise during a project and proactively seeks to remediate any issues for the client's best interest.

Alex Lazowick, PE, PMP – Civil Engineer | Mr. Lazowick was introduced to civil engineering and construction by his grandfather, Mr. Bill Keith, founder of the firm. He is eager for the challenge to be the third family generation professional working to provide quality developments within the South Florida community. Project Manager: Mr. Lazowick has gained experience in civil engineering design projects including water, sewer and drainage systems, roadway design, permitting, and construction administration services. He understands the importance of working together as a team to quickly identify and establish project goals and achieve successful results in the most expedient and cost-effective manner. His qualifications include knowledge with AutoCAD Civil 3D, Navisworks, Revit, BIM, Microsoft Office, computer networking, and he possesses excellent communication skills. Mr. Lazowick, as the firms BIM Manager, oversees all 3D oriented projects. From Laser Scanning to 3D GIS, Mr. Lazowick is tasked with getting the job done. He manages the client relationship and QC's all 3D deliverables. He is always eager to try new software and find new workflows to help save our clients time and money. He is Autodesk Certified and well qualified with all Autodesk, ESRI and Lecia software.

Mark Mitchell – Senior Utility Coordinator | As a SUE Senior Project Manager for Keith's Utilities Division, Mr. Mitchell is responsible for scheduling and supervising field crews, conducting utility field meetings, utility records research, conflict analysis and determining if additional utility investigation is needed for assigned projects in South Florida. He completed projects from beginning phases to final delivery; which included preparing and submitting fee proposals, coordinating with clients, being able to setup projects for field crews and conducting field visits when trouble shooting is required; download and process collected data; performed quality control and finalize for delivery while keeping clients informed on a daily basis. His experience also includes creating DTM's, Topo's, Tin Models, PNC's and Test Hole summary spread sheets. Mr. Mitchell provides a liaison between designers, utility agencies and owners on behalf of clients to provide utility coordination services, providing documentation, inter-coordination and maintenance of files of all activities for each utility agency.

Rebecca Green – Utility Coordinator | Ms. Green has developed a comprehensive understanding of the processes involved in utility coordination as well as subsurface utility engineering since starting with KEITH in 2016. She is familiar with FDOT utility procedures in accordance with the Utility Accommodation Manual and has worked to develop relationships with UAOs statewide. Ms. Green is actively furthering her professional studies, pursuing a bachelor's degree in construction management.

Dwayne Vaughn, PE – VP of Construction Management | Mr. Vaughn is a results-oriented professional offering over 33 years of broad technical experience in the areas of aviation, rail transit, and roadway transportation programs with the last 17 years focused on program management, design management and construction management. He has extensive experience in management of governmental contracts acting in an owner's rep, construction manager and/or program manager capacity. During his career, Mr. Vaughn also provided preliminary engineering services on several large rail transit projects both nationally and internationally. He also assisted in the management of Intermodal program developments both

in Broward and Dade counties in Florida. Mr. Vaughn also has General Engineering Consulting experience on FDOT programs.

Daniel Checchia – VP of Location Services | Mr. Checchia has over 21 years of experience in transportation engineering, surveying, civil design and construction related fields, with expertise in SUE, including Utility Coordination. His duties are to oversee the day-to-day operations of all Subsurface Utility Engineering and Coordination projects for our firm. Mr. Checchia is responsible for assisting clients with utility research, identification, data management and coordination. Besides having developed a strong rapport with local utilities and municipalities, his knowledge and experience in the SUE process allows him to easily recognize utility conflicts during design and construction. He has been involved on a variety of projects such as design, design build and private sector work. Mr. Checchia's understanding of the Quality Levels in the ASCE Guidelines enables him to manage a project from pre-design to post construction, negotiating to minimize utility impacts and suggesting and implementing cost effective timely resolutions for utility conflicts. Mr. Checchia is fully knowledgeable of the FDOT Utility Coordination process, with eight years of involvement working on multiple types of transportation projects.

EBS Engineering, Inc. (EBS) - *Certified SBE / Broward County CBE*

Proposed Role: Civil Engineering/Roadway Design/CEI

EBS ENGINEERING, INC.

EBS, a certified Broward County CBE, is one of the most reputable growing engineering firms in Florida. It was founded in Miami, Florida in 1994. Over the past 25 years, EBS has demonstrated its ability to provide innovative, cost effective and high-quality engineering and construction services to a broad group of clienteles. Their services include General Civil/Roadway Design; Environmental Engineering - Contamination Assessment, Risk Assessment and Remediation; Drainage/ Stormwater Engineering; Water & Sewage Services; Infrastructure Improvements; Construction Management/Cost; Estimating/Inspection Services; and, Program/Property Management.

Joseph Chan, PE – Senior Project Manager | Mr. Chan has over 37 years of responsible and diversified engineering experience in the design, construction management, and construction inspection of highway projects. He has demonstrated expertise in management, establishing and maintaining client relationships, solving technical problems, quality control, meeting tight project schedules/budgets, teamwork, and coordination in multi-disciplinary service environments. Mr. Chan has overseen all aspects of planning, production, scheduling, quality control, coordination, invoicing, and client relations.

Ricardo Martinez – Construction Manager | Mr. Martinez is a Construction Manager with over 41 years of extensive engineering design and construction management experience with increasing responsibilities of airports, industrial and municipal facilities. He was formerly a Registered Professional Engineer and Licensed General Contractor in Florida. Mr. Martinez is proficient in contract administration, coordination and expedition of construction contracts for new and existing facilities. Mr. Martinez has expertise in developing Process Flow Diagrams and P&ID's, equipment specifications, cost estimates and cost control, and environmental permitting. Competent in preparation of appropriation requests, preparation of facility design, supervision of construction activities and coordination of start-up activities.

Pamela Lemme, PE – Senior Project Engineer (Drainage) | Ms. Lemme has more than 33 years of diverse experience as a professional civil and environmental engineer. Project experience includes environmental assessments, investigations for hazardous building materials (i.e. asbestos, lead-based paint), design for abatement of hazardous building materials, and assessment and design for rehabilitation of sanitary sewer systems. Projects ranged in size from $2K to $5M. Duties have encompassed all aspects of consulting engineering: operations, administration, and business development. Other responsibilities included preparation of proposals in pursuit of municipal and federal contracts.

HP Consultants, Inc. (HPCI) - *Certified SBE / Broward County CBE*

Proposed Role: Traffic Engineering/ITS/Geotechnical

HPCI is a small but highly qualified engineering consulting firm based in Florida with offices in Broward and Miami-Dade County. Founded in 2002 by Dr. Kumbhojkar, it provides pre-design studies, design, inspection, and project/construction management services for civil, geotechnical, traffic and value engineering, transportation planning, and ITS projects.

Civil and traffic engineering, full range of geotechnical services and ITS systems assessment are among its strengths. HPCI has excellent knowledge of local geology and geotechnical testing practices including standard methods and procedures of AASHTO, ASTM, DEP, and FDOT/FHWA. HPCI has all the necessary computational capabilities and a library of the latest for traffic and geotechnical analyses and have in-depth knowledge of local traffic conditions and congestion management methodologies. It also has a Professional Geologist and licensed water well contractor for well installation to augment its services. HPCI is currently providing geotechnical services under the same ongoing contract and are expanding their service offerings in the areas of Traffic Engineering and ITS.

As our subconsultant on the current contract, HPCI has been given about 40 assignments since 2016 with fees totaling $200K. These assignments have been primarily for the installation of mast arms at the intersections and review and certification of drilled shaft installations. They also include installations of school flashers, roadway improvements, and floodwall at the Everglades Holliday Park. HPCI has provided a complete range of services: site reconnaissance, utility clearance, maintenance of traffic, Standard Penetration Test borings, percolation tests, collection of asphalt cores, laboratory testing for soil identification, classification, and environmental corrosion potential, estimation of geotechnical design parameters, foundation analysis and recommendation for the design and construction of shallow and deep foundations, underground drainage, and roadway installation. HPCI has promptly alerted Metric Project Managers when it found any shortcoming within areas such as shaft installation location, grout factor, or concrete strength.

Arvind S. Kumbhojkar, PhD, PE – Geotechnical / ITS / Traffic Engineer | Dr. Kumbhojkar has been providing engineering consulting services under the banner of HP Consultants Inc., a consulting firm that he established in 2002. Since that time, Dr. Kumbhojkar has provided services to numerous clients in Florida in the areas of Civil, Geotechnical, and Traffic Engineering as well as ITS, Project Management and CEI for more than 500 projects. He is the lead Geotechnical Engineer for 50+ assignments for the Metric's ongoing Continuing Engineering Services for Broward County. As the previous Deputy Traffic Operations Engineer at FDOT District 6 for seven years, he actively participated in and managed the Traffic Operations sections for Plans, permits & traffic study reviews, freeway incident management, RCI database updates and access management. He drafted policy papers, technical memoranda for submitting to the State Transportation Secretaries and FHWA and contributed to in-house feasibility studies and reports. He developed numerous scopes of work for acquiring consultant services as well as, design-build, public-private-partnership and maintenance projects and negotiated contracts to the tune of $75M+. He worked extensively with the Planning Department for work program development and fund allocations. He was an active member of FDOT's statewide Traffic Operations committees. He was instrumental in developing South Florida's ITS program, SunGuide® as the regional ITS Coordinator. He worked closely with Districts IV and Turnpike, Broward, M-Dade and Palm Beach Counties and MDX. As the ITS Administrator at FDOT, Dr. Kumbhojkar helped establish and led the regional ITS program for Miami-Dade, Broward, and Palm Beach counties, now known as SunGuide. In his capacity as the regional coordinator, he worked closely with FDOT District-4 and turnpike district; Miami-Dade, Broward and Palm Beach County MPOs, public works and other departments, Miami-Dade Expressway Authority (MDX), Tri-Rail, and major cities in the tri-county area.

John Reige, PE, PG – Geotechnical Engineer | Mr. Riege has broad, hands-on experience in geology, civil and geotechnical engineering and well drilling/abandoning for more than 40 years. He is specialized in field work and operations, inspections, field installation quality control, and drilling and construction safety. He has excellent knowledge of Florida geology. His past work experience includes geological and geotechnical site characterization and assessment, field and construction safety monitoring, drilling safety monitoring, Phase I and phase II environmental studies and audits; design, permitting,

construction monitoring and inspection of stormwater systems; design, permitting, construction monitoring and inspection of potable water systems; design, permitting, installation and abandonment of temporary and permanent water and monitoring wells; excavation and foundation inspections, utility clearance, and soil and ground water sampling; project management and field work supervision. Mr. Riege has been working with HPCI for the last three years wherein he assists Dr. Kumbhojkar in site reconnaissance, geological and geotechnical site characterization, planning and troubleshooting drilling operations, field and construction safety inspections, drilling and well installation safety compliance, permitting, geotechnical plans reviews, review of drilling logs, site supervision, and project management.

F&J Engineering Group, Inc. (F&J) - *Certified Broward County CBE*

Proposed Role: Civil Engineering/Roadway Design/CEI

F&J, certified Broward County CBE, has been providing excellent CEI services for Broward County, FDOT (Districts 6 & 4) and local municipalities for over eight years. F&J staffs infrastructure project management and construction engineering inspection staff with highly qualified and experienced experts. They have a staff of over 24 (including three Professional Engineers) proficient in handling high profile projects including: Limited Access, Segmental Bridges, Bridge Rehabilitation, Major Highway Interchanges, Managed Lanes & Tolling, and both Urban and Rural Reconstruction Projects.

Their experience on the Broward County CEI Services for School Zone Pedestrian Safety Program includes roadway improvements and overhead school zone flashers conversions and more. Most importantly, they are a returning subconsultant from Metric's current Broward Continuing Engineering Services contract.

F&J brings a well-versed group of 10 professionals to our CEI Team, with 160 collective years of experience.

Florida Engineering & Testing, Inc. (FE&T) - *Certified Broward County CBE*

Proposed Role: Construction Materials Testing

FE&T is a multi-disciplinary engineering and consulting services firm offering environmental engineering, geotechnical engineering, construction materials testing, special inspections, project management, and consulting. Since their inception in 1994, FE&T has continued to grow to meet the needs of their diverse and changing client base. They currently provide consulting services to both the public and private sectors focusing on residential, commercial, educational, and aviation projects. Their engineering and testing operations focus on the tri-county area, but our service extends throughout all of South Florida. Their team of qualified professionals has utilized their experience to create a reputable and reliable engineering and testing firm. Their growth can be attributed directly to the quality of service and the satisfaction and appreciation of our wide range of clientele. FET's personnel work as a team by utilizing their experience, education, training and certifications to provide their clients with quality engineering services in a cost-effective manner. FE&T is yet another subconsultant that currently performs in the same capacity on Metric's ongoing Broward County Continuing Engineering Services. For instance, they provided the QC of concrete sampling and testing for the Everglades Holiday Park Bridge Replacement project.

FE&T provides key staff with a combined 45+ years of experience between Mark Mesiano, PE (Principal Engineer) and Paul Teninty (CMT Field & Laboratory Supervisor). They both have extensive experience in construction materials testing, inspection and construction related experience - performing testing and laboratory work as needed, including compaction testing, various types of concrete testing, structural masonry inspections, auger cast piling inspections, vibrofloatation inspections, demucking inspections, earthwork monitoring, roof uplift testing, field withdrawal resistance testing, and various types of soil\concrete laboratory testing including grain size analysis, moisture density (proctor) tests, limerock bearing ratio (LBR) tests.

BMA Consulting Engineering, Inc. (BMA) - *Certified Broward County CBE*

Proposed Role: Signalization/Intersection Design/Miscellaneous Structures

BMA was founded in 2012 and provides Design, PD&E and CEI Services to the transportation infrastructure industry using innovative approaches in management, cost-effective designs, and value engineering. Their design staff has knowledge and experience in all types of Interstate and Limited Access facilities with emphasis in MOT, Interchange Modification Reports (IMR), Pavement Design, Drainage Design and Reports, Permits, Signing and Pavement Markings, Structures Design, and Maintenance. Of note, they serve on the ongoing Broward County Continuing Engineering Services for Transportation and GEC Projects contract and is providing design services for four School Zone Flasher Improvement projects.

Ronald Spencer, PE – Senior Engineer (Roadway/Signalization) | Mr. Spencer has been involved in the practice of civil engineering for more than 40 years. He is experienced in Project Management, General Engineering Consultant Project Management Activities, Consultant Plan Reviews, FDOT Design procedures, i.e. Plans Preparation Manual, Design Standards, MUTCD, and AASHTO, FDOT's Long Range Estimates Program, also Post Design Construction Services. Provided Utility Coordination on State and County projects.

Louis Reis, PE – Senior Engineer (Signalization) | Mr. Reis has been involved in the practice of civil engineering for more than 32 years that includes serving as the Florida's Turnpike Enterprise Design Engineer and as the FDOT State Project Management Engineer and State Project Development and Environmental Engineer. Mr. Reis also served for seven years in FDOT District 5. Mr. Reis brings a wealth of experience on the Department's procedures and processes. He is experienced in Project Management, Quality Assurance, signalization, preparing IMR/IJR documents, and PD&E. He has worked on over twenty significant projects in his career including more than nine Interstate projects.

Jesus Mustafa, PE – Senior Engineer (Structures) | Jesus has worked in highway and interstate design, PD&E, and planning projects since 1986. He has experience in project management, highways and major and complex bridge projects, including PD&E studies on signature bridges, interchange modifications, large multi-level interstate projects, and depressed facilities and tunnels. His Districtwide experience includes serving as manager and EOR for numerous projects with FDOT, County, and with SFWMD Big Cypress Basin. Mr. Mustafa serves as Senior Engineer and EOR and is supported by Senior Designer Edmundo Zevallos with 18 years of experience.

TranSystems Corporation (TranSystems)

Proposed Role: Mechanical Bridge Inspection/Miscellaneous Structures

Established in 1966, TranSystems is a transportation engineering consultant firm who is nationally recognized experts in the areas of bridge evaluation, inspection, and rehabilitation and new design. TranSystems is listed in ENR as one of the country's top 10 bridge firms. With Florida offices located in Fort Lauderdale, Orlando and Tampa, they have cultivated an exceptionally strong team of more than 30 structural engineers, inspectors and specialists who serve clients throughout the state and country. Their bridge team of more than 200 professionals throughout the country excels in providing successful solutions to complex structural issues across the project lifecycle, from planning through design and construction to maintenance and operations. Their Fort Lauderdale office has been providing on-call bridge engineering services, including inspection, repair, rehabilitation, new design and construction services, for fixed and movable bridges, to south Florida clients including FDOT, Broward and Miami-Dade Counties, and the City of Fort Lauderdale since 1993. TranSystems is another firm who is on Metric's current Broward Continuing Engineering Services contract who provided Metric's all the Mechanical and Hydraulic Construction Observation as well as shop drawing reviews for the Andrews Avenue Bascule Bridge Rehabilitation project since 2018. They perform mechanical engineering inspections for this project

that includes construction of movable bridge rehabilitation, structural concrete, structural steel painting and additional accessory construction activities as defined in the contract plans and specifications.

Sergei Kupchenko, PE – Mechanical Engineer | Mr. Kupchenko is responsible for design, administration, coordination and inspection of mechanical and hydraulic systems for movable bridges and other facilities. He is also responsible for coordination and work with contractors and construction engineers and inspectors. He has 19 years of experience in the design, inspection, testing, evaluation, installation, rehabilitation and maintenance of operating equipment for movable bridges and other heavy movable equipment.

Jian Huang, PhD, PE – Senior Structural Engineer | Mr. Huang is experienced in design and analysis of new and rehabilitated minor, major, complex, and movable bridges. He has extensive experience in structural analysis of complex bridges including steel box girder, segmental concrete box girder, arch, truss, and cable-stayed bridges. Jian has presented/published more than 30 papers in TRB, ASCE Structures Congress, International Bridge Conference, and Heavy Movable Structures Biennial Symposium, etc.

Jeremy Davis, PE, CBI – Senior Certified Bridge Inspector | Mr. Davis has over 10 years of structural engineering experience with a focus on movable bridge inspections, inspecting structural, electrical, and mechanical elements. Jeremy participated in many TranSystems projects for FDOT, as well as other projects in Florida, New Jersey, New England, and Indiana.

Testing, Engineering, & Consulting Services, Inc. (TEC) [An SGS Company]

Proposed Role: Concrete Cast Beams Testing

TEC is an independent material testing laboratory including a professional staff of registered geologists, petrographers, chemists, ACI special inspectors, consultants, and laboratory specialists. Metric added TEC onto our current contract for concrete cast beams testing which they will continue to do for this contract, if the need arises.

James McCants III – Laboratory Manager | Mr. McCants performs physical and analytical testing of concrete, cement, pozzolans, aggregates, pozzolans, admixtures, epoxies, coatings, metals, and other constructions materials in accordance with the required ASTM and AASHTO guidelines. He manages and trains technicians in the laboratory and field testing; hiring of new technicians. He is charged with maintaining client relations, marketing, managing multiple high-profile projects, and cost estimates. Laboratory is AASHTO R18, ISO 17025, and Army Corp of Engineers accredited. He is also responsible for the research, design, and development in construction materials.

Brian Wolfe, PE – Principal Engineer/Petrographer | Mr. Wolfe joined TEC in 2005 as a Project Engineer and Concrete Petrographer performing investigations and evaluations of existing structures, structural engineering reviews, materials evaluations, petrographic examinations and structural design. He has performed material evaluations utilizing investigative techniques such as petrographic evaluation, chemical analysis, infrared spectroscopy, x-ray diffraction and physical testing.

Southeastern Archaeological Research, Inc. (SEARCH)

Proposed Role: Cultural Resource Assessment Surveys

SEARCH is the largest archaeology and cultural resources management company in the world and specializes in the full spectrum of cultural services related to Archaeology, Maritime Archaeology, Architectural History, History, Archives, Collections Management, Museum Services, GIS, Documentary Media, and Public Affairs. Since 1993, SEARCH has completed more than 3,500 projects across 44 US States and 37 countries, spanning five continents and three oceans.

SEARCH has unmatched experience in completing transportation projects according to federal and state guidelines, including Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended, the Section 303/Section 4(f) Evaluation Process (USDOT Act of 1966), and Chapter 267, Florida Statutes. SEARCH offers our transportation clients

24 years of district-wide contracting experience including 14 FDOT DW contracts (as prime) and 46 FDOT DW contracts (as a subconsultant); specifically, SEARCH holds the DW cultural resource services contracts with the FDOT District 2, District 3, and District 6 (which includes Broward County). SEARCH has provided such services for several Metric projects/contracts including performing Cultural Resource Assessment Surveys (CRAS) for the Davie Road Extension from SR 817/University Drive to SR 848/Sterling Road for our current Broward Continuing contract; this means SEARCH has an excellent working relationship with our environmental staff.

SEARCH is supported by a team of 30 archaeologists, architectural historians, historians, GIS specialists, and support personnel, who are able to utilize the expertise and resources of the entire company.

Mechelle Kerns, PhD, RPA - Principal Investigator | Mr. Kerns has more than 20 years of experience as an archaeologist and historian specializing in cultural resource management. She joined SEARCH in 2018 as Principal Investigator with the Transportation group in the Hollywood, Florida office. Dr. Kerns has extensive experience with artifact identification, analysis, data collection, and preparation for curation, research design development, report writing, public outreach, and education programs, as well as supervisory experience managing staff for projects in both terrestrial and underwater archaeology, fieldwork, and laboratory processing of artifacts. Dr. Kerns has directed archaeological fieldwork for all phases of investigation on historic, maritime, and prehistoric sites in Florida, Washington DC, Maryland, West Virginia, Delaware, Virginia, Wisconsin, and Mississippi, and she worked on underwater sites in Maryland, Florida, and New York for both private and public sector clients. She has experience and training in Sections 106 and 110 of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA). Dr. Kerns is listed on the Register of Professional Archaeologists (RPA), and she exceeds the qualifications set forth by the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716).

Jason F. Newton, MA, MLIS - Architectural Historian | Mr. Newton has more than 11 years of experience with architectural history and cultural resource management and joined SEARCH in 2019 as an Architectural Historian. Mr. Newton has experience conducting historic resource evaluation, National Register of Historic Places (NRHP) nominations, Section 106 Review, and architectural survey throughout Florida, particularly south Florida. Mr. Newton received his bachelor's degree in History in 2004 from Tarleton State University, his master's degree in History in 2007 from Texas State University, and his master's degree in Library and Information Studies in 2015 from the University of South Florida. His qualifications meet those set forth by the Secretary of the Interior's Standards and Guidelines for Architectural History and History (36 CFR Part 61).

Stoner & Associates, Inc. (Stoner) - *Certified Broward County CBE*

Proposed Role: Survey & Mapping

STONER & ASSOCIATES, Inc.
SURVEYORS - MAPPERS

Stoner was founded in September 1988 by James D. Stoner, PSM with a mission of providing quality Land Surveying services, while utilizing the latest technology and techniques. They are a Professional Land Surveying Consultant to numerous municipalities, including, Broward County Aviation Department, South Florida Water Management District, Broward College, Town of Davie, City of Fort Lauderdale, and City of Sunrise. Their services include: Surveys for ALTA/ACSM Land Title; Aviation; Boundary; Construction Layout; Engineering Design; Environmental Support; FDOT; Topographic; and, Utilities.

James Stoner, PSM – President (Surveying & Mapping) | Mr. Stoner is a second-generation Land Surveyor, with over 40 years of surveying experience in South Florida. He began his surveying career at Williams, Hatfield, & Stoner, Inc. working from the bottom as a Rodman, all the way up to Vice President of the Surveying Department. Mr. Stoner founded Stoner & Associates, Inc. in 1988, based on the philosophy that attention to detail and quality work would create a successful firm. Mr. Stoner has supervised both small- and large-scale surveying projects. His firm has successfully completed numerous roadway and other various projects, while working directly with the clients and consultants.

Richard Crawford, PSM – Senior Project Manager | Mr. Crawford has been with Stoner & Associates, Inc. for over twenty-seven years, and has over 34 years of experience within our industry. During this time, his experience has grown to include

all of the types of surveys performed by our firm. Mr. Crawford is well trained and proficient in the processing of survey data collection from a variety of data collection devices, such as GPS, Digital Leveling, and Conventional Total Stations. He is also proficient in the preparation of survey drawings using AutoCAD, MicroStation, and Carlson Survey. Mr. Crawford is responsible for the day to day management and operations of the Field Crews and Office Support Staff. He is also responsible for preparing estimates for both Construction and Engineering Design Surveys.

Compass Point Surveyors, PL (CPS) - *Certified Broward County CBE*

Proposed Role: SUE

CPS is a modern Survey firm that utilizes the latest technology to provide our clients the best service possible in the most efficient manner possible. The firm was established in 2006 and provides surveying services from the Florida Keys north to the City of Jupiter. Field crews regularly use GPS receivers, Robotic Total Stations and Data collectors linked to our office staff with cell phone WiFi. Our office utilizes the latest CAD Software and Surveying Modules to produce accurate and encompassing Plans, Digital Files and CAD drawings for our client's use. They are experienced in preparing Boundary, ALTA, Title, Topographic, Construction, Route, Design and Quantity Surveys in addition to preparing Lega Descriptions and Elevation Certificates. CPS is capable of putting three to four Survey Crews in the field while having 4 AutoCAD workstations available for office production. They have a team with a combined 80 years of field and office Surveying experience and includes three Survey Technicians led by a Professional Survey and Manager.

Scott Reid, PSM – SUE Project Manager | Mr. Reid has been active in Surveying for over 22 years and has been involved with all levels of surveying from an instrument man on a field crew to the director of Surveying for a prominent Engineering and Land Surveying Company. His background includes training in everything from Global Positioning Systems (GPS), GIS, Remote Sensing, Photogrammetry, Business and Surveying Law, courses in Platting and Sectional land history and retracement to Coastal and Freshwater Mean High-Water studies.

Benjamin Wiser – VP / SUE Project Manager | Mr. Wiser's survey experience spans more than 19 years in the State of Florida including all levels of involvement in field activities as well as office and management responsibilities. He has provided surveying and mapping services on many high profile state, county, municipal and private projects such as US Air Force Bases, international airports, sports stadiums, power, water and reclaimed water plants, interstate heavy highways, transmission mains, high-rise/commercial buildings and subdivisions performing construction layout and as-built surveys along with boundary, topographic and hydrographic surveys for design. He has extensive experience in the use of GPS and utilizes this experience in all aspects of surveying including 3D machine control, construction lay-out/as-builts and topographic surveys for design. As Vice President of Compass Point Surveyors, PL, Mr. Wiser is responsible for contract administration, quality control and technical procedures in the production of survey projects which include client relations, estimating, project tracking and crew efficiency.

Tierra South Florida, Inc. (TSF)

Proposed Role: Geotechnical/CEI

TSF was incorporated in the State of Florida in 2003 and is a full-service consulting geotechnical engineering, construction materials testing and inspections firm with capabilities to provide test borings, engineering analyses and reports, AutoCAD and MicroStation plan sheets, laboratory soils testing, and construction materials testing. Our professional team has been working together with Metric since 2000 and is extremely familiar with Metric's contract and project management. Their main office is in West Palm Beach with branch offices in Miami Lakes and Orlando, Florida.

TSF provides a complete range of geotechnical engineering services. TSF can evaluate and then develop recommendations regarding both existing structures and new construction. Their staff is Maintenance of Traffic (MOT) certified to safely perform drilling services in high traffic areas. TSF's geotechnical services includes laboratory testing and analysis; pavement evaluations and design; subsurface exploration; and deep and shallow foundation

analysis/design; site preparation recommendations; slope stability analysis; soil reinforcement; corridor studies; expert witness testimony; sinkhole studies; value engineering; and, unknown foundation studies.

TSF also offers construction materials engineering, testing and inspection services applicable to the governmental, construction and manufacturing industries. During construction, monitoring and quality control services will cover every phase of construction and all materials used. TSF owns and operates fully equipped in-house soils, concrete, aggregate, and asphalt testing laboratories certified by Construction Materials Engineering Council (CMEC). Our field and laboratory technicians hold industry-recognized certifications (ACI/CTQP/PCI/FPCA) for aggregates, asphalt, concrete, and earthwork testing as well as drilled shaft, auger cast pile, and pile driving monitoring.

TSF's principals have served as geotechnical engineering consultants to a large variety of clients, both public and private. Each year TSF completes approximately 350+ projects throughout Florida. These projects range from large, multiple-year duration projects to small, short term projects. Their specific Broward County experience includes:

- NW 10th Avenue Improvements Park Lane West to Prospect Road in Oakland Park (Broward County)
- SW 4th Avenue at SW 28th Street in Broward County
- CR-811/Dixie Highway Fly-Over in Broward & Palm Beach Counties
- Sheridan Street and Dykes Road Intersection Improvements in Broward County
- I-75 Express Lanes Segment D from South of Sheridan Street to North of Griffin Road in Broward County

Raj Krishnasamy, PE – Principal Engineer (Geotechnical) | Mr. Krishnasamy, President & Principal Engineer of TSF, is a Florida State registered Geotechnical Engineer with over 32 years of experience. Mr. Krishnasamy oversees the geotechnical engineering, construction materials testing, and inspection services operations. His experience consists of successfully completing over 5,000 public and private projects, over 200 roadway projects, and design-build projects totaling over $2B in construction costs. He serves as Project Manager for continuing contracts with over 20 Florida public agencies. He has a history of repeatedly retaining those contracts through successful, cost-effective and prompt execution of each task order. Mr. Krishnasamy's daily involvement with the in-house and field operations of the construction and geotechnical services departments provides him the "hands-on" experience and knowledge of current construction codes and construction practices throughout the State of Florida. Mr. Krishnasamy and his highly experienced team focus on providing the client with a consistently accurate, cost-effective quality product that is delivered on time and within budget.

Duland Design, LLC. (Duland) - *Certified Broward County CBE*

Proposed Role: Landscape Architecture

Duland has an executive design team of over 70 years of combined global experience working extensively in planning, and landscape design for residential communities, hotels and resorts, as well as for urban design projects of various scales. They bring together professionals from different fields to better integrate design into the sites and their surroundings. Through their collaborative process and interdisciplinary approach, Duland fulfills clients' vision while respecting the physical, cultural and environmental aspects of the site. An example of their South Florida work is the Hillsboro Boulevard Streetscape in Deerfield Beach, FL. This was a streetscape Improvement Plan along Deerfield Beach's gateway to its beachfront included spacious sidewalks with special paving, landscape, decorative pedestrian and vehicular lights, bus stops, site furniture, a bike lane and on-street parking.

Chang Du, RLA, LEED BD+C – Landscape Architect | Ms. Du has started professional career as an architect at Zhejiang South Architecture Inc. in China. She then came to the US to receive a master's degree in Land Planning & Landscape Architecture from University of Minnesota. After many years of global practice at EDSA Inc., she co-founded Dumon Design in 2010, which later became Duland Design, LLC. Since forming Duland in 2011, she has been involved in designing high-end hotels and resorts, urban areas, communities around the world for over two decades, focusing on sustainable planning and design. Ms. Du has been involved in all aspects of landscape architecture, ranging from large scale planning to detail design and has participated in numerous projects, many of which are located in United States, the Caribbean and China.

Adept Public Relations, LLC. (Adept PR) - *Certified SBE / Broward County CBE*

Proposed Role: Public Involvement

Adept is a public involvement, stakeholder liaison and outreach firm made up of cutting-edge professionals with infrastructure sector industry, governmental affairs/ relations experience. They provide stakeholder outreach techniques to capture targeted interested parties.

Adept will work with Broward County staff and Metric's project management leaders and area civic and neighborhood groups to develop comprehensive presentations and project team facilitation support services. Their coordination efforts outline ways to identify and contact the industry/community affected by a project; notify the need for a project through brochures, draft plans, project summaries and involve all stakeholders throughout the decision-making process.

Adept is a Broward County CBE firm certified in administrative management and general management consulting services, marketing consulting services and customer service management consulting services. They provide a team of stakeholder liaisons, project coordinators, strategists and public relations professionals offer expertise in public outreach, community relations, public involvement, governmental affairs and relations, strategic communications, publicity for transportation and infrastructure projects.

Julie Ruffolo – Strategy / Public Relations | Ms. Julie Ruffolo is responsible for overall advertising, marketing and public relations operations. Ms. Ruffolo has handled all aspects of campaign development, monitoring, reporting, accounting for public involvement/awareness campaigns, events, trade and trunk shows and catering. Her ability to engage with minority and under-represented groups through implementing outreach strategies, developing innovative methods and direct public involvement campaigns help clients reach every spectrum of the community.

Ms. Ruffolo oversees how ADEPT informs the public, develops memorandums to local governments, press releases, display ads, agendas, marketing materials and flyers. She has the ability to facilitate the public involvement process by distributing plans, agendas and brochures written to familiarize the public with infrastructure projects. Her team can arrange television or radio appearances, create videos, CDs or audiotapes and publish newsletters specific to transportation and infrastructure projects. As an avid bicyclist, Mr. Ruffolo is passionate about increasing awareness, promoting bike lanes, complete streets and ensuring the safety of pedestrians and bicyclists in Broward County. Julie currently serves as the communications chair for the South Florida Chapter of Advancing Women in Transportation [WTS] and is very involved in airport and seaport activities.

Dana Pollitt – Strategy / Public Relations | Mr. Pollitt has nearly 20 years of experience working with the private sector and local, state and federal government. He excels in influence marketing, business development and strategic communications and has participated in some of the nation's largest transportation and infrastructure projects. Mr. Pollitt is actively involved in the Broward County community and with philanthropy, having served on numerous boards and committees. He currently serves as the 2019 Chair for the Broward County Office of Economic and Small Business Development Advisory Board , the Executive Board of the Downtown Fort Lauderdale Transportation Management Association (Sun Trolley) , the Executive Board of Directors for Envision Uptown Inc. , Vice-chair of the Fort Lauderdale Transportation & Infrastructure Committee, Fort Lauderdale Chamber of Commerce Government Affairs Committee, the Six-Year Term on the City of Fort Lauderdale Executive Airport Advisory Board and the Sustainability Advisory Board. Mr. Pollitt is a member of the Broward League of Cities, the Riverwalk Trust, the Historic Stranahan House Museum and the Fort Lauderdale Chamber of Commerce. He has chaired the last two Transit Receptions in Broward County and has served multiple years as a Judge for the South Florida Sustainability Awards. Dana is a Broward County City of Fort Lauderdale small business owner. He is fluent in English, Spanish and Portuguese.

B. Provide an Organizational Chart of the Firm's and Team's key personnel showing roles or position titles, staff names and licenses, if any, FDOT pre-qualifications for each firm, area of expertise for the project, years of experience, and lines of authority.

As you can see, Metric has carefully staffed this contract with companies that offer professionals who comprise the proper knowledge, expertise and proficiency to get the job done. The following pages highlight our Team's overall FDOT pre-qualifications, a quick matrix of staff with required certifications, and our organizational chart. We are proud of the comprehensive team we are proposing, utilizing eight CBE-certified firms to ensure we can meet the County's goal of 25%.

C. Provide resumes for the Project Manager and all key personnel proposed. Include the qualifications, licenses, certifications and relevant experience of proposed staff, including certified CBEs to be used on this project.

Following our Team's provided organizational chart and other team/staff provided information are the resumes for our Project Manager and all key personnel proposed (those designated on the organizational chart have resumes included). Additionally, please note that our staff's IMSA and CTQP certifications generally exceed the required minimum requirements and are provided in a matrix along with our Organizational Chart and FDOT pre-qualification overview.

EVALUATION CRITERIA

1) Ability of Key Personnel:

Organizational Chart

ORGANIZATIONAL CHART - TEAM LEGEND & PREQUALIFICATION OVERVIEW

FIRM NAME *Overview of Proposed Role(s)*	APPLICABLE REQUIRED FDOT PREQUALIFICATIONS (MINIMUM REQUIRED BY PRIME: 3.1, 3.2, 6.1, 7.1, 7.3, 10.1)																					CERTIFICATION	
	3.1 - Minor Highway Design	3.2 - Major Highway Design	4.1.1 - Miscellaneous Structures	6.1 - Traffic Engineering Studies	6.2 - Traffic Signal Retiming	6.3.1 - ITS Analysis	6.3.2 - ITS Implementation	6.3.3 - ITS/Traffic Engineering Systems Communication	6.3.4 - ITS Software Development	7.1 - S&PM	7.2 - Lighting	7.3. Signalization	8.1 - Control Surveying	8.2 - Design, Right-of-Way & Construction Surveying	8.4 - Right-of-Way Mapping	9.1 - Soil Exploration	9.2 - Geotechnical Classification Lab Testing	9.3 - Highway Materials Testing	9.4.1 - Standard Foundation Studies	9.5 - Geotechnical Specialty Lab Testing	10.1 - Roadway CEI	10.3 - Construction Materials Inspection	10.4 - Minor Bridge & Miscellaneous Structures CEI	15.0 - Landscape Architect	CBE	SBE
Metric Engineering, Inc. (Metric) [1] *Prime Consultant*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓			✓		✓	✓	✓			
EBS Engineering, Inc. (EBS) [2] *Civil Engineering / Roadway Design / CEI*	✓									✓		✓									✓				✓	✓
*Keith & Associates, Inc. (Keith) [3] *Civil Engineering / Roadway Design / Utility Coordination / SUE / CEI*	✓	✓		✓	✓					✓	✓	✓	✓	✓	✓						✓			✓		
*HP Consultants, Inc. (HPCI) [4] *Traffic Engineering / ITS / Geotechnical*				✓	✓	✓	✓			✓		✓				✓	✓		✓		✓				✓	✓
*F&J Engineering Group, Inc. (F&J) [5] *CEI*																					✓	✓	✓		✓	
*Florida Engineering & Testing, Inc. (FE&T) [6] *Construction Materials Testing*																✓	✓		✓						✓	
*Albeck Gerken, Inc. (AGI) *an Iteris Company* [7] *ITS & ATMS Design / Signal Migration*				✓	✓	✓	✓	✓	✓	✓		✓														
Wantman Group, Inc. (WGI) [8] *Complete Streets / Survey / SUE*	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓						✓			✓		
BMA Consulting Engineering, Inc. (BMA) [9] *Signalization / Intersection Design / Miscellaneous Structures*	✓	✓	✓							✓	✓	✓									✓	✓			✓	
*TranSystems Corporation (TranSystems) [10] *Mechanical Bridge Inspection / Miscellaneous Structures*	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓									✓	✓	✓			
*Testing, Engineering, & Consulting Services, Inc. (TEC) *an SGS Company* [11] *Concrete Cast Beams Testing*																										
*Southeastern Archaeological Research, Inc. (SEARCH) [12] *Cultural Resources*																										
*Stoner & Associates, Inc. (Stoner) [13] *Survey & Mapping*																									✓	
Compass Point Surveyors, PL. (CPS) [14] *SUE*																									✓	
Tierra South Florida, Inc. (TSF) [15] *Geotechnical / CEI*																✓	✓	✓	✓	✓	✓	✓				
Duland Design, LLC. (Duland) [16] *Landscape Architecture*																									✓	✓
Adept Public Relations, LLC. (Adept PR) [17] *Public Involvement*																									✓	✓

** On Previous Contract*

Michael S. Cleary, PE

BROWARD IN-HOUSE SUPPORT

Margaret "Maggie" Maher (4) - *Engineer Intern* [1]
Sonia Shreffler-Bogart, PE, PTOE (27) - *Sr. Traffic Engineer* [1]

CONTRACT MANAGEMENT

Dale W. Cody, PE, PTOE (22) - *Project Manager* [1]
Josh Reichert, PE (10) - ***Deputy Project Manager/Traffic LEAD*** [1]
Robert Linares, PE (19) - *Principal-In-Charge* [1]
Charles B. Stratton III (29) - *QA Manager* [1]

QA/QC Leads
Dale W. Cody, PE, PTOE (22) - *QA/QC (Traffic/ITS)* [1]
Jessica Bloomfield, PE (17) - *QA/QC (Civil/Roadway/Drainage)* [1]
Craig Carnes, EI (18) - *QA/QC (Technology/Operations/CEI)* [1]

Contract Administration
Heidi Bouthillier (15) - *Contracts/Invoicing* [1]
Cindy Ramirez (18) - *Contracts/Invoicing* [1]

LEGEND

PROPOSED ROLE

Name (Years of Experience) - *Role / Title* FIRM
Key Personnel - Resume & Certifications Provided

- Connected Vehicle (CV) Services
- Capabilities: ASCT / TSP / ATSPM / Etc.
- Permitting Services

/2019

ORGANIZATIONAL CHART - TEAM REQUIRED CERTIFICATIONS OVERVIEW

	APPLICABLE STAFF WITH REQUIRED MINIMUM CERITFICATIONS									
(FIRM NAME) NAME OF KEY PERSONNEL	IMSA Traffic Signal Construction Technician	IMSA Traffic Signal Technician	IMSA Traffic Signal Inspector (Florida Edition)	FDOT Approved Maintenance of Traffic	CTQP Asphalt Paving	CTQP Concrete Field Inspector Specification	CTQP Earthwork Construction Inspector	CTQP Drilled Shaft Inspection	CTQP Final Estimates	Quality Control (QC) Manager
REQUIRED	L2	L1	L1	A	L2	L1	L1	✓	L2	✓
(Metric) Dale W. Cody, PE, PTOE				A						
(Metric) Charles B. Stratton				A						✓
(Metric) Josh Reichert, PE				A					L2	
(Metric) Christopher Dew, PE, PTOE		L3	L1							
(Metric) Ricardo Gonzalez, PE		L2	L1	A				✓		
(Metric) Stefan Escanes, PE		L1								
(Metric) John Battle		L2		A						
(Metric) Patrick Eklin			L1	I						
(Metric) Kevin Boston		L2		A						
(Metric) Simone Babb, GISP				A						
(Metric) Nicole Mauntler, PE				A						
(Metric) Peter Medico, PE	P	L1	L1	A	L2				L2	✓
(Metric) Abdallah “Abi” Asaseh	P		L1		L2		L2	✓	L2	✓
(Metric) Mahmood Eslamifar	P		L1	I	L1	L1	L2			✓
(Metric) Mauricio Pinzon	P		L1	A	L2		L2	✓	L2	
(Metric) Mahmood Davoodi, PE	P		L1	A	L2		L2		L2	✓
(Metric) Stacey Sookdew-Sing	P				L1		L2		L2	
(Metric) Jonathan Guzman	P			A	L2	L1	L2	✓	L2	✓
(Metric) Luis Tamayo	P	L1		A	L2		L2	✓	L2	✓

	APPLICABLE STAFF WITH REQUIRED MINIMUM CERITFICATIONS									
(FIRM NAME) NAME OF KEY PERSONNEL	IMSA Traffic Signal Construction Technician	IMSA Traffic Signal Technician	IMSA Traffic Signal Inspector (Florida Edition)	FDOT Approved Maintenance of Traffic	CTQP Asphalt Paving	CTQP Concrete Field Inspector Specification	CTQP Earthwork Construction Inspector	CTQP Drilled Shaft Inspection	CTQP Final Estimates	Quality Control (QC) Manager
REQUIRED	L2	L1	L1	A	L2	L1	L1	✓	L2	✓
(Metric) Ariam Galindo, PE	P		L1		L2		L2	✓	L2	
(F&J) Clifton Chin			L1	A		L1	L2	✓	L1	
(F&J) Bezrick Elliot			L1	I	L2		L2	✓	L1	
(F&J) Richard Yong			L1	A	L2		L2		L2	
(F&J) Hemberth Salazar, PE		L2		A	L2		L2	✓		✓
(F&J) Victor Zarzuela		L1		A	L2		L2	✓	L2	
(F&J) Juan Calle			L1	A	L2	L1	L2	✓	L1	✓
(F&J) A. “Rahim” AmirZadehShams			L1	I	L1		L1	✓	L1	
(F&J) Gary Soubel II			L1	A	L2	L1	L2	✓	L2	
(F&J) Brian Weinstein				I			L1		L1	
(F&J) Ronald Chung, EI		L1		I			L1		L1	
(TSF) Otto Legon					L2		L2	✓		
(TSF) Roberto Martinez							L2		L1	
(TSF) Augusto Ramon					L2		L2	✓		✓
(TSF) Ronald Martinez							L2		L1	

LEGEND
P = Pending (Scheduled)
L1 = Level 1 / L2 = Level 2
I = Intermediate / A = Advanced

EVALUATION CRITERIA

1) Ability of Key Personnel:

Key Personnel Resumes & Licenses

DALE W. CODY, PE, PTOE

Project Manager

TECHNICAL EXPERTISE

Project Management
TMC, ICM, AAM Operations
Traffic Operations & Signal Retiming
ITS/TSM&O Planning, Design, Operations, Integration, & Inspection
Tolling and Communication Systems
CV/AV Planning
Quality Control/Quality Assurance

YEARS OF EXPERIENCE

22 Years

PROFESSIONAL REGISTATIONS

- Professional Engineer – FL #53995 (1999)
- Professional Traffic Operations Engineer–FL #1206 (2003)

CERTIFICATIONS

- IMSA Transportation Center System Specialist I
- Extreme Ware CLI Switch Layer 2/ Layer 3 Mgmt. & Configuration
- Extreme Ware NTS-200c Network Troubleshooting
- Extreme Ware EPICenter Network Management
- Advanced – Maintenance of Traffic
- Drilled Shaft Installation Inspection

EDUCATION

- M.S., Civil Engineering, Virginia Polytechnic Institute & State University (1995)
- B.S., Civil Engineering, Virginia Polytechnic Institute & State University (1993)

PROFESSIONAL PROFILE

Metric's Senior Vice President of Production, Mr. Cody is a former District 5 Assistant District Traffic Operations Engineer with "hands on" experience in all aspects of ITS and traffic signal systems communication, traffic engineering, traffic studies, corridor retiming, and construction management. Mr. Cody has served as the Project Manager or Principal-in-Charge on more than 80 ITS projects and has managed or overseen more than 1,000 signal designs/reviews, 500 traffic studies, and the data collection of more than 8,000 locations. He has been involved in the development and/or modification of ITS and signal specifications, both as an FDOT employee as well as on the consultant side. He has also been involved in the development of Technical Special Provisions (TSPs) and Modified Special Provisions (MSPs) for various FDOT projects. Specifically, he has led the development of all of Metric's ITS Master Plans over the last five years (FDOT District 5, River to Sea TPO, Lake/Sumter MPO, Space Coast TPO, and City of Orlando's Downtown ITS Master Plan Update). Regarding CAV, he led the development of Central Florida's CAV Test Bed Safety Plan and CV Testing Lab. He presents to numerous clients, organizations, and schools (including University of Central Florida) on the advancement of CAV within the transportation industry. He intimately works with District 5 on developing standards, MOUs and security protocols in preparation of the CAV industry.

REPRESENTATIVE PROJECTS

Project Manager: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date.

Project Manager: Traffic Signalization Improvement Program, Broward County: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services. Metric led a task as part of a State Energy Program (SEP) grant to develop and implement updated signal timing plans for 110 signals with Naztec controllers on four separate corridors in Broward County, Florida. The work included data collection, establishment of appropriate models, and development of controller settings, implementation and fine-tuning of those settings in the field. Ultimately, travel times were reduced by up to 50% along all of the corridors. *Reference: Michael S. Cleary, PE, 954-357-5838*

Project Manager: Continuing Services Contract for Traffic Operations – 4 Consecutive Contracts, FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at more than 500 locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis,

DALE W. CODY, PE, PTOE

Project Manager

Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

Project Manager: Continuing Transportation Engineering & Planning Services – 3 Consecutive Contracts, City of Orlando: Metric was selected to perform professional services for the City of Orlando in all phases of projects as assigned through TWOs. Services include transportation engineering and planning services including civil, architectural, structural, mechanical, environmental, transportation, stormwater, irrigation, landscaping, and electrical engineering services as needed dependent on the project assigned. Potential work as advertised: transportation planning; traffic studies, analysis, and designs; civil preliminary and final designs including plans preparation; and more.

Project Manager: Districtwide Traffic Operations ITS Consultant – 3 Consecutive Contracts, FDOT District 1: This project includes a range of study, planning, design, integration, diagnostic, operations, management, review, evaluation and engineering services; including technical and administrative tasks for Intelligent Transportation System projects for District 1. Metric is to support all facets of the Traffic Operations Office ITS Program, including ITS planning, ITS architecture, ITS design, ITS integration, ITS diagnostics and ITS Operations, including facilitating the Traffic Incident Management (TIM) Team activities and TIM initiatives.

Project Manager: Districtwide Continuing Services ITS Consultant – 2 Consecutive Contracts, **Florida's Turnpike Enterprise:** This contract is a Continuing Services contract for ITS Design Services covering multiple areas within FTE system of toll roads. Services include the development of studies, concepts, design memorandums, and/or construction plans in relation to improving the Turnpike's Intelligent Transportation System (ITS), including any other incidental elements, including but not limited to: roadway, roadside, structures, signing and pavement markings, traffic operations, lighting, utility relocation, maintenance of traffic, cost estimates, environmental permits, environmental mitigation plans and other incidental items.

CV Readiness Study & Implementation Plan, Florida's Turnpike Enterprise: Metric was recently awarded the task of conducting a CV Readiness assessment for the FTE under Metric's DW Continuing Services ITS Consultant contract. With the FTE's interest in deploying CV technology on its roadway infrastructure, they have requested the assistance of the Metric staff to help them to prepare for the future of CV deployments. As a part of this task, the Metric staff will research and document the current state of CV technology within the industry and will conduct various internal hardware, software and storage needs, security and staffing proficiency assessments as well as roadway infrastructure evaluations as it pertains to the readiness of FTE to deploy CV technology. All these tasks will aid in the development of a short and long-term CV Technical Implementation Plan for FTE. Metric has worked with FTE on the identification of key stakeholders and will interview and work with the various agencies to identify and document current initiatives, lessons learned, use cases, expected benefits, and more. This assessment will be conducted at a national and statewide level.

Central Florida CAV Test Bed Safety Management Plan, Florida's Turnpike Enterprise: Metric is currently developing a Safety Management Plan (SMP) for the City of Orlando's AV Pilot Program Project. The plan will detail the coordination with the different agencies, safety risk process and approach, safety stakeholders and existing risk response plans, safety needs of the AV pilot program project, safety operational concepts and coordination with other tasks.

Project Manager: I-75 On- and Off-System F.R.A.M.E, FDOT District 5: Metric was awarded this project to implement CV technology and Signal Performance Metrics (SPM) in Sumter and Marion Counties. The project will deploy Roadside Units (RSUs) for the use of Signal Phasing and Timing (SPaT), Transit Signal Priority (TSP), and pre-emption applications along I-75 portions of US 441 and US 301 and connecting arterials between I-75 and US 301 via fiber optic cable and/or wirelessly. The project is being designed and implemented using the System Manager Approach to ensure design consistency as well as seamless integration with District 2, Marion County, and City of Ocala. The final products to be submitted includes the complete design for each corridor and all signalized intersections within them, the selection of devices, integrations, testing and verification.

As part of this project, the Central Florida CV Testing Lab was created to test the CV equipment that was planned to be deployed throughout Central Florida as a part of three District 5 projects, including I-75 F.R.A.M.E. Metric staff tests all CV equipment that is proposed for the region – which includes CV interoperability technology research, testing, design and systems integration of Roadside Units (RSUs), Onboard Units (OBUs), and more.

Project Manager: Traffic Engineering Services – Traffic Studies, City of Jacksonville: This contract includes various traffic engineering services which include: Crash Analysis with Mitigation Plans; Traffic Safety Studies with Mitigation Plans; Traffic Calming Plans; Traffic Impact Studies; Traffic Control Warrant Analysis; Access Management Plans; Traffic Circulation Plans and Traffic Routing Plans; Travel Time and Delay Studies; the review, development, and revision of engineering and planning documents; evaluating and/or conducting traffic operational/safety studies; intersection designs; and public information meetings. Metric will develop traffic studies and the reports associated with them for traffic signal warrant studies, isolation intersection analyses, roadway studies (speed zone, no-passing zones, and highway lighting justification) as well as traffic calming warrant analyses. This work also includes intensive data collection efforts, engineering and crash analyses, field reviews, and Benefit/Cost Analysis.

Ron DeSantis, Governor

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CODY, DALE WILLIAM

2401 ISLAND DR.
LONGWOOD FL 32779

LICENSE NUMBER: PE53995

EXPIRATION DATE: FEBRUARY 28, 2021

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Broward County Board of County Commissioners
PNC2119168P1

9/23/2019

Transportation Professional Certification Board, Inc.

certifies that

Dale W. Cody

has met all of the requirements established by the Certification Board to use the title of

PROFESSIONAL TRAFFIC OPERATIONS ENGINEER

Unless withdrawn by the Certification Board, this certificate number 1206 issued in Washington, D.C. will remain valid for three years from November 19, 2006

Steven D. Hofener
Chair

PROFESSIONAL TRAFFIC OPERATIONS ENGINEER
TRANSPORTATION PROFESSIONAL CERTIFICATION BOARD, INC.

Executive Director

Broward County Board of County Commissioners
Exhibit 3
PNC2119168P1
p. 36

Transportation Program
Dale W. Cody
Is Hereby Certified as a
Transportation Center System Specialist Level I
By completing all requirements and examination.

Cert #	Date	Good Thru
TCSS_57162	5/15/2017	5/15/2020

PNC2119168P1

Broward County Board of
County Commissioners

p. 38

BidSync

9/23/2019

Certificate of Completion

Dale W. Cody

Has Completed a Florida Department of Transportation Approved Maintenance of Traffic (MOT) Advanced Course.

01/22/2020	37	Juan Morales	14014
Expiration Date	FDOT Provider #	Instructor	Certificate #

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donna.clark@atssa.com

FDOT

For more information about Maintenance of Traffic (MOT) or to verify this
www.motadmin.com

METRIC ENGINEERING

JOSH REICHERT, PE

Deputy Project Manager; Traffic LEAD

TECHNICAL EXPERTISE

Traffic Engineering & Studies
Safety Reviews
Traffic Operations Design
ITS/TSM&O Design & Operations
FDOT Program Management
Roadway Sign Design

YEARS OF EXPERIENCE

10.5 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #77036

CERTIFICATIONS

- IMSA Fiber Optic Design Technician Level I & II
- FDOT Advanced MOT
- CTQP Final Estimates Level I & II
- IMSA Fiber Optic Technician Level I

EDUCATION

B.S. Civil Engineering, Florida State University (2008)

PROFESSIONAL PROFILE

As the former District 2 ITS Operations Program Manager, Mr. Reichert oversaw the North Florida RTMC operations, ITS Maintenance, Road Ranger Service Patrol and TIM Team programs. Additionally, he has been involved with various projects that worked to tie together agency networks in efforts to share resources and data (FDOT, COJ, JTA, UNF, NFL TPO, etc.) and assisted with coordination efforts between ITS and construction. Before that he worked in District 2 Safety and Traffic Studies and has a wealth of experience with both topics, as well as familiarity with District 2's processes, preferences, and tools (such as District 2 Traffic Operation's Tracker database). He brings his experience and understanding of District 2's ITS operations and needs, CV/AV, connected infrastructure, Big Data, Smart Cities, and District 2/North Florida TPO's overall goals for future mobility.

REPRESENTATIVE PROJECTS

Traffic Engineer: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. *Reference: Michael S. Cleary, PE, P: (954) 357-5838*

Stirling Road at Palm Avenue in Cooper City, Broward County: As a TWO under this Continuing Services Contract for Broward County, this project included the design for the upgrade of the existing signal at an urban intersection. Technical Duties: Served as Engineer of Record for the design and was responsible for all traffic components of the plans set, as well as post-design services, including responding to RFIs and shop drawing reviews.

Project Manager: Continuing Services Contract for Safety Studies (2018 – 2023), FDOT District 2: The contract includes conducting various safety-related studies including Signal Warrant Analysis, Roundabout Analysis, Intersection Safety Studies & Analysis including Concept Designs, Road Safety Audits (RSA) and their corresponding follow-up safety studies as well as operational studies, and more. The RSAs, analysis and recommendations produced are then used in the development of safety recommendations targeting the emphasis areas of the Florida Strategic Highway Safety Plan (FL-SHSP). Additional task include resolving complaints or requests received from concerned citizens, review fatal crashes, monitoring safety in specific work-zones, update and maintain the Department's Skid Hazard Reporting System, develop and utilize GIS based tools to identify locations with targeted crash patterns, perform Highway Safety Manual (HSM) analysis, and public involvement.

Deputy Project Manager / Traffic Engineer: Traffic Engineering Services – Traffic Studies, City of Jacksonville: This contract includes various traffic engineering services which include: Crash Analysis with Mitigation Plans; Traffic Safety Studies with Mitigation Plans; Traffic Calming Plans; Traffic Impact Studies; Traffic Control Warrant Analysis; Access Management Plans; Traffic Circulation Plans and Traffic Routing Plans; Travel Time and Delay Studies; the review, development, and revision of engineering and planning documents; evaluating and/or conducting traffic operational/safety studies; intersection designs; and public information meetings. Metric will develop traffic studies and the reports associated with them for traffic signal warrant studies, isolation intersection analyses, roadway studies (speed zone, no-passing zones, and highway lighting justification) as well as traffic calming warrant analyses. This work also includes intensive data collection efforts, engineering and crash analyses, field reviews, and Benefit/Cost Analysis. *Mr. Reichert is responsible for overall contract management and communication with the City. He is also the Engineer of Record on minor traffic engineering studies and safety studies as well as being responsible for the Quality Control of all deliverables under the contract.*

Traffic Engineer: Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2017 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are

JOSH REICHERT, PE

Deputy Project Manager; Traffic LEAD

then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

Traffic Engineer: Continuing Transportation Engineering & Planning Services – Three Consecutive Contracts, City of Orlando: Metric was selected to perform professional services for the City of Orlando in all phases of projects as assigned through TWOs. Services include transportation engineering and planning services including civil, architectural, structural, mechanical, environmental, transportation, stormwater, irrigation, landscaping, and electrical engineering services as needed dependent on the project assigned. Potential work as advertised: transportation planning; traffic studies, analysis, and designs; civil preliminary and final designs including plans preparation; and more.

Continuing Traffic Engineering Services on a Task Authorization Basis, Osceola County: Task authorization (TA), or Task Work Order (TWO), based contract to provide the County miscellaneous traffic engineering services and other related tasks as they arise. Services can fall under one of three "task groups" with various support services. 1) Traffic Data Collection to include 24-hour/48-hour Directional Volume and Turning Movement Counts (TMCs) data collection as well as Travel Time and Delay, Intersection Delay, Queue Analysis, Gap Analysis and Speed Studies. 2) Traffic Operations/Traffic Impact Studies to include: Traffic Calming Studies, Traffic Signal Warrant Analyses, Speed Limit Studies, Traffic Signal System Timing Evaluation & Design, Roundabout Analysis, Access Management Analyses, and Roadway Lighting Justification Analyses. 3) Traffic Engineering/ITS: Design, Plans Preparation and Design/Plan Review Support to include: Minor Intersection Design, Lighting Design, ITS Design (DMS, CCTV, etc.), Communication Network Design, and Traffic Management Center (TMC) Support.

Narcoossee Road Thompkins Road Signal Design, Osceola County: As a TWO under this TA contract, this project consisted of the design for the installation of a signal at a two-way stop-controlled rural intersection. Mr. Reichert served as EOR for the design and was responsible for all traffic and roadway components of the plans set, as well as post-design services, including responding to requests for information (RFIs) and shop drawing reviews.

Traffic Engineer: Districtwide TSM&O: ITS & ATMS Consultant, FDOT District 3: This is a Task Work Order (TWO) contract to provide a diversified range of services, including technical and administrative tasks for the Intelligent Transportation System (ITS) and Advanced Traffic Management System (ATMS) programs in District Three. Services include all areas of ITS and ATMS, including, but not limited to study, planning, architecture, design, integration, diagnostics, troubleshooting, management, review, evaluation, inspection, engineering, operations, as well as participation in the District's Traffic Incident Management (TIM) Team activities. D3's objective is to provide multilevel priority on-site response to ATMS/traffic signal phasing, timing, coordination, and malfunction issues highlighted by concerned citizens, public officials, and law enforcement personnel. *Mr. Reichert serves as a Project Engineer and is currently developing Scope of Service documents and Estimates for project TWOs as well as performing various tasks related to TMC Operations, ITS Maintenance, and Central Office requests.*

Traffic Engineer: Districtwide Miscellaneous Safety Design, FDOT District 2: Metric is responsible for the design and preparation of a complete set of construction contract documents (specifications packages, etc.) and any incidental engineering services, as necessary, for improvements to various roadway transportation facilities. Services included roadway design (typical sections, plan/profiles, cross slopes, access management, etc.), Traffic Control Plan (TCP), drainage design, utility coordination, environmental/permitting, miscellaneous structures, S&PM, signalization, lighting, survey/SUE, and geotechnical.

Project Administrator: CEI services for I-95 ITS Communication Devices, DMS, CCTV and Vehicle Detectors Deployment (US 1 to CR 210) in St. Johns County, FDOT District 2: Metric is serving as the ITS CEI consultant for this project, overseeing the installation of 45 CCTVs, 42 MVDSs, and 11 DMS all of which are tied into the recently installed District 2 fiber optic cable along I-95. The design accounts for the use of round concrete poles for CCTV installations, square poles for MVDS installations and cantilever structures for the DMS locations. The logical network proposed for this deployment includes the use of daisy chain and multiple collapsed ring topologies to provide sufficient bandwidth and limited redundancy for the device deployment. Once all infrastructure is in place and tested, the ITS devices will be integrated into the Department's existing system controlled from the District 2 North Florida RTMC. Metric provides District 2 with Construction Management Services including the following tasks: Management of ITS CEI Contract Assignments, Issue Identification and Resolution, Project Communications, Coordination & Documentation into EDMS/SiteManager, Contract Administration, Permit Monitoring, Public Concerns Coordination and Construction Cost & Schedule Control. *As Project Administrator for this project, Mr. Reichert is responsible for managing and leading bi-weekly progress meetings, interaction between FDOT and the Contractor, issue resolution, contract administration, and project closeout, which included all final acceptance work and as-builts. He was responsible for construction inspections, ensuring that the project was built to plan and FDOT standards, cost estimates, coordination of contractor and FDOT issues, overall construction project management, as-built drawings, and more.*

Ron DeSantis, Governor

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REICHERT, JOSHUA J

14583 PLUMOSA DRIVE
JACKSONVILLE FL 32250

LICENSE NUMBER: PE77036

EXPIRATION DATE: FEBRUARY 28, 2021

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Certificate of Completion

Joshua J. Reichert

Has Completed a Florida Department of Transportation Approved Maintenance of Traffic (MOT) Advanced Course.

10/20/2020	37	Juan Morales	22199
Expiration Date	FDOT Provider #	Instructor	Certificate #

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FDOT

For more information about Maintenance of Traffic (MOT) or to verify this certificate visit www.motadmin.com

Florida Department of Transportation's
Construction Training Qualification Program

Certification of Qualification

Joshua Reichert

Has completed the requirements for:

Final Estimates - Level 1

Expiration Date: September 16, 2021*

CTQP
Construction
Training Qualification Program
www.ctqpflorida.com

Melissa Wildermuth
Melissa Wildermuth
CTQP Program Administrator

*Continued Qualification is subject to FDOT procedure 700-000-01.

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Broward County Board of County Commissioners
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Florida Department of Transportation's
Construction Training Qualification Program

Certification of Qualification

Joshua Reichert

Has completed the requirements for:

Final Estimates - Level 2

Expiration Date: November 4, 2021*

CTQP
Construction
Training Qualification Program
www.ctqpflorida.com

Melissa Wildermuth
Melissa Wildermuth
CTQP Program Administrator

*Continued Qualification is subject to FDOT procedure 700-000-01.

Fiber Optics Program
Joshua J. Reichert
Is Hereby Certified as a
Fiber Optics Design Technician Level II
By completing all requirements and examination.

Cert #	Date	Good Thru
FOD_119500	12/13/2017	12/13/2020

METRIC ENGINEERING

ROBERT LINARES, PE

Principal-in-Charge

TECHNICAL EXPERTISE

Transportation Planning
Traffic Operations
Project Management
QA/QC

YEARS OF EXPERIENCE

19 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #63003 (2005)

EDUCATION

- B.S., Civil Engineering, Florida International University (2000)

PROFESSIONAL PROFILE

Mr. Linares will serve as the Principal-in-Charge for this contract, and currently serves as Metric's Senior Vice President of Roadway Design, PD&E, and Traffic Operations. He brings 19 years of experience and knowledge to the management of several engineering disciplines, project oversight, the development of staff and client needs, as well as technical planning and production experience.

REPRESENTATIVE PROJECTS

Project Manager: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Principal-In-Charge: Districtwide Traffic Operations Studies Consultant Services, FDOT District 6: The general purpose of this contract is to provide traffic engineering services through the development of various traffic operations studies that will be identified for intersections, arterials, etc., and related improvement recommendations and evaluations.

Principal-In-Charge: Districtwide PD&E Consultant, Miami-Dade County, FDOT District 6: PD&E Study to perform miscellaneous engineering and environmental studies on specific portions of transportation improvement projects and others associated tasks such as implementation of the ETDM and Socio-cultural effects, etc.

Principal-In-Charge: SR 408 Eastern Extension PD&E Study, Central Florida Expressway Authority: Project Development and Environment (PD&E) Study (SEIR) for a 7-mile eastern extension in Orange County. This project is the first phase of a larger regional vision to extend SR 408 to eventually connect to I-95 and the Brevard County coastal cities. Alternatives include new interchanges, bridging of the Econlockhatchee River, numerous, community and environmental concerns. Assisted in the preparation of the preliminary engineering report.

Principal-In-Charge: Districtwide Miscellaneous PE Design Consultant, FDOT District 6: This TWO-based contract includes several minor design projects in Miami-Dade County. The scope of work included milling and resurfacing (both Pavement Only Projects and Resurfacing, Restoration and Rehabilitation projects), ADA upgrades, signalization, and signing and pavement marking. Metric staff worked closely with FDOT as well as government officials from the affected municipalities. Public involvement was most extensive on our Miami Beach project as the intersection improvements affected several existing on-street parking spaces.

- Alton Road at Michigan Avenue, Miami Dade County, FL: RRR, widening to provide paved shoulders, and upgrades to signing and pavement markings and signals. 1.42 miles.

Project Manager: US-27/SR 25/Okeechobee Road from NW 79th Avenue to SR 997/Krome Avenue, FDOT District 6: The study aims to perform conceptual design and environmental study of roadway enhancements, frontage road enhancements, signalized intersection improvements, interchange modifications, and bridge widening to US 27/SR 25/Okeechobee Road from NW 79th Avenue to SR 997/Krome Avenue in Miami-Dade County, Florida.

Project Manager: SR 836 (Dolphin Expressway) PD&E Study from NW 17th Avenue Interchange to Midtown Interchange in Miami-Dade County, FDOT District 6: The project involved the potential realignment, capacity and geometric improvements to SR 836, an elevated expressway that traverses approximately 1.4 miles within the City of Miami. More specific improvements potentially involved the provision of a minimum of six continuous mainline lanes and the provision of parallel collector distributor facilities.

Project Manager: Krome Avenue (SR 997) PD&E Study in Miami Dade County, FDOT District 6: The study investigated the proposed widening of Krome Avenue, one of South Florida's most rural corridors. The limits of the PD&E study extended from SW 136th Street to Okeechobee Road or a total distance of approximately 23 miles. The project included a detailed safety analysis of the corridor and comprehensive alternative generation and selection process. Furthermore, the study required the preparation of

ROBERT LINARES, PE

Principal-in-Charge

preliminary engineering reports and master plans as well as extensive environmental work and coordination with all the regulatory agencies. The project was screened via the EST by the ETAT members and we were in constant communication with them throughout the duration of the study to ensure we had a buildable and permitable project at the completion of the study.

Project Manager: I-395 PD&E Study in Miami-Dade County, FDOT District 6: The PD&E Study entailed the preparation of EIS for a proposal to improve I-395 in Miami-Dade, Florida. The proposed improvement would involve the reconstruction of I-395 from I-95/Midtown Interchange to Biscayne Bay, a distance of 1.2 miles. Improvements to the corridor are considered necessary to provide for the existing and projected traffic demand. Alternatives consideration included elevated reconstruction with ramps at Midtown Interchange; elevated reconstruction with ramps at Miami Avenue; a tunnel design and an open-cut design (depressed expressway). Due to community opposition, Metric held over 150 meetings with the public and stake holders which led to public approval and LDCA.

NEPA Lead: HEFT/SR 874 Design-Build Project for **Florida's Turnpike, Miami**-Dade County, FDOT District 6, (Sub to BCC Engineering): Design and plans preparation on Segment 4 of the HEFT/SR 874 DB project. Roadway improvements consisted of widening of SW 117 Ave, SW 152 St and the Northbound and Southbound Frontage Roads to accommodate additional turn lanes as part of the improvements at the HEFT interchange with SW 117 Ave and SW 152 St. Additional services included drainage (French drain designs), signing and pavement markings, and signalization. Coordinated with various agencies including FDOT District 6, Miami-Dade Public Works, Miami-Dade Transit and the South Florida Water Management District.

QA/QC Manager: SR 25 /US-27 / Okeechobee Rd from E. of NW 116 Way (MP 8.146) to E. of NW 87 Ave (9.340) in Miami-Dade County (Sub to BCC Engineering): Reconstruction of SR-25/ US-27/ Okeechobee Road using rigid pavement from MP 8.146 to MP 9.340. Includes design of bridges for grade separation of Okeechobee Rd. over NW 87 Ave., design of left turn lanes flyover bridge from Southbound NW 87 Ave to Eastbound Okeechobee Rd and from Northbound NW 87 Ave to Westbound Okeechobee Rd., construction of a new bridge at NW 106 St over the Miami (C-6) Canal. Metric's role includes the preparation of roadway and signing and pavement marking plans for the reconstruction of NW South River Dr. and NW 87th Avenue.

Principal-In-Charge: CR 510 PD&E Study from CR 512 to 58th Avenue, Indian River County, FDOT District 4: Project Development and Environment (PD&E) Studies (CAT EX Type II) (5.3 miles) to improve the capacity along CR 510 from CR 512 to 58th Avenue by widening from two to four lanes and implementing a raised median. CR 512 currently serves as the main artery in northern Indian River County connecting I-95 to US 1 and A1A. Tasks include preparation of Design Traffic Technical Memorandum (DTTM), lead the noise data collection, analysis and documentation efforts as well as support preparation of other environmental documents.

Principal-In-Charge: Oslo Road PD&E Study from E. of SR. 9/I-95 to E. of 58th Avenue, FDOT District 4: Project Development and Environment (PD&E) Studies (CAT EX Type II) to improve the capacity along Oslo Road from E of SR 9/I-95 to E of 58th Avenue by widening from two to four lanes and implementing a raised median. The Oslo Road widening will connect with the four-lane section just east of 58th Avenue and to the proposed interchange at I-95 and Oslo Road. The project is outside of the urban service boundary and R/W acquisition will likely be required.

Project Manager: SR 710 (Bee Line Highway) PD&E Study in Martin County, FDOT District 4: PD&E Study for a 15-mile stretch of SR 710 (a FIHS/SIS facility) in Martin County from the Okeechobee/Martin County Line to CR 609 The study considered additional through lanes, provision of a median, widening of the crossroads where necessary to provide intersection operation at an acceptable Level of Service, pedestrian enhancements including construction of multi-use trail and grade separation of highway and multi-use trail over the CSX railway.

QA/QC Manager: SR A1A Deerfield Beach PD&E Study in Broward County, City of Deerfield Beach: PD&E Study from south of SE 3rd Street to north of NE 7th Street in Broward County (a distance of approximately .841 miles). The study considered additional through lanes, special treatment and/or additional lanes at major intersections and widening of the crossroads where necessary to provide intersection operation at an acceptable Level of Services.

Project Manager: SR 874 (Don Shula Expressway) Ramp Connector PD&E Study, Miami-Dade Expressway Authority (MDX): PD&E Study to evaluate a potential new ramp connection from SR 974 (Don Shula Expressway) to SW 136th Street at SW 137th Avenue. This new ramp connection would provide an additional expressway access and mobility to the area. The study identified potential corridors and alignments as well as potential environmental impacts.

Project Manager: NW 14th Street Access Improvements to I-395 PD&E Study in Miami-Dade County, FDOT District 6: PD&E Study (.5 miles) for the addition of on/off ramps to I-95 and I-395. Study requires a comprehensive PD&E analysis and IJR. The project includes preliminary and final engineering reports and master plans, traffic modeling and technical memorandum, and extensive public involvement with the Overtown area. The project was developed and completed following the ETDM methodology. The project was screened via the EST by the ETAT members and we were in constant communication with them throughout the duration of the study to ensure we had a buildable and permitable project at the completion of the study.

CHARLES B. STRATTON III

Quality Assurance Manager

TECHNICAL EXPERTISE

ITS Operations, Integration, & Inspection
Construction Management
Public Involvement
QA/QC

YEARS OF EXPERIENCE

29 Years

CERTIFICATIONS

- Advanced Maintenance of Traffic
- CTQP - Quality Control Manager
- SADDLE ISLAND INSTITUTE – Construction Claims
- FDOT - Work Zone Traffic Control Intermediate Course
- TRANSCORE - License Plate Reader Technology
- TRANSCORE - Automatic Vehicle Identification Technology
- EXTREME – Data Networking
- EXTREME – IP Routing and Switch Configuration
- EXTREME – Networks Associate
- EXTREME – SureTrak - 401
- CORNING – SM/MM Fiber Optic Theory, Connectorization, Splicing and Testing
- CORNING – TS LAN 200-A-CS

EDUCATION

- High School Diploma

PROFESSIONAL PROFILE

Mr. Stratton currently serves as the Vice President of Traffic Operations and ITS, overseeing all Production, Integration, Inspection, and Operations. He has overseen or managed the integration and network efforts for more than $350 million in ITS design. Throughout his career, he led the construction management and administration of roadway and ITS CEI projects; with more than 20 ITS CEI projects completed Statewide. Additionally, Mr. Stratton currently leads all of Metric's Traffic Incident Management (TIM) Team facilitation for 10+ TIM Teams statewide (and in Puerto Rico) between multiple DW contracts. In recent years, he serves as Metric's Quality Assurance Manager overseeing production's submittals and ensuring deliverables are up to standard and submitted correctly on-time. Charles' management and contract administration for Metric's Broward County Continuing Services contracts has been instrumental. He works diligently to make sure County's expectations are being met and ensures our CBE Utilization is exceeding contract goals.

REPRESENTATIVE PROJECTS

CEI Lead / Quality Control: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Deputy Project Manager: Traffic Signalization Improvement Program, Broward County: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services. Metric led a task as part of a State Energy Program (SEP) grant to develop and implement updated signal timing plans for 110 signals with Naztec controllers on four separate corridors in Broward County, Florida. The work included data collection, establishment of appropriate models, and development of controller settings, implementation and fine-tuning of those settings in the field. Ultimately, travel times were reduced by up to 50% along all of the corridors. *Reference: Michael S. Cleary, PE, 954-357-5838*

Principal/Quality Control: Districtwide Traffic Operations ITS Consultant – Three Consecutive Contracts, FDOT District 1: This project includes a range of study, planning, design, integration, diagnostic, operations, management, review, evaluation and engineering services; including technical and administrative tasks for Intelligent Transportation System projects for District 1. Metric is to support all facets of the Traffic Operations Office ITS Program, including ITS planning, ITS architecture, ITS design, ITS integration, ITS diagnostics and ITS Operations, including facilitating the Traffic Incident Management (TIM) Team activities and TIM initiatives.

Principal-In-Charge: Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2001 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis,

CHARLES B. STRATTON III

Quality Assurance Manager

Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

TIM Team Facilitation and Technical Assistance, FDOT District 5: Metric assists transportation incident response and public safety agencies with sustaining and further developing the District 5 Traffic Incident Management Teams (Sumter-Lake, Tri-County, Marion, Brevard and Volusia-Flagler). This assistance is rendered through a combination of TIM Team-building meetings and outreach. In addition, Metric provides for the facilitation of FHWA's National Traffic Incident Responder Training (SHRP-2) which is designed to improve the safety of the emergency responders and the traveling public, while at the same time reducing incident duration and improving roadway mobility and reliability.

Southern Broward ATMS Design-Build, FDOT District 4: Design, installation and integration of the subsystems comprising this ATMS project located in Southern Broward County (19.85 miles). The primary system components include a new dedicated communications network, including fiber optic cable and conduits, arterial ITS devices (CCTV cameras, ADMSs, MVDSs, ATTS), connection to existing traffic signal cabinets, transit Passenger Advisory Signs (PAS), and integration with the Transportation Management Center (TMC). Corridors: SR 820 / SR 858 / SR 5/US-1 / SR 824.

Broward County ITS Deployment on I-95 from Miami-Dade County Line to Palm Beach County Line Design-Build, FDOT District 4: This project consisted of the design and installation of a wireless mobile VoIP subsystem, a Road Weather Information System and Highway Advisory Radio Subsystem within the I-95 corridor in Broward County, as well as the installation of arterial DMS subsystem at select arterial intersections and the integration of all subsystems into the existing ITS system in Broward County.

Districtwide TSM&O Support Services, FDOT District 4: This project included support services for the new TSM&O program within the Florida Department of Transportation to improve the efficiency of existing transportation network through performance monitoring, active arterial management, Integrating Freeway Management with Arterial Management and Incident Management on Arterials and Freeways. The project included the deployment of an ITS along the District's interstates to monitor and improved incident clearance time and travel time and the implementation of the ATMS. Both systems utilized SunGuide software to manage these devices and traffic signals.

Districtwide TSM&O: ITS & ATMS Consultant, FDOT District 3: Recently awarded, this is a TWO-based contract to provide a diversified range of services, including technical and administrative tasks for the ITS and ATMS programs in District Three. Services are anticipated in all areas of ITS and ATMS, including, but not limited to study, planning, architecture, design, integration, diagnostics, troubleshooting, management, review, evaluation, inspection, engineering, as well as participation in the District's TIM Team activities. D3's objective is to provide multilevel priority on-site response to ATMS/traffic signal phasing, timing, coordination, and malfunction issues highlighted by concerned citizens, public officials, and law enforcement personnel.

CEI Services for Orange County ATMS Phase 2B, Orange County: This LAP Project includes the design and construction of ITS infrastructure and subsystem components along 39 miles of roadway in Orange County, Florida. In addition, traffic signals shall be upgraded from span-wire to mast-arms at five intersections. ITS infrastructure includes installation of fiber optic cable via new underground conduit and aerial attachments. ITS subsystem components include 37 new CCTV cameras, new Managed Field Ethernet Switches, new Field Hub Routers and upgraded Traffic Controllers. The project also includes upgrades to the TMC through the addition of new TMC workstations, Laptops, Video Management Software and Central System Software.

SR-9/I-95 Express Lanes Phase II, FDOT Districts 4 & 6: This project is a $112 Million design that includes the design and construction of Express Lanes by converting the existing High Occupancy Vehicle (HOV) Lane into 2 Express Lanes along Interstate 95 from a point north of the SR 826 Golden Glades Interchange to a point south of the Sunrise Boulevard Park & Ride in both Miami-Dade and Broward Counties. Other aspects of the project include analyzing and designing all roadway and structural elements. Metric's role also included the data collection, signal timing, and traffic modeling in Synchro for four events during two different phases of the Temporary Traffic Control implemented on this project. These events encompassed closing of Hollywood Blvd, Stirling St, Hallandale Beach Blvd, and Pembroke Rd. at I-95 during weekends.

I-4 Ultimate (P3) Review Services, FDOT District 5: I-4 Ultimate is an important public-private partnership (P3) project for Central Florida. The $2 Billion, 21-mile makeover runs from west of Kirkman Road in Orange County to east of State Road 434 in Seminole County. Metric is a subconsultant to RS&H to complete the review of the I-4 Ultimate Corridor Plan for ITS impacts as well as the review of two major ITS Submittals for compliance and effect of construction on all 3rd party facilities.

ITS Engineering, Design and Procurement Support Services, San Juan Metropolitan Area, Puerto Rico Highway Transportation Authority (PRHTA): ITS GEC to assist PRHTA with the establishment of an ITS Program for the greater San Juan Metropolitan Area. Tasks include Systems Engineering, High-Level Design, Requirement Development and Tracking, Design/Build Criteria Package Development, and Construction Oversight and Quality Assurance for five phases of projects including a Traffic Management Center which will total approximately $45 Million in Construction dollars. Metric Staff is on-site to assist PRHTA's ITS Project Manager throughout the contract in various roles including program management, potential integration and construction oversight. This contract also includes the facilitation of TIM meetings, training and outreach.

9/23/2019

Certificate of Completion

Charles B. Stratton

Has Completed a Florida Department of Transportation Approved Maintenance of Traffic (MOT) Advanced (Refresher) Course.

04/29/2020	134	Al Sevcech	17235
Expiration Date	FDOT Provider #	Instructor	Certificate #

A&SW Consultants, Inc.
55 Inlet Harbor Rd. Ste.121
Port Orange, FL
www.FloridaMOT.com
swhite@aswconsultants.com

For more information about Maintenance of Traffic (MOT) or to verify this

www.motadmin.com

BidSync
Broward County Board of County Commissioners
PNC2119168P1

METRIC ENGINEERING

JESSICA BLOOMFIELD, PE

QA/QC (Civil/Roadway/Drainage)

TECHNICAL EXPERTISE

Highway & Drainage Design/Planning

Multimodal Design

Project Management & QA/QC

Public Involvement

PD&E

Site Development & Utility Coordination

YEARS OF EXPERIENCE

17 Years

PROFESSIONAL REGISTRATION

- Professional Engineer – FL # 66427
- Professional Engineer – AL # 29880

CERTIFICATIONS

- Advanced MOT
- ICPR Hands-On Training
- FDOT Specifications
- FDOT Long Range Estimating

EDUCATION

- B.S., Civil Engineering, Washington State University

PROFESSIONAL PROFILE

Ms. Bloomfield currently is Metric Engineering's Area Design Manager for North Florida and serves as a Project Manager and Roadway Engineer. She focuses on all aspects of highway design and planning, as well as drainage design, project management, and utility design and coordination. She is also responsible for preparing construction cost estimates and specification packages. She also provide Quality Control reviews for all of Metric's Central Florida and South Florida roadway submittals.

REPRESENTATIVE PROJECTS

Design Engineer: Districtwide Minor Railroad Crossing Design Projects, FDOT District 3: Served as a Design Engineer for multiple rough railroad crossing replacements throughout the District. Each task work order involved preparation of design plans for the Highway Contractor to replace rough crossings in cooperation with the respective railroad owner. Each project involved design coordination with the railroad representatives and local governments for offsite detour approvals. Plans included new roadway profiles, pavement design details, pedestrian improvements, drainage modifications, signing and pavement markings and detailed maintenance of traffic plans.

Project Engineer: Districtwide Miscellaneous Safety Design, FDOT District 2: Metric is responsible for the design and preparation of a complete set of construction contract documents (specifications packages, etc.) and any incidental engineering services, as necessary, for improvements to various roadway transportation facilities. Services included roadway design (typical sections, plan/profiles, cross slopes, access management, etc.), Traffic Control Plan (TCP), drainage design, utility coordination, environmental/permitting, miscellaneous structures, S&PM, signalization, lighting, survey/SUE, and geotechnical.

Project Manager / Engineer of Record: CR 177A from SR 79 to SR 2, Holmes County, FDOT District 3: Served as Project Manager and EOR for this resurfacing project. Plans consisted of condensed plan sets, which minimized survey efforts and provided savings to the County. The project involved preparation of Specifications, Intersection Details, Traffic Control Plans, Signing & Pavement Markings, drainage improvements and guardrail replacement in over 20 locations.

Project Manager: SR 20 from west of SR 57 to J.C. Lee Road in Jefferson County, FDOT District 3: Served as Project Manager for this resurfacing project. The project involved lane width widening for proposed bike lanes, intersection upgrades, ADA pedestrian upgrades, guardrail upgrades, drainage improvements, Traffic Control Plans, and Signing and Pavement Marking Plans.

Project Manager / Engineer of Record: SR 30A (US 98) from Transmitter Road to SR 30 (Bus 98) (Bay County), FDOT District 3: Currently serving as the Project Manager and Roadway EOR for this urban resurfacing project. The project includes addition of sidewalk, driveway modifications, Right-of-Way (ROW) acquisition, drainage improvements to help with flooding, ADA improvements where allowed within existing ROW, and utility coordination and relocations. Other improvements on the project include addition of an Adaptive System for signal timing, pedestrian signalization and signing and pavement markings.

Lead Project Engineer: SR 30A (Tyndall Parkway) from SR 30A to Dupont Bridge and SR 75 (US 231) from CR 2301 to N. Camp Flowers Road in Bay County, FDOT District 3: Lead Project Engineer; these projects included milling and resurfacing, addition of right and left turn lanes (standard and directional), removing median openings to improve access management, drainage modifications and improvements, guardrail upgrades. Tyndall Parkway included addition of ADA compliant curb ramps, relocating curb inlets, sidewalk construction, pavement design and signalization plans. Both projects involved FDEP permitting, identification of utility conflicts, coordinating utility relocations, signing and pavement marking design, permitting and preparation of electronic delivery for electronic letting.

Project Manager / Engineer of Record: SR 30A (US 98/15th Street) from West of CR 2343 (Jenks Avenue) to SR 389 (East Avenue) in Bay County, FDOT District 3: Served as Project Manager and EOR for this urban resurfacing project. This project consisted of milling and resurfacing an urban principal arterial. Other improvements include widening for side street turning radii, new mast arms, sidewalk, bus bays with bus pads, retaining walls, and minor drainage improvements. Plans include roadway, signalization and signing & pavement markings. This project required R/W acquisition for construction of the new sidewalk throughout the project.

Project Engineer: SR 30 and SR 30A (Back Beach Road) from the Walton County Line to west of SR 79 (Bay County), SR 30A (15th Street) from SR 390 to SR 75 (US 231/Harrison Avenue) (Bay County) and SR 71 from Gulf County Line to CR 275 (Calhoun County), FDOT District 3: Served as Project Engineer for these 3 resurfacing projects. SR 30/30A was a 6-mile 3R project

JESSICA BLOOMFIELD, PE

QA/QC (Civil/Roadway/Drainage)

with access management changes, addition of turn lanes, drainage improvements including French drain systems, new signing, Traffic Control Plans, new sidewalk from the county line to Camp Helen State Park, signalization plans, and utility coordination. The SR 30A/15th Street project involved design of sidewalk on both sides of the roadway with ADA improvements, Utility Relocations and Drainage Modifications. Driveways improvements were made throughout the project within very constrained ROW. SR 71 included widening the existing roadway for 11 miles to provide wider thru lanes and the addition of paved shoulders and extending many cross drains. A Dredge and Fill permit was obtained for work in wetlands throughout the project limits.

Project Manager / Engineer of Record: SR 30 (Business 98) from SR 75 to SR 30A in Bay County, FDOT District 3: This 3R project was 6 miles long downtown Panama City, Millville, Springfield, Parker, and Callaway This project involves ADA upgrades, new sidewalk construction, radius improvements, a new mast arm, guardrail upgrades, signing and pavement marking plans, signalization, 4 miles of ITS Interconnect, and traffic control plans. Coordination efforts included an informal public meeting to describe the proposed construction. Meetings with affected utility owners also took place.

Project Engineer: SR 30 (US 98) from Hathaway Bridge to SR 390 and SR 30 (Bus 98) at CR 22A in Bay County, FDOT District 3: SR 30 (US 98) was an urban resurfacing project, which included pavement design, addition of ADA compliant curb ramps, curb inlet relocation, railroad crossing replacement, signing and pavement marking plans, and signalization plans. The other project involved widening SR 30 (Bus 98) to provide a right turn lane to CR 22A. The widening involved modification to an existing cross drain, a new school zone cross walk with signing, right-of-way acquisition and work in wetlands. Dredge and Fill and Stormwater permits were obtained for this project.

Project Manager / Engineer of Record: SR 63 (Monroe Street) from south of John Knox Road to north of SR 61 (Thomasville Road) in Leon County, FDOT District 3: Serving as Project Manager and EOR for this urban milling and resurfacing project. This project includes sidewalk construction, ADA upgrades, minor drainage modifications, signing and pavement markings, and signalization upgrades. This project includes coordination with the CRTPA and other agencies.

Project Manager / Engineer of Record: SR 83 (US 331) from Edgewood Circle to the beginning of the 4-lane at I-10 (SR 8) and SR 83 (US 331) at Coy Burgess Loop South (CR 278) in Walton County, FDOT District 3: Served as Project Manager and Engineer-of-Record for these two projects. The projects consisted of milling and resurfacing SR 83, widening for a northbound left turn lane at Coy Burgess Loop South and other safety improvements. The plans for the turn lane required right-of-way acquisition and utility adjustments. Other improvements included signage, pavement markings, side drain replacements, guardrail upgrades, pavement overbuild, and permanently correcting erosion issues.

Engineer of Record: SR 87 Connector PD&E in Santa Rosa County, FDOT District 3: Served as EOR for this PD&E Study. This EIS involved the evaluation of potential corridors that would connect SR 87S at US 90 east of Milton to SR 87N in Milton. The preliminary design included new vertical and horizontal alignments for a new 4-lane divided highway, multi-use path with connections to existing pathways, pedestrian and bicycle facilities, stormwater facility design and recommendations for basins within Outstanding Florida Waters, as well as environmental impact analysis.

Project Manager / Engineer of Record: SR 189 (Beal Parkway) at SR 393 (Mary Esther Boulevard) Intersection Improvements in Okaloosa County, FDOT District 3: Served as Project Manager and Roadway Engineer of Record for this project. The project began with preparation of a traffic study to determine the required operational improvements. The design involved widening SR 189 to provide an additional thru lane, additional turn lanes, and bike lanes. Lane widths were minimized and the existing right of way was utilized to the fullest extent to minimize impacts to property owners and utility owners. The project also involved sidewalk, drainage modifications, MOT, Utility Coordination, signalization and ITS, signing and pavement markings, ADA improvements and gravity walls.

Project Manager: SR 292 (Gulf Beach Highway/Barrancas Ave.) from Merritt Street to 3rd Street PD&E Study, Escambia County, FDOT District 3: Served as Project Manager for this PD&E Study and Operational Improvements project. The project involved widening to provide an additional thru lane and bike lanes, sidewalk, right-of-way acquisition, PD&E Study to receive LDCA, and final design plans. The project also included, drainage design, ITS and signalization, signing and pavement marking plans, and ADA improvements.

Project Manager: CR 22A (Bob Little Road) Bike/Ped Path from Cherry Street to 7th Street, Bay County, City of Callaway: The design includes a pedestrian and bike path on the east side of Bob Little Road, cross drain extension, piping ditches, signing and striping, Traffic Control Plans, and utility coordination. A stormwater permit was obtained for minor drainage work in wetlands. LAP Specifications and the Bid Package were also prepared for the City.

Project Manager / Engineer of Record: CR 2341 (Jenks Avenue) from SR 368 (23rd Street) to CR 2312 (Baldwin Road), Bay County, City of Panama City: This project included roadway design to widen approximately 1-mile of Jenks Avenue from a 2-lane rural roadway to a 5-lane urban roadway with bicycle lanes and sidewalk. The roadway design plans included adjusting the vertical profile, cross sections, new side street turnouts, and Maintenance of Traffic plans. The project also involved community awareness and a public information meeting.

Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

BLOOMFIELD, JESSICA GOODALL

8715 SURF DRIVE
UNIT 1907
PANAMA CITY BEACH FL 32408

LICENSE NUMBER: PE66427

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com

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METRIC ENGINEERING

CRAIG CARNES, EI

QA/QC (Technology/Operations/CEI)

TECHNICAL EXPERTISE

ITS Design, Operations, Integration, and Inspection
Project Management & Coordination
Traffic Incident Management
QA/QC
Systems Engineering

YEARS OF EXPERIENCE

18 Years

CERTIFICATIONS

- FHWA Certified Trainer for SHRP-2 Incident Management Training 4-hour course
- 5-day Manager's Training Course (Flight School) for the Florida's Turnpike Enterprise
- Advanced Maintenance of Traffic (Re-Certification is Scheduled)
- Construction Claims Course, Saddle Island Institute
- Advanced Lightning and Surge Protection Training, Atlantic Scientific
- Consultant CEI Project Manager Training, FDOT
- FDOT Final Estimates Level 1 and Level 2
- FHWA Systems Engineering Course
- FEMA ICS-100
- FEMA ICS – 402
- FDOT ITSFM Software Editor

EDUCATION

- B.S., Electrical Engineering, West Virginia University (2000)

PROFESSIONAL PROFILE

Mr. Carnes has over 17 years of ITS design and project management experience, and plays a major role with the District 2, District 5 and Puerto Rico Highway Transportation Highway Authority (PRHTA) TIM programs. Formerly, he served as an ITS Construction Project Manager for the FDOT Turnpike Enterprise, with responsibilities including CE&I oversight, ensuring adherence to contractual and Department rules/regulations, integration of all ITS equipment and devices, review of final project testing, and project closeout. He currently serves as Vice President of ITS Operations and handles local coordination from Metric's Jacksonville office due to his extensive District 2 experience.

REPRESENTATIVE PROJECTS

Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Traffic Signalization Improvement Program, Broward County: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services. Metric led a task as part of a State Energy Program (SEP) grant to develop and implement updated signal timing plans for 110 signals with Naztec controllers on four separate corridors in Broward County, Florida. The work included data collection, establishment of appropriate models, and development of controller settings, implementation and fine-tuning of those settings in the field. Ultimately, travel times were reduced by up to 50% along all of the corridors. *Reference: Michael S. Cleary, PE, 954-357-5838*

Consultant Services for Transportation Management Center Area-Wide – Three Consecutive Contracts Prime/Sub, FDOT District 2: Services to provide a wide range of operational, engineering and planning services to include technical, management and administrative tasks for District 2 ITS Program and Traffic Management Center. Traffic Incident Management (TIM) Team support includes bi-monthly meetings, newsletters, etc.

Jacksonville/Clay Co. Network Operations, FDOT District 2: Under our General TMC Consultant Contract, Metric staff operate and maintain District 2 as well as Clay County, St. Johns County and City of Jacksonville ITS networks and TMC infrastructure. Network equipment supported includes Extreme, Cisco, and Juniper Layer 3 Switches along with ITS Express, RuggedCom, and Comtrol MFESs. Advanced wireless networking hardware is also managed including AirFiber by Ubiquiti. Network management includes project planning, IP allocations and assignments, protocol selection and configuration, monitoring and adjusting, and incident response. Clay County involves working with both the ITS and Signalization components, including ATMS.Now.

Districtwide Traffic Operations ITS Consultant – Three Consecutive Contracts, FDOT District 1: This project includes a range of study, planning, design, integration, diagnostic, operations, management, review, evaluation and engineering services; including technical and administrative tasks for Intelligent Transportation System projects for District 1. Metric is to support all facets of the

CRAIG CARNES, EI

QA/QC (Technology/Operations/CEI)

Traffic Operations Office ITS Program, including ITS planning, ITS architecture, ITS design, ITS integration, ITS diagnostics and ITS Operations, including facilitating the Traffic Incident Management (TIM) Team activities and TIM initiatives.

ITS Network Administration, Maintenance and Repairs, Osceola County: Services to monitor the County's network remotely and locally, assist with device warranties (tracking and managing), monthly inventory, operational capacity, troubleshooting of fiber and devices, generation of IP addresses, utility coordination, support services for natural disasters, MOT services pertaining to maintenance, contract maintenance reports, ITS SOG's and diagnostics.

ITS Maintenance Services, FDOT District 5: Metric has partnered with ACS to perform the maintenance services for ITS devices and infrastructure located in the counties of Brevard, Flagler, Lake, Marion, Orange, Osceola, Seminole, Sumter, and Volusia. The system includes Traffic control signal and ITS device grounding and surge suppression; conduit; Communications cable; Pull, splice, and junction boxes; Electrical power service assemblies; Pre-stressed concrete and steel poles; Vehicular signal assemblies; Vehicle detection systems (VDS); Traffic controller assemblies; Adaptive Signal Control Equipment; Visibility Sensors; Bluetooth Devices; Equipment cabinets; Ramp metering assemblies; Video equipment; Network devices; Highway signing (DMS & arterial); Camera lowering systems; Road weather information systems (RWIS); Wireless communication devices; Portable and permanent emergency power generators; Uninterruptable power supplies (UPS); Communications hubs and equipment shelters; Ancillary facilities such as SunGuide data servers & workstations; Environmental conditioning equipment and Hardware, software, and firmware related to ITS equipment and other traffic control devices.

TIM Team Facilitation and Technical Assistance, FDOT District 5: Metric assists transportation incident response and public safety agencies with sustaining and further developing the District 5 Traffic Incident Management Teams (Sumter-Lake, Tri-County, Marion, Brevard and Volusia-Flagler). This assistance is rendered through a combination of TIM Team-building meetings and outreach. In addition, Metric provides for the facilitation of FHWA's National Traffic Incident Responder Training (SHRP-2) which is designed to improve the safety of the emergency responders and the traveling public, while at the same time reducing incident duration and improving roadway mobility and reliability.

Districtwide TSM&O, FDOT District 4: This project included support services for the new TSM&O program within the Florida Department of Transportation to improve the efficiency of existing transportation network through performance monitoring, active arterial management, Integrating Freeway Management with Arterial Management and Incident Management on Arterials and Freeways. The project included the deployment of an ITS along the District's interstates to monitor and improved incident clearance time and travel time and the implementation of the ATMS. Both systems utilized SunGuide software to manage these devices and traffic signals.

CEI Services for I-95 ITS Communication Devices, DMS, CCTV and Vehicle Detectors Deployment (US 1 to CR 210) in St. Johns County, FDOT District 2: Metric is serving as the ITS CEI consultant for this project, overseeing the installation of 45 CCTVs, 42 MVDSs, and 11 DMS all of which are tied into the recently installed District 2 fiber optic cable along I-95. The design accounts for the use of round concrete poles for CCTV installations, square poles for MVDS installations and cantilever structures for the DMS locations. The logical network proposed for this deployment includes the use of daisy chain and multiple collapsed ring topologies to provide sufficient bandwidth and limited redundancy for the device deployment. Once all infrastructure is in place and tested, the ITS devices will be integrated into the Department's existing system controlled from the District 2 North Florida RTMC. Contractor: SICE, Inc. / Designer: Arcadis

CEI Services for SR 16 ITS Communication System from I 95 to City of St. Augustine, FDOT District 2: The work in this contract consists of Intelligent Transportation System (ITS) and other incidental construction along SR 16 from I-95 (SR 9) to SR 5 (US 1) and along SR 5 (US 1) from SR 16 to West Castillo Drive. This project primarily includes the construction of an underground conduit duct bank with fiber optic cable for the entire length of the project limits. Contractor: Traffic Control Devices / Designer: DRMP

CEI Services for I-295 ITS Deployment Phase V, FDOT District 2: CEI services for the expansion of the SunGuide Jacksonville Phase 5 along I-295 from Losco Creek to I-10. Improvements included fiber communications cable and associated infrastructure, cantilever truss mounted DMS signs, CCTV cameras and non-intrusive microwave detection.

ITS Freeway Management: I-75 (SR 93) from SR 24 in Alachua County to Georgia State Line, FDOT District 2: This 87 mile ITS project involves two sets of plans, both within the same project limits. The first project involves the design of a fiber / conduit backbone communication system installation. The second project provides the design of the field equipment communication devices, including 24 full-size, walk-in, color DMS as well as CCTV, vehicle detectors and deployment.

SunGuide Jacksonville Phase VII Systems Manager Project, FDOT District 2: This project included the design, procurement, post-design services, integration, and testing for a complete freeway management system (FMS) along SR 9A from Atlantic Blvd. to the Northern I-295/I-95/SR 9A Interchange. The design encompassed the installation of CCTVs at 1-mile intervals, VDSs at ½-mile intervals, DMSs in advance of major interchanges, and interconnecting conduits with fiber optic cable.

State of Florida

Board of Professional Engineers

By This

Certificate

Bears Witness That

Clifford Craig Carnes

Has satisfactorily demonstrated qualifications in engineering fundamentals, technical subjects, mathematics and basic sciences and is hereby recognized as an

Engineer Intern

No. 1100008733

In Testimony whereas, *witness the signature of the Chair under the seal of the Board*

this 12 *day of* FEB, *20* 04

Robert J. Mostella

CHAIR, BOARD OF PROFESSIONAL ENGINEERS

METRIC ENGINEERING

STEVEN SCHINDLER, PE, PTOE

Senior Engineer: Traffic

TECHNICAL EXPERTISE

Traffic Operations & Safety Studies
Traffic Operations Design
Maintenance of Traffic
Traffic Signal Timing

YEARS OF EXPERIENCE

26 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #57862
- Professional Traffic Operations Engineer – FL #3313
- Professional Engineer – OH #80041
- NCEES P.E. Record #43080

SOFTWARE SKILLS

- Synchro
- SimTraffic
- Highway Capacity Software (HCS)
- Miovision Traffic Cameras
- MicroStation
- GEOPAK
- GuidSIGN
- AutoTURN
- ArcGIS
- Primavera
- MS Project

EDUCATION

- B.S., Civil Engineering, Purdue University (1992)

PROFESSIONAL PROFILE

As a Traffic Engineering Project Manager at Metric, Mr. Schindler over 26 years of experience providing extensive transportation engineering services. Mr. Schindler has been the Engineer of Record (EOR)/Project Manager on approximately 100 traffic operations and traffic safety studies for Florida Department of Transportation (FDOT) Districts 1, 5, and 6. Areas of proficiency include traffic operations, intersection analysis, signalization design, signing and pavement marking design, maintenance of traffic analysis and design, roadway repurposing "road diet" studies, pedestrian crossing analysis, traffic signal warrants, roundabout analysis, speed zone studies, traffic impact analysis, residential traffic calming plans, and project management. Mr. Schindler also has extensive experience in roadway design and construction engineering. Since recently joining Metric, Mr. Schindler has already began to assist on the various Task Work Orders (TWOs) and projects listed below.

REPRESENTATIVE PROJECTS

Traffic Engineer: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Specifically, Mr. Schindler is assisting the traffic engineering design for the Wiles Road and Coral Springs Drive Intersection Mast Arm Installation Improvements TWO.

Traffic Engineer: Traffic Engineering Services for Traffic Studies, City of Jacksonville: This contract is to provide various traffic engineering services which include: Crash Analysis with Mitigation Plans; Traffic Safety Studies with Mitigation Plans; Traffic Calming Plans; Traffic Impact Studies; Traffic Control Warrant Analysis; Access Management Plans; Traffic Circulation Plans and Traffic Routing Plans; Travel Time and Delay Studies; Review/Development/Revision of Engineering and Planning Documents; Evaluating and/or Conducting Traffic Operational/Safety Studies; Intersection Designs; and Public Information Meetings. Metric will develop safety and traffic operation studies for the installation of new traffic signals (signal warrant studies), isolation intersection analyses, roadway studies (speed zone, no-passing zones), highway lighting justification, as well as traffic calming analyses. This work also includes intensive data collection efforts, engineering and crash analyses, field reviews, and Benefit/Cost Analyses. *Mr. Schindler assists with the TWO for the Soutel Drive Lane Reconfigurations.*

Traffic Engineer: DW Traffic Operations ITS Consultant – Three Consecutive Contracts, FDOT District 1: This contract project includes a range of study, planning, design, integration, diagnostic, operations, management, review, evaluation and engineering services; including technical and administrative tasks for Intelligent Transportation System projects for District 1. Metric supports all facets of the Traffic Operations Office ITS Program, including ITS planning, ITS architecture, ITS design, ITS integration, ITS diagnostics and ITS Operations, including facilitating the Traffic Incident Management (TIM) Team activities and TIM initiatives. *Mr. Schindler is the Traffic Engineer assisting with the Road Ranger Signs TWO.*

Traffic Engineer: Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2018 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are

STEVEN SCHINDLER, PE, PTOE

Senior Engineer: Traffic

then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts. Task work orders completed under this contract include:

Engineer of Record | SR 518 at Pineapple Avenue Study: Mr. Schindler performed as EOR on a study to analyze traffic operations and safety conditions at the intersection of SR 518 and Pineapple Avenue in the City of Melbourne.

Engineer of Record | SR 19 at CR 455 Traffic Operations Study: Analyzed traffic operations and safety conditions at this rural "T"-intersection of an arterial state highway and major collector county road.

Engineer of Record | SR 50 at Tanner Road Traffic Operations Study: Analyzed traffic operations and safety conditions at this RCUT (reduced conflict U-turn) intersection.

Engineer of Record | SR A1A Speed Zone Study: Mr. Schindler performed as EOR on a speed zone study on State Road A1A in the Town of Indialantic.

Engineer of Record | SR 436 at Line Drive Study: Mr. Schindler performed as EOR on a study to analyze whether a pedestrian crosswalk should be installed at the signalized intersection of SR 436 and Line Drive in Orange County.

Traffic Engineer: Continuing Professional Traffic Engineering Services (2018-2019), Orange County: Metric provides miscellaneous professional traffic engineering services on this task work order (TWO) based continuing services contract to support the safe and efficient movement of all users of the County's transportation network. All work performed under this contract complies with the latest Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and the most recent edition of the Florida Department of Transportation (FDOT) Design Standards, Traffic Engineering Manual (TEM), Speed Zoning Manual, and Manual on Uniform Traffic Studies (MUTS) guidelines. Tasks will include but are not limited to: Data Collection (Turning Movement Counts & Machine Traffic Counts); Traffic Studies (Spot Speed Studies, Intersection Delay Studies, Origin & Destination Studies, Traffic Signal Warrant Studies, School Safety Studies, Pedestrian & Bicycle Safety Studies, Road Safety Audit (RSA) Studies, Miscellaneous Traffic Operational & Safety Studies, Roundabout Evaluations, and more); Traffic Signal, ITS, S&PM and Maintenance of Traffic Design Services; Studies & Design Review Support; Traffic Control/ITS Inventory Support; Minor Intersection Design; Signal/Corridor Retiming; Guardral Analysis & Design; and, Public Involvement Services. Completed task work orders under this contract include:

Engineer of Record | Plaza on University Alternative Traffic Impact Fee Study: Mr. Schindler served as the Engineer of Record on this TWO for the Continuing Professional Traffic Engineering Services contract. This is post-construction alternative traffic impact fee study to determine if additional impact fees would be owed by the developer (comparing actual post-construction conditions to projected conditions prior to construction).

SR 500 (US 441) Widening & Reconstruction, FDOT District 5: Reconstruction of 4.1 miles of SR 500 from a four-lane rural roadway to a six-lane divided urban arterial from Lake Ella Drive to Avenida Central in Lake County. Final plans were prepared for the construction of a curb and gutter roadway with bicycle lanes and a raised median within an existing 100'-200' right-of-way corridor. Work efforts included roadway plans, drainage design and permitting for four retention ponds, the removal of the existing bridge over CR 25, design survey and right-of-way mapping, signing & pavement marking plans, traffic control plans, utility coordination and the preparation of adjustments, and the design of five signalized intersections. This project was shelved in 2014, and in May of 2018, our team was asked to moved forward with the re-design. This project will be delivered using 3D design.

Traffic Engineer: SR 292 (Group 22-A) PD&E (Escambia County), FDOT District 3: SR 292 (Sorrento Rd. /Gulf Beach Hwy.) in Escambia County, to consider widening from a two-lane undivided to a four-lane divided urban typical section with bike lanes and sidewalks that will link Blue Angel Parkway to Navy Boulevard. The approximate limits of the project are from SR 292 (Sorrento Rd. /Gulf Beach Hwy.) (MP 12.030) to SR 295 (Navy Blvd.) (MP 17.246). This is a two-phase PD&E study. Stage 1 will complete a Feasibility Study to provide documented information necessary to determine fatal flaws, logical termini, purpose and need, and corridors or alternatives that meet performance metrics identified in the purpose and need. Once the feasibility report is completed, Metric will perform the remainder of the PD&E study, which will likely become a Type 2 Cat X. *Mr. Schindler serves as Traffic Engineer and has performed benefit cost ratio analysis for the project as well as other support tasks.*

PRIOR EXPERIENCE

10/2017 – 09/2018: Traffic Engineering Department Manager: Marlin Engineering, Inc. (Plantation, FL): Project Mr. Schindler was involved with during his year at Marlin Engineering:

- Hollywood CRA Young Circle Reconfiguration: As a Lead Traffic Engineer, Mr. Schindler analyzed existing and future conditions for the iconic Young Circle "traffic circle" in Downtown Hollywood where the objective was to convert the circle into a two-way street complex anchored by four modern roundabouts.

Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

SCHINDLER, STEVEN J.

2221 PINE OAK TRAIL
SANFORD FL 32773-7265

LICENSE NUMBER: PE57862

EXPIRATION DATE: FEBRUARY 28, 2021

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Transportation Professional Certification Board Inc.

certifies that

Steven J. Schindler

has met all of the requirements established by the Certification Board to use the title of

PROFESSIONAL TRAFFIC OPERATIONS ENGINEER

unless withdrawn by the Certification Board and subject to the provisions for renewal.

Certificate number 3313 issued in Washington, D.C., U.S.A.

August 14, 2012

Steven D. Hofener
Chair

PTOE
PROFESSIONAL TRAFFIC OPERATIONS ENGINEER
TRANSPORTATION PROFESSIONAL CERTIFICATION BOARD INC.

Executive Director

METRIC ENGINEERING

CHRISTOPHER DEW, PE, PTOE

Senior Engineer: Traffic

TECHNICAL EXPERTISE

Signal Retiming
ITS & Signal Design
Adaptive Signal Control Technology
Traffic Operations

YEARS OF EXPERIENCE

10 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #83840 (2017)
- Professional Traffic Operations Engineer – FL #4310 (2017)
- Professional Engineer – GA #041512 (2016)

PROFESSIONAL CERTIFICATIONS

- IMSA Senior Traffic Signal Field Technician - Level III
- IMSA Traffic Signal Inspector - Level I
- FDOT Traffic Signal Inspector - Level I
- Georgia DOT Plan Development Process (01/2015)

PROFESSIONAL AFFILIATIONS

- Member, Institute of Transportation Engineers (ITE)
- Member, International Municipal Signal Association (IMSA)
- Member, Intelligent Transportation Society (ITS), Georgia Section
- Member, American Society of Civil Engineers (ASCE)
- Member, Institute of Electrical and Electronics Engineers (IEEE), ITS & Vehicular Technology Societies

EDUCATION

- B.S., Civil & Environmental Engineering, Georgia Institute of Technology (2010)

PROFESSIONAL PROFILE

Mr. Dew has 10 years of multi-faceted traffic operations and ITS experience, including design, operations, analyses, retiming and studies. He is a well-qualified Project Engineer who holds a Professional Engineering license, is IMSA III certified, and has hands-on experience both in the field and in the office. Since recently joining Metric, he has begun to work on Metric's Continuing Services Contract with FDOT District 5 and performs retiming services on Metric's ITS GEC contract for the Puerto Rico Highway Transportation Authority (PRHTA). He has also worked on the Transit Signal Priority Study and Design project in District 5 which has given him unique understandings of controller software and hardware within the region.

REPRESENTATIVE PROJECTS

Traffic Engineer: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Traffic Engineer: Continuing Traffic Engineering Services on a Task Authorization Basis, Osceola County: Task authorization (TA), or Task Work Order (TWO), based contract to provide the County miscellaneous traffic engineering services and other related tasks as they arise. Services can fall under one of three "task groups" with various support services. 1) Traffic Data Collection to include 24-hour/48-hour Directional Volume and Turning Movement Counts (TMCs) data collection as well as Travel Time and Delay, Intersection Delay, Queue Analysis, Gap Analysis and Speed Studies. 2) Traffic Operations/Traffic Impact Studies to include: Traffic Calming Studies, Traffic Signal Warrant Analyses, Speed Limit Studies, Traffic Signal System Timing Evaluation & Design, Roundabout Analysis, Access Management Analyses, and Roadway Lighting Justification Analyses. 3) Traffic Engineering/ITS: Design, Plans Preparation and Design/Plan Review Support to include: Minor Intersection Design, Lighting Design, ITS Design (DMS, CCTV, etc.), Communication Network Design, and Traffic Management Center (TMC) Support.

Traffic Engineer: ITS Network Administration, Maintenance and Repairs (RFP-14-03866-TP), Osceola County: This project provides Osceola County with ITS Maintenance, TMC support, and network troubleshooting/repair as a follow up to the Osceola County ATMS projects. Scope of work includes network oversight duties, maintaining device warranties (tracking and managing), monthly inventory reporting, troubleshooting of fiber and network communication, assigning and managing all IP addresses, and support services for natural disasters.

Traffic/Signal Retiming Engineer: Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2017 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

CHRISTOPHER DEW, PE, PTOE

Senior Engineer: Traffic

Traffic Engineer: Road Safety Audit (RSA) & Safety Studies & Operational Studies Contract, FDOT District 2: The project includes conducting RSA and their corresponding follow-up safety studies as well as operational studies. The RSAs, analysis and recommendations produced are then used in the development of safety recommendations targeting the emphasis areas of the Florida Strategic Highway Safety Plan (FL-SHSP). Additional tasks include resolving complaints or requests received from concerned citizens, review fatal crashes, monitoring safety in specific work-zones, update and maintain the Department's Skid Hazard Reporting System, develop and utilize GIS based tools to identify locations with targeted crash patterns, perform Highway Safety Manual (HSM) analysis, and public involvement.

Signal Timing Engineer: Traffic Signal Retiming (2018 – 2020), Metroplan Orlando: As a prime consultant, Metric provides professional services for conducting corridor retiming on an as needed basis issued by task work orders. Overall, Metric develops traffic signal timing plans for implementation to improve the efficiency and safety along with corridors under MetroPlan's jurisdiction. Arterial retiming efforts includes but is not limited to: system operation review, traffic signal equipment inventory, analysis/implementation/documentation, data collection (4-Hr & 8-Hr Turning Movement Counts with pedestrians, bicycles, and trucks; 24-Hr Traffic Counts for Intersections; 7-Day Continuous Traffic Counts in both directions; and more) as well as public presentations and other miscellaneous tasks. Tasks have included performing Corridor Retiming for seven corridors including Mills Avenue, Corrine Drive, and Narcoosee Road.

Signal Timing Engineer: MetroPlan Orlando Traffic Signal Retiming (sub), MetroPlan Orlando: As a subconsultant to HDR on this contract, Metric is providing traffic signal retiming services. To date, we have performed the retiming on the following services: Livingston Street (6 Intersections) and Columbia Street (5 Intersections) where data collection was provided, and retiming was performed for Columbia Street. 12 intersections total with software such as Synchro Version 10, Tru-Traffic Version 10, and Trafficware (ATMS.now/StreetSync). All controllers were Naztec 980. Upcoming work consists of the data collection and retiming for Pine Hills Road which will include 7 intersections.

Traffic Engineer: River to Sea ITS Master Plan Phase II, River to Sea TPO: Metric is providing professional services to update the TPO's ITS Master Plan that incorporates all members of governments under the River to Sea TPO. This master plan will evaluate the current systems, determine future needs and formulate an implementation strategy for the future development and maintenance of the ITS. The Master Plan also incorporates various methodologies accounting for emerging technologies in vehicles and devices used in the transportation infrastructure and communication system in conformance with the national, statewide, and regional architectures.

Traffic/Signal Engineer: Transit Signal Priority (TSP) Study, FDOT District 5: District Five Traffic Operations office retained Metric to perform the study, design, and implementation of a TSP system for LYNX, a bus system run by the Central Florida Regional Transportation Authority. The TSP project was divided into three phases. During Phase 1, the project concentrated along bus routes that have a direct connection to the SunRail stations (DeBary Station to Sand Lake Road Station). Phase 2 and Phase 3 focused on additional bus routes considered secondary SunRail station feeders. As part of the study portion of the TSP project, bus routes were identified using the buses AVL/APC data, meetings with all stakeholders were held, priority conditions and monitoring parameters were established, field data was collected, system requirements were identified, and a Concept of Operations (ConOps) was produced. TSP is a means to give transit vehicles an extended green time or reduce the red time, under pre-defined conditions (e.g., late arriving buses), to reduce the time buses are slowed down by traffic signals.

Traffic Engineer: SR 500 (US 441) Widening & Reconstruction, FDOT District 5: Reconstruction of 4.1 miles of SR 500 from a four-lane rural roadway to a six-lane divided urban arterial from Lake Ella Drive to Avenida Central in Lake County. Final plans were prepared for the construction of a curb and gutter roadway with bicycle lanes and a raised median within an existing 100'-200' right-of-way corridor. Work efforts included roadway plans, drainage design and permitting for four retention ponds, the removal of the existing bridge over CR 25, design survey and right-of-way mapping, signing & pavement marking plans, traffic control plans, utility coordination and the preparation of adjustments, and the design of five signalized intersections. This project was shelved in 2014, and has recently been moved forward for re-design, and will be delivered using 3D design. *Chris is designing the signal interconnect and S&PM associated with this project.*

SR A1A Deerfield Beach PD&E Study, City of Deerfield Beach: PD&E Study from south of SE 3rd Street to north of NE 7th Street in Broward County (a distance of approximately 0.841 miles). The study considered additional through lanes, special treatment and/or additional lanes at major intersections and widening of the crossroads where necessary to provide intersection operation at an acceptable Level of Services. Tasks included public involvement, preparation of PDSR, utility coordination, coordination with City of Deerfield Beach and review of environmental documentation. This Study is being conducted as a joint effort between the City of Deerfield Beach-Florida Department of Transportation-Community Redevelopment Agency (CRA).

Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

DEW, CHRISTOPHER ROBERT

3260 RETREAT VIEW CIRCLE
SANFORD FL 32771

LICENSE NUMBER: PE83840

EXPIRATION DATE: FEBRUARY 28, 2021

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9/23/2019

Transportation Professional Certification Board, Inc.

certifies that

Christopher Robert Dew

has met all of the requirements established by the Certification Board
to use the title of

Professional Traffic Operations Engineer

unless withdrawn by the Certification Board and subject to the provisions for renewal.
Certificate number 4310 issued in Washington, DC, USA

7/19/17

Michael K. Park
Chair

PTOE
PROFESSIONAL
TRAFFIC
OPERATIONS
ENGINEER
TRANSPORTATION PROFESSIONAL CERTIFICATION BOARD INC.

Jeffrey F. Paniati
Executive Director

BidSync

Broward County Board of
County Commissioners

PNC2119168P1

Certificate of Completion

Christopher R. Dew

Has Completed a Florida Department of Transportation Approved Temporary Traffic Control (TTC) Advanced Course.

04/22/2023	165	Indhiyadira Pinto	49356
Date Expires	FDOT Provider #	Instructor	Certificate #

Race to Safety Training
PO Box 290464
Port Orange, FL 32129
www.racetosafety.com
sherrie@racetosafety.com

FDOT

For more information about Temporary Traffic Control (TTC) or to verify this certificate

www.motadmin.com

Traffic Signal Program
Christopher R. Dew
Is Hereby Certified as a
Traffic Signal Inspector
By completing all requirements and examination.

Cert #	*Date*	*Good Thru*
SI_105432	*5/20/2018*	*5/20/2021*

Christopher Robert Dew

is hereby certified as a

IMSA/FOA Certified Fiber Optic Technician

by completing all requirements and examination for certification
on 8/2/2019

Valid thru 8/2/2022
Certification #CFOT_105432

Toby Cummings

Toby Cummings, CAE - Executive Director

BidSync

Broward County Board of
County Commissioners

PNC2119168P1

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For detailed information on Renewal Requirements visit: www.IMSAsafety.org/certrenew

Renewal Requirements:

Complete a personal log of your continuing education by documenting training and/or certification(s) received. Documentation can be recorded online in your IMSA profile OR by downloading the Renewal Packet found on the Renewal Requirements page. Certificates of completion, transcripts and any other relevant documentation can be uploaded on the IMSA website.

Options for Renewal:

- Continuing Education
- Attending Certification Course
- Achieving the Next Level Certification

Documentation

It is the certification holder's responsibility to submit proof of continuing education. Continuing Education Credits (CECs) can be submitted for approval online in your IMSA profile.

Renewal After Expiration

The certification is no longer valid after the expiration date. However, you may reinstate your certification within one year of the expiration date by documenting 16 CEC hours for most certifications. If the certification is not reinstated within one year, you must renew through the normal certification process by taking the current certification exam at the highest level previously attained and paying the regular certification exam fee. Only the regular certification exam fees will be due, and retake of prerequisites will not be required. IMSA will not recognize any IMSA certificate(s) without an expiration date.

597 Haverty Court, Suite 100
Rockledge, FL 32955
321-392-0500 www.IMSAsafety.org

Name: Christopher Robert Dew
IMIS ID: 105432
Section: Florida
Signature:

Certification and Expire Date

IMSA/FOA Certified Fiber Optic Technician - 8/02/2022
Traffic Signal Inspector - 5/20/2021

Conforms to PennDOT Pub 408 Section 901.3(y)

RICARDO GONZALEZ, PE

Senior ITS/Traffic Engineer

TECHNICAL EXPERTISE

Lighting Design
Traffic Operations
Traffic Engineering & Studies
Signal Retiming
ITS Design

YEARS OF EXPERIENCE

21 Years

CERTIFICATIONS

- IMSA Traffic Signal Field Technician – Level II
- IMSA Traffic Signal Inspection
- IMSA Traffic Signal I
- FDOT Advance Maintenance of Traffic
- CTQP Drilled Shaft Inspector

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #66564 (2007)

EDUCATION

- M.S., Engineering Management, Universidad Metropolitana (1995)
- Specialist in Information Systems, Universidad Católica Andres Bello, (1987)
- B.S., Mechanical Engineering, Universidad Simón Bolivar (1987)

PROFESSIONAL PROFILE

Ricardo Gonzalez, PE has over 21 years of traffic engineering experience, including lighting design using 3D modeling for photometric calculations, ITS/ATMS design, retiming with traffic simulation and field implementation, time-space development, programming of signal timings, and plans preparation. Ricardo serves as Metric's Lighting Engineer of Record for the projects that include this work group.

REPRESENTATIVE PROJECTS

Traffic Engineer: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Traffic/Signal Engineer: Traffic Signalization Improvement Program, Broward County: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services. Metric led a task as part of a State Energy Program (SEP) grant to develop and implement updated signal timing plans for 110 signals with Naztec controllers on four separate corridors in Broward County, Florida. The work included data collection, establishment of appropriate models, and development of controller settings, implementation and fine-tuning of those settings in the field. Ultimately, travel times were reduced by up to 50% along all of the corridors. *Reference: Michael S. Cleary, PE, 954-357-5838*

Signal Enhancement Conceptual Plan, Broward County: This task included conceptual planning over five years to provide a framework to effectively move the County's SEI program forward utilizing a cost-effective method that maximized the use of existing infrastructure and equipment. It is anticipated that these planning efforts will be used to develop a series of projects that will evolve the existing signal systems, and will identify immediate needs. The planning efforts were consistent with the NITSA, the State of Florida ITS Architecture, the District Four RITSA, and the Florida ITS Strategic Plan (Operations Perspective). This work order involved: Data and Information Collection, Identifying County and Transportation Needs to Improve the Traffic System, Technology Assessment and Evaluation, Feasible Alternative Analysis and Recommendations, and Final Reports and Presentations.

Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2001 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

Lighting Engineer: DW Community Traffic Safety Program (CTSP) – Three Contracts, FDOT District 5: Task Work Order based Districtwide contract comprised of miscellaneous engineering services required to conduct studies and/or to design and prepare a set

RICARDO GONZALEZ, PE

Senior ITS/Traffic Engineer

of contract plans which may include roadway, signing and pavement markings, signalization, lighting, sidewalk and/or bicycle ways along the transportation corridor that includes State highways, County streets, and City streets.

Lighting Engineer of Record: High Mast Lighting on I-75 at I-275 and CR 683/Moccasin Wallow Road (Design-Build), FDOT District 1: This project consists of the design and construction of new high mast lighting at the interchanges of I-75 and I-275 and CR 683 (Moccasin Wallow Road) since existing high mast lighting assemblies have depreciated beyond repair & do not meet current standards. The new lighting system is being designed (using LED Luminaires) to meet current design standards and ensure that the existing high mast foundations are at full depth removal, as required by the RFP.

Project Manager: High Mast, Conventional or Hybrid Lighting on I-10 (SR 8) at US 90, CR 137, and CR 229 Interchanges: This project consists of the design and construction to install high mast, conventional, or hybrid lighting at three intersections including: I-10/SR 8 at US 90 and I-10/SR 8 at CR 137 in Suwanee County and I-10/SR 8 at CR 229 in Baker County.

Consultant Services for Transportation Management Center Area-Wide – Three Consecutive Contracts Prime/Sub, FDOT District 2: Services to provide a wide range of operational, engineering and planning services to include technical, management and administrative tasks for District 2 ITS Program and Traffic Management Center. Traffic Incident Management (TIM) Team support includes bi-monthly meetings, newsletters, etc. Under this work, Metric performed the retiming services on SR A1A, and clearance timing calculations for different signalized intersections in the Jacksonville and Palatka areas.

Districtwide Miscellaneous Safety Design, FDOT District 2: Metric is responsible for the design and preparation of a complete set of construction contract documents (specifications packages, etc.) and any incidental engineering services, as necessary, for improvements to various roadway transportation facilities. Services included roadway design (typical sections, plan/profiles, cross slopes, access management, etc.), Traffic Control Plan (TCP), drainage design, utility coordination, environmental/permitting, miscellaneous structures, S&PM, signalization, lighting, survey/SUE, and geotechnical.

Road Safety Audit (RSA) & Safety Studies & Operational Studies Contract, FDOT District 2: The project includes conducting RSA and their corresponding follow-up safety studies as well as operational studies. The RSAs, analysis and recommendations produced are then used in the development of safety recommendations targeting the emphasis areas of the Florida Strategic Highway Safety Plan (FL-SHSP). Additional task includes resolving complaints or requests received from concerned citizens, review fatal crashes, monitoring safety in specific work-zones, update and maintain the Department's Skid Hazard Reporting System, develop and utilize GIS based tools to identify locations with targeted crash patterns, perform Highway Safety Manual (HSM) analysis, and public involvement.

Safety Study & Retiming Services for Gateway Parkway & St. Johns Town Center Parkway, FDOT District 2: As a TWO under Metric's RSA & Safety/Operational Studies contract, Metric performed signal retiming and safety study services for non-system corridors Gateway Parkway and St. Johns Town Center Parkway in Duval County, which included a total of 17 signalized intersections. Services also included data collection efforts (intersection condition diagrams, site condition diagrams, machine counts, TMCs, travel time and delay studies, and Synchro modeling) as well as producing a Safety Benefit/Cost Ratio. Coordination efforts included the City of Jacksonville.

Traffic Operations Minor Design Consultant, FDOT District 1: This TWO-based contract includes several minor design projects in various District 1 counties. The scope of the work orders includes Sidewalks (Safe Routes to School Program), Turn Lanes, Signal Upgrades, and Lighted Overhead Signing structures at various interchanges along Interstate 75 within the L/A Right-of-Way. Metric has coordinated closely with both FDOT staff and local maintaining agency staff regarding design preferences and is currently performing post design services on the projects that are now under construction. Ricardo's role on this contract involves the lighting design and analyses along I-75.

Lighting Designer: SR 45 (US 41) from Taylor Road to South of Aqui Esta Drive in Charlotte County, FDOT District 1: In 2011, as a task work order issued under Metric's Traffic Operations Minor Design contract with District 1, Metric prepared a Lighting Plans and LAR which included the relocation of 33 existing light poles and the installation of one new light pole. They were relocated due to maintenance concerns from the City of Punta Gorda regarding water intrusion into pull boxes which caused lighting failures. In addition, Metric developed a Design Variation Documentation for Lighting Design Criteria to justify the relocations.

SR 21 (Blanding Blvd.) from CR 220A (Old Jennings Rd) in Clay County to Collins Drive in Duval County, FDOT District 2: This ITS and Signal Interconnect Project consisted of interconnecting 28 existing signalized intersections along SR 21 (Blanding Blvd.) from CR 220A (Old Jennings Rd) in Clay County to Collins Drive in Duval County and the installation of 7 arterial dynamic message signs, 19 closed-circuit television cameras, 21 Ethernet switches with all ancillary components needed to connect and operate a complete ITS and signalized fiber interconnect system. The fiber optic backbone for the project utilized the existing single-mode and multi-mode fiber optic cable.

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

GONZALEZ, RICARDO JOSE

3833 HARTWOOD LN
JACKSONVILLE FL 32216

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EXPIRATION DATE: FEBRUARY 28, 2021

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Transportation Program
Ricardo J. Gonzalez
Is Hereby Certified as a
Transportation Center System Specialist Level I
By completing all requirements and examination.

Cert #	Date	Good Thru
TCSS_79630	5/15/2017	5/15/2020

PNC2119168P1
Broward County Board of County Commissioners
p. 73
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9/23/2019

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Traffic Signal Renewal Program

Be It Known That

Ricardo J. Gonzalez

is hereby certified as a

Traffic Signal Field Technician Level II

by completing all requirements and examination

For Certification on this Ninth day of September, 2014

Valid Thru: 9/16/2017

INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION INC. CORPORATE SEAL 1938 NEW YORK

Certificate Number

BE_79630

Michael T. Volling - Executive Director

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Technician CTQP Qualification Report

Date Ran: 9/10/2019 1:52:50 PM

Technician Name: Ricardo Gonzalez

Qualification Area	Qualification Status Code	Qualification Date	Expiration Date
QQXX8888 - DRILLED SHAFT INSPECTION			
	VALID	2/4/2009	2/4/2014

Exam Name	Course Name	Exam Date	Score	Exam Result
Drilled Shaft Inspection Written Exam - Rel.3	Pile Driving Inspection 1	02/04/2009	76	Pass
Monitored 10 Shafts, at least 5 Shafts constructed with wet method			100	Met

METRIC ENGINEERING

STEFAN ESCANES, PE

Senior ITS/Traffic/TSM&O Engineer

TECHNICAL EXPERTISE

Traffic Data Collection
Traffic Operations
Traffic Analysis
Transportation Planning
Noise Analysis

YEARS OF EXPERIENCE

8 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #80578 (2016)

CERTIFICATIONS

- IMSA Traffic Signal Technician Level II
- FDOT Traffic Noise Analysis Course BT-19-0005
- FHWA TNM 2.5

EDUCATION

- B.S., Civil Engineering, Florida International University (2010)

PROFESSIONAL PROFILE

Mr. Escanes currently serves as Project Manager and Data Collection Manager for the South Florida Region. His expertise includes managing multiple concurrent work orders and data intensive projects through the various traffic operations, transportation planning, and PD&E Study contracts. Additional experience includes traffic analyses for Traffic Operations and PD&E Studies using the latest traffic simulation software including Vissim, Synchro, Sidra, Corsim and more.

His years of experience includes Active Arterial Management (AAM) and signal retiming and implementation in Florida. He has also worked on adaptive and Transit Signal Priority (TSP) projects, knowing when to apply these operational technologies for maximum agency benefit. Stefan is one of the main transportation engineers at Metric who performs in-depth traffic modeling and simulation services, including for roundabouts statewide.

In addition, Mr. Escanes is IMSA Traffic Signal Technician Level II certified proficient in the use of all latest data collection equipment, PTMS count collection, signal controller programming, and wireless ITS networks.

REPRESENTATIVE PROJECTS

Deputy Project Manager / Traffic Engineer: Districtwide: Districtwide Traffic Operations & Safety Studies Consultant Services, FDOT District 6: The general purpose of this TWO-based contract is to provide traffic engineering services through the development of various traffic operations and safety studies that will be identified for intersections, arterials, etc., and related improvement recommendations and evaluations. Studies/Analysis along with supporting tasks include: Pedestrian Facilities Evaluations, Mid-Block Crosswalk Evaluations, Crash Evaluation and Mitigation Strategies, Signal Warrant Analysis, Arterial Analysis/Signal Retiming, D6 Bottleneck Location Identification & Prioritization, D6 Expected Value Analysis (EVA) Update, Traffic Calming Evaluations, Qualitative Assessments, Left Turn Phase Analysis, Signalization Plans, Speed Zone Study and Mast Arm Structural Analysis.

District 6 Bottleneck Locations: Identification and Prioritization in Miami-Dade County, FL, FDOT District 6: This is a major TWO under Metric's DW Traffic Operations & Safety Studies Consultant Services contract. The purpose of this study is to identify and develop a priority list of bottleneck locations (bottlenecks) that impact the morning peak traffic period. The *D6 Bottleneck List* is being developed to prioritize identified locations to evaluate, then determine potential improvements. Efforts to identify, mitigate source and minimize the duration of bottlenecks, will provide substantial benefits in vehicle delay. Data collected for each of the 50 Arterials include Travel Time Runs, 4-hour Peak Direction Traffic Counts, 4-hour Peak Direction Spot Speed Study, 4-hour AM Peak tmc's at key intersections, Queue Data from Drone Aerials and Bottleneck Impact Area. This data is being used to rank the priority list by Bottleneck Impact Area, Queue lengths, Travel Times, Facility Type, Facility Capacity, Time of Day showing first signs of congestion and Duration of bottleneck.

Arterial Analysis for Adaptive Signal Control Technology Pilot Project: SR 924/NW 119 Street from NW 32 Avenue to NW 5 Avenue, Miami, FL, FDOT District 6: This is a major TWO under Metric's DW Traffic Operations & Safety Studies Consultant Services contract which involves the Arterial Analysis of existing and four potential alternative scenarios, on SR 924/NW 119 Street from NW 32 Avenue to NW 5 Avenue in Miami, Florida. The Department is preparing to deploy an adaptive signal system as part of the SR 924/NW 119th Street Adaptive Signal Control Technology (ASCT) Pilot Project. The intent is to provide safety, mobility, and reliability improvements for commuters, freight and transit users along the corridor and also manage fluctuations due to regional special events, traffic incidents and the impacts from proposed regional developments.

Additional TWOs under this DW Traffic Operations & Safety Studies Consultant Services contract:

- NE 36 Street-Pedestrian Facilities Evaluation
- NW 12 Ave. at NW 19 St. Request for Crosswalk; LeJeune Rd. at Minorca Ave.- Pedestrian Facilities Evaluation
- Red Road at SW 16 Street-Pedestrian Facilities Evaluation
- SR A1A/MacArthur Causeway/5th Street – Arterial Analysis/Signal Retiming
- SR A1A/Indian Creek Drive/Abbott Avenue/Harding Avenue – Arterial Analysis/Signal Retiming
- SR A1A/Collins Avenue at 63rd Street Northbound Loop Detector Installation Evaluation
- SR A1A/Indian Creek Drive at 65th Street – Pedestrian Evaluation

STEFAN ESCANES, PE

Senior ITS/Traffic/TSM&O Engineer

Deputy Project Manager: Districtwide Traffic Engineering Support Services Consultant, FDOT District 6: Perform miscellaneous Maintenance of Traffic (MOT) support services within work zones including, but not limited to (1) providing real time traffic monitoring and traffic data collection (2) implementation of smart technologies and concepts (3) signal timing support (4) reviewing MOT Plans and determining the need of the detailed analysis of MOT impacts (5) analysis of MOT alternatives (6) Traffic simulation and modeling of MOT alternatives (7) Coordination with traffic signal maintaining agencies, FDOT offices, and other public agencies (8) providing the data collection and analysis of traffic prior to the beginning of project construction (9) Miscellaneous activities to support the District traffic operations office such as traffic operations studies, coordination with municipalities and other agencies. This TWO-based contract was initially utilized to develop travel time thresholds and monitor travel times for the SR 826 / I-75 Express Lanes Design Build Project. A "mobility incentive" is provided for Construction Team to encourage achievement of highest travel time performance during the construction. A penalty is assessed against the "mobility incentive" when the travel time along the corridor exceeds the travel time thresholds. Travel time data is tracked in real-time during the construction by Bluetooth/Wi-Fi vehicle detection devices. These devices utilize wireless network equipment to transfer data to a central server where it is processed. Travel time reports are provided to the Construction Team on a two-day interval. A monthly summary of penalties against the "mobility incentive" is also prepared and distributed. Grid power from the sign luminaires is utilized for providing power to all the travel time data collection stations.

Districtwide Traffic Operations Studies Consultant Services, FDOT District 6: The general purpose of this Task Work Order (TWO) based contract is to provide traffic engineering services through the development of various traffic operations studies that will be identified for intersections, arterials, etc., and related improvement recommendations and evaluations; over 80 TWOs completed, following is a sample project list.

- US-1/South Dixie Highway NB On-Ramp to SR 826/Palmetto Expressway Safety Evaluation and Safe Curve Speed Study: Evaluated potential overhead sign configurations for improved clarity and readability and Safe Curve Speed Study
- SR 860-Miami Gardens Drive between Biscayne Boulevard & West Dixie Highway QA: Included analysis of high crash location with proximity to railroad crossing and school speed zone
- Lehman Causeway at Country Club Drive Level of Service Analysis: Findings and recommendations presented to FDOT Scoping Committee
- SW 57th Avenue Pedestrian Crosswalks Variation: Evaluated installation of crosswalks to provide continuity of pedestrian facility along the project corridor and meet ADA standards
- US 27/SR 25 Okeechobee Road at NW 138th Street – Southbound Lane Configuration Assessment: Performed benefit/cost analysis based on crash reduction factors

Traffic Engineer: Districtwide Traffic Operations Support Services, FDOT District 6: This task work order basis contract has been utilized to develop travel time thresholds and monitor travel times for Palmetto Expressway Express Lanes project. A "mobility incentive" is provided for Construction Team to encourage achievement of highest travel time performance during the construction. A penalty is assessed against the "mobility incentive" when the travel time along the corridor exceeds the travel time thresholds. Travel time data is tracked in real time during the construction by Bluetooth/WiFi vehicle detection devices. These devices utilize wireless network equipment to transfer data from the devices to a central server where the data is processed. Travel time reports are provided to the Construction Team on a two-day interval. A monthly summary of penalties against the "mobility incentive" is also prepared and distributed. Grid power from the sign luminaires is utilized for providing power to all the travel time data collection stations.

Project Manager: Miami Beach Active Traffic Management, City of Miami Beach: As part of this effort, traffic along various key corridors within the City of Miami Beach are being actively monitored for abnormal travel conditions during incidents such as crashes, lane closures, abrupt volume increase, etc. Traffic Operators utilize the CCTV cameras and Bluetooth/Wi-Fi vehicle detection devices to provide travel time reports to City staff and signal engineer in order to evaluate and implement signal timing modifications as appropriate. There are four main objectives for the Active Traffic Management program (1) Minimize traffic impacts. (2) Manage and provide orderly flow of traffic. (3) Minimize the use of police resources for traffic control activities. (4) Relay critical real-time travel information via social media (Twitter) and/or Variable Message Signs (VMS signs). In addition, signal timing patterns were developed for various key corridors to accommodate the traffic flow during special events. The signal timing recommendations were developed using traffic counts, Synchro models and engineering judgment. *Client: City of Miami Beach, Contact: Mr. Josiel Ferrer-Diaz, (305) 673-7000, Begin/End Dates: June 2014 – Ongoing*

Traffic Engineer/Traffic Simulation: DW TSM&O Studies & Design Contract (sub to TEDS) – I-4 Ramp Metering, FDOT District 5: As a sub to TEDS on this DW contract, Metric provided Ramp Metering Study Services for I-4 at the following Downtown Orlando interchanges: Princeton Street, Ivanhoe Boulevard, SR 50 (Colonial Drive), Amelia Street, South Street, Anderson Avenue, Orange Blossom Trail and John Young Parkway. The work included data collection, design traffic projections, ramp signal modeling, concept development and evaluation, as well as stakeholder coordination and System Engineering documentation development or update (ConOps, SEMP, RITSA) to include ramp metering.

Ron DeSantis, Governor

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STATE OF FLORIDA

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ESCANES, STEFAN ANDRE

1945 JOHNSON STREET
HOLLYWOOD FL 33020

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Broward County Board of County Commissioners

PNC2119168P1

CERTIFIED PUBLIC SAFETY TECHNICIAN

IMSA

Stefan A. Escanes

is hereby certified as a

Traffic Signal Field Technician Level II

by completing all requirements and examination for certification
on 4/15/2019

Valid thru 4/15/2022
Certification #BE_113463

Donald A. Fullerton - Interim Executive Director

Broward County Board of
County Commissioners
EXHIBIT

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Complete a personal log of your continuing education by documenting training and/or certification(s) received. Documentation can be recorded online in your IMSA profile OR by downloading the Renewal Packet found on the Renewal Requirements page. Certificates of completion, transcripts and any other relevant documentation can be uploaded on the IMSA website.

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Attending Certification Course

Achieving the Next Level Certification

Documentation

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Renewal After Expiration

The certification is no longer valid after the expiration date. However, you may reinstate your certification within one year of the expiration date by documenting 16 CEC hours for most certifications. If the certification is not reinstated within one year, you must renew through the normal certification process by taking the current certification exam at the highest level previously attained and paying the regular certification exam fee. Only the regular certification exam fees will be due, and retake of prerequisites will not be required. IMSA will not recognize any IMSA certificate(s) without an expiration date.

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membership@IMSAsafety.org
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Certification	Expires
Traffic Signal Field Technician Level II	4/15/2022

Name Stefan A. Escanes
IMSA ID# 113463
Section: Florida
Signature:

METRIC ENGINEERING

PENNY KAMISH

TMC Operations Manager

TECHNICAL EXPERTISE

Project Management
RTMC Operations
Performance Measures
Arterial Management
Incident Management
Public Outreach

YEARS OF EXPERIENCE

30 Years

CERTIFICATIONS

- SHRP-2 "Train the Trainer"
- IMSA Transportation Center System Specialist Level II
- IMSA Advanced Maintenance of Traffic (MOT)
- ISO 700

PROFESSIONAL BIO

Ms. Kamish has 30 years of experience in Management Traffic Operations and the dissemination of real-time traffic information. She has been a member of the North Florida Freeway Management Team, now referred to as Traffic Incident Management (TIM), for 20 years. She also has a strong record of service within Public/Private sectors coordinating scheduled and non-scheduled traffic events (incidents, special events, hurricanes, major roadway closures and wildfires).

Ms. Kamish works diligently as the Project Manager on Metric's District 2 RTMC Operations contract as well as serving as Operations Manager on several operations related contracts or provides assistance producing Standard Operations Guidelines (SOGs) and/or Standard Operations Procedures (SOPs), and Performance Measure Dashboards for reporting purposes.

REPRESENTATIVE PROJECTS

2012 – Present: Consultant Project Manager: RTMC Operations Contract, FDOT District 2: This is an Operations project involving the day to day management of two locations of the ITS Traffic Management Center. Responsibilities include the use of several software programs, including FDOT's SunGuide, to monitor District 2 devices, including 1,914 ITS Devices (732 CCTVs; 199 DMS/ADMS/DDMS; 719 MVDS; 22 RWIS; four Beacon; 238 BlueTOAD) for the purpose of detection of roadway obstructions, including disabled vehicles, crashes, construction as well as congestion. Metric staff has been actively involved in all aspects of the upcoming Express Lanes and First Coast Expressway deployments, including SOPs, training modules and hands on testing of SELS software and simulation. Metric is also responsible for the dispatch of Road Rangers, FDOT Maintenance and RISC contractors. The Network staff is actively involved with the District 2 ITS SunGuide System, both for testing, troubleshooting and the integration of new devices. Metric staff monitor all 511 feedback messages reporting traffic incidents, contact the motorists leaving the feedback to obtain additional information, then make the appropriate FDOT District aware of the incident. Bi-lingual Operators provide Spanish floodgate recording for all Districts, as requested, as well as providing critical testing for the Spanish module of the 511 system, both phone and website.

City of Gainesville Signal Operations: As a part of our District 2 RTMC Operations contract, Metric provides Operators to the City of Gainesville to monitor arterial roadway conditions and provide traffic information to motorists. Based off of criteria and timing plans set up by the City, Metric Operators can flush a ramp back up before it reaches the through lanes as well as during lane-blocking incidents. This contract also involves traffic management to running escorts for large events like a UF Football game and Gator Nationals. Our staff dynamically changes timing plans "on the fly" (based on what the municipality provides) to maximize traffic patterns. Changes are tracked via performance measures to see the C/B Ratio per event due to the signal retiming. Metric Staff also have worked with ATMS.now and SWRI to develop a signal interface in SunGuide. This will act as a modified Integrated Corridor Management (ICM).

10/2008 – 11/2016: Consultant Project Manager: RTMC Operations Contract, FDOT District 3: Metric operated and managed the District 3 RTMC Contract from Jacksonville (as part of our District 2 Contract) giving us unparalleled experience in managing satellite offices and multiple locations. This position was based out of Jacksonville and covered District 3 in Florida (Panhandle). The Pensacola RTMC (Greater Escambia County) opened in February 2011. District 2's coverage of District 3 required operations from 7AM-9 PM Monday through Friday as well as bi-lingual on-call support for the State. Metric remotely handled ALL State Roads throughout District 3 and over 200 miles of interstate 10. Due to almost non-existent ITS device deployments Metric specialized in partnerships and 3rd Party Data confirmation to ensure quality data was being disseminated. Partners included Tallahassee Regional Communications Center (TRCC) local police, Sheriff's Offices, Fire Departments, EOC's, maintenance, construction, and PIO's. Following turnover to the Consultant RTMC Staff in 6/2017, Metric continued to assist the District 3 RTMC consultants until November 2016, when the Server connection to District 3 was disconnected by District 2.

CSC for Integrated Corridor Management - Freeway/Arterial Operations, FDOT District 5: The FDOT ICM project is seeking to improve overall operations and mobility in the Central Florida area; specifically, through the operation and management of the Regional Traffic Management Center (RTMC) and associated programs on both the freeway and arterial systems. Metric Engineering functions as an extension of the Department's resources, providing professional services for a wide range of engineering, technical, management and administrative services to assist with numerous Transportation System Management & Operation (TSM&O) projects within the work program. General work elements include RTMC staffing and operations for both freeways and arterials, project management, integration, TIM/first responder coordination, and public information assistance. *On an as-needed basis, Ms. Kamish assists with Operations, SOG/SOP development/updates, and special event coordination.*

PENNY KAMISH

TMC Operations Manager

Miami Beach Active Traffic Management, City of Miami Beach: As part of this effort, traffic along within the City of Miami Beach ais actively monitored for abnormal travel conditions, including incidents, construction and lane closures as well as the need for signal timing modifications to improve traffic conditions and the programming of VMS throughout the city. Additionally, traffic operators coordinate with FDOT District 6 for alerts through FL511 and DMS. Traffic conditions are continuously monitored between the hours of 7:00 AM - 9:00 PM utilizing CCTV cameras and travel time data from Bluetooth/WiFi vehicle detection devices. In addition, signal timing patterns were developed for various key corridors to accommodate the traffic flow during special events. The signal timing recommendations were developed using traffic counts, Synchro 8.0 models and engineering judgment.

Districtwide Traffic Operations Transportation System Management Support Services, FDOT District 4: This contract included support services for the TSM&O program within the FDOT to improve the efficiency of existing transportation network through performance monitoring, active arterial management, Integrating Freeway Management with Arterial Management and Incident Management on Arterials and Freeways.

Statewide AAM Needs Plan, FDOT District 4: As a major TWO under Metric's FDOT District 4 DW TSM&O Support Services contract, this Plan addressed the costs and requirements of Active Arterial Management (AAM) throughout the State of Florida, broken up by district. Metric coordinated with the State and appropriate maintaining agencies to identify the needs of each Agency and provided high level recommendations to support the implementation of the Plan. Regional metropolitan areas were focal points and areas of emphasis, although recommendations were also provided for rural and suburban arterial roadways.

Active Arterial Management TMC Operations "Palm Beach Living Laboratory" (Palm Beach and Broward Counties), FDOT District 4: As a major TWO under Metric's FDOT District 4 DW TSM&O Support Services contract, District 4 started a TSM&O "Living Lab" within Palm Beach County which was the leading edge of Active Arterial Management (AAM) at the time, developed and operated by Metric staff. Beginning in October 2012 with a deployment of CCTVs and travel time collection devices over a fiber optic infrastructure, the Living Lab allowed operators and timing engineers to cohesively identify and rectify the causes of congestion (both recurring and non) in real time. Roadways covered included: SR 7, Jog Rd, N. Military Trail, Okeechobee Rd., Southern Blvd., and Belvedere. In addition, to facilitate the operational efficiency of the project road limits, operators supplemented maintenance efforts by aiding County technicians in detecting malfunctions within both the ITS and signal systems ranging from traffic signals in flash to disruptions in communications. The interagency coordination associated with this initiative wasvital to the success of the nation's first true AAM Program. Following the success of the Living Laboratory, Metric identified and created device and EM locations for both Palm Beach and Broward counties for integration into District 4's SunGuide *This project was awarded the Davis (Prudential) Productivity Award for its contribution in providing a cost savings to the taxpayers of Florida and increased efficiency for Palm Beach's roadways.*

ITS Engineering, Design and Procurement Support Services in the San Juan Metropolitan Area, Puerto Rico Highway Transportation Authority (PRHTA): ITS GEC to assist PRHTA with the establishment of an ITS Program for the greater San Juan Metropolitan Area. Tasks include but not be limited to Systems Engineering, High-Level Design, Requirement Development and Tracking, Design/Build Criteria Package Development, and Construction Oversight and Quality Assurance for five phases of projects including a Traffic Management Center which will total approximately $45 Million in Construction dollars. Metric staff is on-site to assist PRHTA's ITS Project Manager throughout the contract in various roles including program management, potential integration and construction oversight. *On an as-needed basis, Ms. Kamish assists with TMC Operations, SunGuide, SOG/SOP development/updates, and special event coordination.*

Districtwide ITS Consultant - *Awarded 3 consecutive contracts*, FDOT District 1: This project includes a range of study, planning, design, integration, diagnostic, operations, management, review, evaluation and engineering services; including technical and administrative tasks for Intelligent Transportation System projects for District 1. Metric is to support all facets of the Traffic Operations Office ITS Program, including ITS planning, ITS architecture, ITS design, ITS integration, ITS diagnostics and ITS Operations, including facilitating the Traffic Incident Management (TIM) Team activities and TIM initiatives.

WESTWOOD ONE/METRO NETWORKS/SMARTROUTE SYSTEMS *(1988-2012)*

1988 – 2012: Director of Operations: Westwood One/Metro Networks/SmartRoute Systems (Area-Wide, Jacksonville, FL): Over 24 years, Ms. Kamish iprovided traffic information to 23 area radio station affiliates and five television affiliates. She established bonds with local law enforcement agencies and Department of Transportation, including memberships on various public committees. Specific contracts managed during this time includes:

2006 – 2012: Project Manager: Traffic Management Center (TMC), FDOT District 2: Part of the team to successfully bid and win the very first TMC contract for District 2 and launched contracts within 45 days of award. Ms. Kamish managed the TMC including responsibilities such as operation of FDOT Surveillance cameras; Dynamic Message Signs; Speed sensor devices; input data via SunGuide Software; F.H.P. Cad system; Dispatch of F.D.O.T. Maintenance Crews and Road Rangers; answering Interstate Call boxes; posting of Amber Alerts; overseeing performance measures and regular updates of Standard Operating Procedures Manual. Attended regular status meetings with F.D.O.T. Management and executed the publication of a monthly newsletter.

METRIC ENGINEERING

SIJONG JO, PhD

Senior Traffic Engineer

TECHNICAL EXPERTISE

Travel Demand and Traffic Analysis: Cube, TRANPLAN, TransCAD, Emme/2

Traffic Simulation/Analysis: CORSIM, VISSIM, SYNCHRO, HCS, Tru-Traffic, SIDRA, TRANSYT-7F, HCS, PASSER II, PASSER III

General: FORTRAN, Visual Basic, ArcGIS, SAS, SPSS, MS-Access, MS-Word, MS-Excel, MS PowerPoint

YEARS OF EXPERIENCE

22 Years

EDUCATION

- Ph.D., Civil Engineering, Florida International University (2003)
- Ph.D., Civil Engineering (all requirements met except dissertation), University of Florida (1993)
- M.S., Civil Engineering, Seoul National University (1987)
- B.S., Civil Engineering, Seoul National University (1985)

PROFESSIONAL PROFILE

Dr. Jo has an extensive background in all phases of traffic engineering and transportation modeling. He is especially proficient in computer modeling, traffic operation analysis, traffic and revenue forecasts and authored several publications. Dr. Jo has also spearheaded the completion of numerous traffic engineering assignments in the United States and in several foreign countries.

REPRESENTATIVE PROJECTS

Districtwide PD&E Services, SW 10th Street Connector Feasibility Study (Sub to C3TS), FDOT District 4: The study focused on providing an efficient movement between the Turnpike, Sawgrass Expressway and I-95, while retaining and integrating the local access and traffic movements. Our traffic engineering effort required us to perform the requisite data collection (traffic counts, determination of major traffic generators, signalized and unsignalized intersections) effort. Services included operational analysis and preparation of a Design Traffic Technical Memorandum. *Client: C3TS, Contact: Project Manager Robert Carballo, PE, (305) 445-2900, Role: Senior Traffic Engineer & Transportation Planner*

SR 25 /US-27 / Okeechobee Rd from E. of NW 116 Way (MP 8.146) to E. of NW 87 Ave (9.340) in Miami-Dade County (sub to BCC Engineering): Reconstruction of SR-25/ US-27/ Okeechobee Road using rigid pavement from MP 8.146 to MP 9.340. Includes design of bridges for grade separation of Okeechobee Rd. over NW 87 Ave., design of left turn lanes flyover bridge from Southbound NW 87 Ave to Eastbound Okeechobee Rd and from Northbound NW 87 Ave to Westbound Okeechobee Rd., construction of a new bridge at NW 106 St over the Miami (C-6) Canal. Metric's role included performing the Traffic Reevaluation report that included forecasting volumes using SERPM travel demand model and performing a Vissim microsimulation analysis of the study area. *Client: BCC Engineering, Inc., Contact: Oscar Oliva (305) 670-2350, Begin/End Dates: August 2016 – Ongoing, Role: Traffic Modeling/Travel Demand Detail*

Ramp Metering Study Services for I-4, FDOT District 5: These services took place at the following Downtown Orlando interchanges: Princeton Street, Ivanhoe Boulevard, SR 50 (Colonial Drive), Amelia Street, South Street, Anderson Avenue, SR 408, Kaley Avenue (Michigan), Orange Blossom Trail and John Young Parkway. The work included data collection, design traffic projections, ramp signal modeling, concept development and evaluation, and stakeholder coordination and System Engineering documentation development or update (ConOps, SEMP, RITSA) to include ramp metering. *Client: FDOT District 5 Contact: Jim Miller / Yvonne Begin/End Dates: June 2016-January 2017 Role: Traffic Modeling/Travel Demand Detail*

I-75 at NW 49th PD&E Study from end of NW 49th St to end of NW 35th St in Marion County, FL, FDOT District 5: PD&E Studies (CAT EX Type II) will evaluate a new interchange in Marion County to provide relief to the adjacent interchanges experiencing congestion and operational deficiencies. An alternate access to I- 75 will also address the projected increase in truck volumes resulting from build-out of the commerce district. The proposed interchange is needed to support the economic viability of the Ocala-Marion County Commerce Park, improve Interstate and regional mobility and accommodate future traffic growth. Tasks include preparation of an MLOU, IJR re-evaluation and NEPA Documentation. *Client: FDOT District 5, Contact: Heather Grubert (386) 943-5540, Begin/End Dates: May 2017 - Ongoing, Role: Traffic Modeling/Travel Demand Detail*

SR-29 from I-75 to Oil Well Rd PD&E Study, FDOT District 1: The study involves the evaluation of widening SR-29 from a two-lane undivided principal arterial to a four-lane divided highway. The study limits span approximately 10 miles, from I-75 to CR-858, Oil Well Rd, in Collier County. South of Immokalee, SR-29 runs adjacent to the former route of the Seaboard Coast Line Rail Rd route. SR-29 within the project limits lies at the heart of critical ecosystems as it divides Big Cypress National Preserve and Florida Panther National Wildlife Refuge. Establishing a credible project need and securing the buy-in from the conservation community are the keystones of this project. The I-75/SR-29 interchange will also be evaluated for traffic and safety. The study also includes 8 bridge structures, including 4 wildlife (panther) crossings. *Client: FDOT District 1, Contact: Patrick Bateman, EI (863) 519-2792, Begin/End Dates: July 2016 – Ongoing, Role: Traffic Modeling/Travel Demand Detail*

U.S. 90 (SR 10) Corridor PD&E Study (Santa Rosa County), FDOT District 3: This Environmental Assessment is primarily to evaluate the potential for increasing the capacity for the east-west travel demands on U.S. 90 in Milton, Florida. The capacity improvements evaluated will consist of, but are not limited to, widening the existing facility, a new corridor, additional bridging of the

SIJONG JO, PhD

Senior Traffic Engineer

Blackwater River, and/or combinations thereof. The Study extends from the intersection of Glover Lane/U.S. 90 to the intersection of SR 87S/U.S. 90, a distance of approximately 14 miles. *Client: FDOT District 3, Contact: Peggy Kelley (850) 415-9517, Begin/End Dates: November 2013 – Ongoing, Role: Traffic Modeling/Travel Demand Detail*

I-395 PD&E Study in Miami-Dade County, FDOT District 6: The PD&E Study entailed the preparation of EIS for a proposal to improve I-395 in Miami-Dade, Florida. The proposed improvement would involve the reconstruction of I-395 from I-95/Midtown Interchange to Biscayne Bay, a distance of 1.2 miles. Improvements to the corridor are considered necessary to provide for the existing and projected traffic demand. Alternatives consideration included elevated reconstruction with ramps at Midtown Interchange; elevated reconstruction with ramps at Miami Avenue; a tunnel design and an open-cut design (depressed expressway). Due to community opposition, MEI held over 150 meetings with the public and stake holders which led to public approval and LDCA. *Client: FDOT District 6, Contact: Vilma Croft, PE (305) 470-5240, Begin/End Dates: June 2006 – July 2010, Role: Traffic Modeling/Travel Demand Detail*

SR 836 (Dolphin Expressway) PD&E Study from NW 17th Avenue Interchange to Midtown Interchange in Miami-Dade County for FDOT District 6 (SIS & FIHS Facility): The project involved the potential realignment, capacity and geometric improvements to SR 836, an elevated expressway that traverses approximately 1.4 miles within the City of Miami. More specific improvements potentially involved the provision of a minimum of six continuous mainline lanes and the provision of parallel collector distributor facilities. The project was developed following the ETDM methodology. The project was screened via the EST by the ETAT members; constant communication with them throughout the duration of the study to ensure a buildable and permitable project at the completion of the study. *Client: FDOT District 6, Contact: Vilma Croft, PE (305) 470-5240, Begin/End Dates: January 2007 – August 2011, Role: Traffic Modeling/Travel Demand Detail*

CR 510 PD&E Study from CR 512 to 58th Avenue, Indian River County, FL, FDOT District 4: PD&E Studies (CAT EX Type II) (5.3 miles) to improve the capacity along CR 510 from CR 512 to 58th Avenue by widening from two to four lanes and implementing a raised median. CR 512 currently serves as the main artery in northern Indian River County connecting I-95 to US 1 and A1A. Tasks include preparation of Design Traffic Technical Memorandum (DTTM), lead the noise data collection, analysis and documentation efforts as well as support preparation of other environmental documents. *Client: FDOT District 4, Contact: Maria Formoso, PE (954) 777-4677, Begin/End Dates: December 2015 – Ongoing, Role: Traffic Engineer*

NW 14th Street Access Improvements to I-395 PD&E Study in Miami-Dade County for FDOT District 6: PD&E Study (1 mile) for the addition of on/off ramps to I-95 and I-395. Study requires a comprehensive PD&E analysis and IJR. The project includes preliminary and final engineering reports and master plans, traffic modeling and technical memorandum and extensive public involvement with the Overtown area. *Client: FDOT District 6, Contact: Vilma Croft, PE (305) 470-5240, Begin/End Dates: April 2001 – September 2005, Role: Senior Traffic Engineer & Transportation Planner*

Kendall Drive Transit Signal Priority Pilot Study, Miami Dade MPO General Planning Consultant, Miami-Dade County: As part of a traffic study to evaluate the impact of bus priority for a pilot program initiated by Miami Dade County MPO; Dr. Jo analyzed the Kendall Drive corridor from SW 137 to SW 127 Avenue using VISSIM. *Client: Miami-Dade MPO, Contact: Jitender Ramchandani, AICP, Miami Dade County MPO, 305-375-1735, Begin/End Dates: 2012-2013, Role: Traffic Modeling/Travel Demand Detail*

Tri-Rail Transit Development Plan-On Board Ridership Survey in Palm Beach, Broward, and Miami-Dade Counties, FL, South Florida Regional Transportation Authority: This project consisted of an on-board travel survey of SFRTA Tri-Rail riders for the purpose of capturing travel patterns, socio-economic characteristics, and customer opinions and preferences. The primary goal of this survey effort was to gather information related to current ridership patterns and identify areas for improvements to support SFRTA's FY 2014-2023 Transit Development Plan (TDP), Major Update. Sijong conducted on-board surveys as well as boardings and lightings. *Client: SFRTA, Contact: Nathalie Yesbeck, SFRTA, 954-788-7957, Begin/End Dates: 2013, Role: Traffic Modeling*

PUBLICATIONS

1. Jo, Sijong, and Ken Courage, "A Graphical Representation of Signal and Stop Sign Control Warrants Combined with Level of Service Estimates," Proceedings of the Fourth International Conference on Microcomputers in Transportation, Baltimore (07/1992)
2. Jo, Sijong, Albert Gan, and Gina Bonyani, "Impacts of Truck-lane Restrictions on Freeway Traffic Operations," Presented at the 82nd Annual Meeting of the Transportation Research Board, Washington, D.C., 2003.
3. Gan, Albert and Sijong Jo, "Operational Performance Models for Freeway Truck-Lane Restrictions," Final Report submitted to the Florida Department of Transportation (04/2003)
4. Jo, Sijong, "Development of Operational Performance Models for Truck Lane Restrictions on Freeway Corridors", Ph.D. Dissertation, Miami, FL (2003)

METRIC ENGINEERING

ROLANDO RAMIREZ, PE

Senior ITS Engineer

TECHNICAL EXPERTISE

ITS/TSM&O Planning & Design

Adaptive Signal Control Technology (ASCT)

Traffic Engineering & Operations

Traffic Modeling

Project Management & QA/QC

YEARS OF EXPERIENCE

20 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL # 60918 (2004)
- Professional Engineer – Puerto Rico # 24853

EDUCATION

- B.S., Civil Engineering, University of Central Florida (1997)

PROFESSIONAL PROFILE

Mr. Ramirez, serves as Metric's Director of ITS/Traffic Operations, has 20 years of diverse engineering experience, including extensive traffic operations and ITS design and planning over the past decade. He currently serves as an ITS Project Manager and has led the design and planning of nearly 80 ITS projects. Prior to working at Metric, Mr. Ramirez worked as a transportation engineer gaining significant experience in traffic demand modeling (macro and micro level), Development of Regional Impact (DRI) studies and Traffic Impact Analyses. Along with working with the private sector, Mr. Ramirez worked closely with public agencies on Long Range Transportation Plans (LRTP), air quality, signal warrants and eminent domain projects. Rolando has been involved in the development and/or modification of ITS specifications and has also written Technical Special Provisions (TSPs) and Modified Special Provisions (MSPs) for various traffic and ITS projects.

REPRESENTATIVE PROJECTS

Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Traffic Signalization Improvement Program, Broward County: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services. Metric led a task as part of a State Energy Program (SEP) grant to develop and implement updated signal timing plans for 110 signals with Naztec controllers on four separate corridors in Broward County, Florida. The work included data collection, establishment of appropriate models, and development of controller settings, implementation and fine-tuning of those settings in the field. Ultimately, travel times were reduced by up to 50% along all of the corridors. *Reference: Michael S. Cleary, PE, 954-357-5838*

Broward County ITS Deployment (Design Build), FDOT District 4: This project consisted of the design and installation of a wireless mobile VoIP subsystem, a Road Weather Information System and Highway Advisory Radio Subsystem within the I-95 corridor in Broward County, as well as the installation of arterial Dynamic Message Sign subsystem at select arterial intersections and the integration of all subsystems into the existing ITS system in Broward County.

ITS Power Distribution System Upgrade, FDOT District 4: This project included the design, construction, and integration for the deployment of the Broward County ITS Power Distribution System Upgrade, which included a power distribution system and back-up power generation system, including all ancillary components within the I-95 limited access right-of-way in Broward County as a single homogeneous system.

ITS Equipment Replacement in Broward County, FDOT District 4: This project involved the field replacement of 17 Dynamic Message Signs (DMS) located along I-95/I-75/I-595 at various locations in Broward County, as well as the replacement of SMART SunGuide RTMC Control Room equipment to accommodate new technology advancements. MEI performed the integration and tested all DMSs as well as existing ITS components at the DMS locations.

Southern Broward ATMS Design-Build Project, FDOT District 4: Design, installation and integration of the subsystems comprising this ATMS project located in Southern Broward County (19.85 miles). The primary system components include a new dedicated communications network, including fiber optic cable and conduits, arterial ITS devices (CCTV cameras, ADMSs, MVDSs, ATTS), connection to existing traffic signal cabinets, transit Passenger Advisory Signs (PAS), and integration with the TMC.

ROLANDO RAMIREZ, PE

Senior ITS Engineer

I-75 On- and Off-System F.R.A.M.E, FDOT District 5: Metric was awarded this project to implement CV technology and Signal Performance Metrics (SPM) in Sumter and Marion Counties. The project will deploy Roadside Units (RSUs) for the use of Signal Phasing and Timing (SPaT), Transit Signal Priority (TSP), and pre-emption applications along I-75 portions of US 441 and US 301 and connecting arterials between I-75 and US 301 via fiber optic cable and/or wirelessly. The project is being designed and implemented using the System Manager Approach to ensure design consistency as well as seamless integration with District 2, Marion County, and City of Ocala. The final products to be submitted includes the complete design for each corridor and all signalized intersections within them, the selection of devices, integrations, testing and verification.

Districtwide TSM&O Studies & Design (2018-2023), FDOT District 5: TSM&O studies, design and preparation of roadway construction plans for proposed miscellaneous improvements within Volusia, Brevard, Orange, Osceola, Seminole, Marion, and Lake Counties. Preparation of a set of contract plans which may include ITS, roadway, signing and pavement markings, signalization, lighting, sidewalk and/or bicycle ways. Other work types include Concept of Operations, Alternative Intersection Study, Hard Shoulder Study, TSM&O Arterial Corridor Studies, Local MPO & TPO Funded Projects, TSM&O Pedestrian & Bicycle Safety Improvements, Transit Signal Priority Studies and Design, Bridge Security Design, Design of DMS, CCTV, Bluetooth, MVDS, and other general TSM&O improvements.

Districtwide TSM&O Studies & Design (sub to Traffic Engineering Data Solutions (TEDS)), FDOT District 5: As a TWO under TEDS' contract, Metric will perform an assessment of the existing ITS and ATMS systems on arterial roadways that are owned, operated and maintained by District 5 or other partnering local agencies. The work will consist of field reviews documenting ITS/ATMS device locations, IP address assignments, fiber optic cables, and more, at all arterial hub sites. Metric also assists with project management and contract maintenance by identifying and attending various project meetings with stakeholders, as well as, assist with the Electronic Document Management System (EDMS). This work aids in the ultimate goal of developing a new Network Architecture design and implementation plan to migrate the existing arterial devices into the FDOT District network.

Districtwide TSM&O: ITS & ATMS Consultant, FDOT District 3: This TWO-based contract provides a diversified range of services, including technical and administrative tasks for the ITS and ATMS programs in District Three. Services are anticipated in all areas of ITS and ATMS, including, but not limited to study, planning, architecture, design, integration, diagnostics, troubleshooting, management, review, evaluation, inspection, engineering, as well as participation in the District's Traffic Incident Management (TIM) Team activities. D3's objective is to provide multilevel priority on-site response to ATMS/traffic signal phasing, timing, coordination, and malfunction issues highlighted by concerned citizens, public officials, and law enforcement personnel.

Districtwide Continuing Services - ITS Consultant, **Florida's Turnpike Enterprise:** This Task Work Order (TWO) based contract is a Continuing Services contract for ITS Design Services covering multiple areas within Florida's Turnpike Enterprise (FTE) system of toll roads. Services include the development of studies, concepts, design memorandums, and/or construction plans in relation to improving the Turnpike's Intelligent Transportation System (ITS), including any other incidental elements, including but not limited to: roadway, roadside, structures, signing and pavement markings, traffic operations, lighting, utility relocation, maintenance of traffic, cost estimates, environmental permits, environmental mitigation plans and other incidental items. *As Senior ITS Engineer, Mr Ramirez was the Deputy PM for the overall project, as well as Engineer of Record on the CFL DMS Replacement TWO.*

ATMS/ATCS D-B RFP Development, FDOT District 4: Metric prepared the Design-Build criteria packages for the design, construction and integration of five (5) ATMS / ATCS projects in Palm Beach County. This includes the development of the Design-Build RFP for the deployment of Fiber Optic Cable, Cameras, MVDS, ADMS, ATCS and Bluetooth devices. This included full RFP package development from Advertisement, RFP, MTRs, attachments, references, coordination with many FDOT departments, Utility Coordination and other supporting documentation. Metric also assisted with Bid questions, Addendums, ATCs, etc. Project include:

1. SIS NHS Connector 4 DMS Signs at 45th St and W. Blue Heron Blvd (433301-1-52-01)
2. ASCT on Northlake Blvd from Military Trail to Federal Highway (432883-1-52-01)
3. ATMS for Three Corridors at SR-817, SR-818, & SR-7 (431590-1-52-01)
4. ADMS & Supporting Data Collection Devices along SR-80/Southern Blvd from Royal Palm Beach to Dixie Hwy (431591-1-52-01)
5. ASCT on Okeechobee Blvd from Tamarind Ave to Flagler Dr. (433947-1-52-01)

SR 70 Adaptive Signal Control Technology (ASCT), FDOT District 1: This project involved generating plans and an RTVM for the inclusion of Adaptive Signal Control Technology for twenty (20) intersections on ST 70 from US 41 (western limit) to Lakewood Ranch Blvd (eastern limit) in Manatee County. This project utilized existing fiber communications network to connect the signal system to the RTMC for real-time monitoring to provide Active Arterial Management capabilities for day to day operations, as well as planned events and incidents. This was a 9.2-mile segment completely within the urbanized boundary serving an AADT of up to 58,000 vpd.

US 27 Corridor Adaptive Signal Control Technology (ASCT), FDOT District 1: This project included the development of a Concept of Operations (CONOPS), System Requirements, Verification Plan and Validation Plan for an upcoming design-build project (FPID: 43845-1-52-01) that will install an Adaptive Signal Control Technology (ASCT) System at 21 intersections along the US 27 corridor in Polk County.

Ron DeSantis, Governor

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RAMIREZ, ROLANDO

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RENATA LEACH, PE

Senior ITS Engineer

TECHNICAL EXPERTISE

ITS Design, Operations, Integration, & Inspection

Traffic Operations Design

Tolling and Communication Systems

YEARS OF EXPERIENCE

12 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #78401 (2015)

EDUCATION

- B.S., Electrical Engineering, University of Central Florida (2006)

PROFESSIONAL BIO

Mrs. Leach joined Metric Engineering after completing her Electrical Engineering degree. She serves as an ITS Project Engineer & Project Manager and has worked on dozens of influential traffic and ITS projects, such as the District 4 Transportation Management System & Operations (TSM&O) Program and Statewide Active Arterial Management (AAM) projects, as well as the I-395 ITS project for District 6.

REPRESENTATIVE PROJECTS

Project Engineer: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Project Engineer: Traffic Signalization Improvement Program, Broward County: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services. Metric led a task as part of a State Energy Program (SEP) grant to develop and implement updated signal timing plans for 110 signals with Naztec controllers on four separate corridors in Broward County, Florida. The work included data collection, establishment of appropriate models, and development of controller settings, implementation and fine-tuning of those settings in the field. Ultimately, travel times were reduced by up to 50% along all of the corridors. *Reference: Michael S. Cleary, PE, 954-357-5838*

Signal Enhancement Conceptual Plan, Broward County: This task included conceptual planning over five years to provide a framework to effectively move the County's SEI program forward utilizing a cost-effective method that maximized the use of existing infrastructure and equipment. It is anticipated that these planning efforts will be used to develop a series of projects that will evolve the existing signal systems and will identify immediate needs. The planning efforts were consistent with the NITSA, the State of Florida ITS Architecture, the District Four RITSA, and the Florida ITS Strategic Plan (Operations Perspective). This work order involved: Data and Information Collection, Identifying County and Transportation Needs to Improve the Traffic System, Technology Assessment and Evaluation, Feasible Alternative Analysis and Recommendations, and Final Reports and Presentations.

ITS Engineer: I-75 On- and Off-System F.R.A.M.E, FDOT District 5: Metric was awarded this project to implement CV technology and Signal Performance Metrics (SPM) in Sumter and Marion Counties. The project will deploy Roadside Units (RSUs) for the use of Signal Phasing and Timing (SPaT), Transit Signal Priority (TSP), and pre-emption applications along I-75 portions of US 441 and US 301 and connecting arterials between I-75 and US 301 via fiber optic cable and/or wirelessly. The project is being designed and implemented using the System Manager Approach to ensure design consistency as well as seamless integration with District 2, Marion County, and City of Ocala. The final products to be submitted includes the complete design for each corridor and all signalized intersections within them, the selection of devices, integrations, testing and verification.

Project Engineer: CEI Services for SunTrax Test Facility, **Florida's Turnpike Enterprise:** This $42M project involves the construction of a 2.25-mile oval track designed to support high speed testing of emerging toll technologies, ITS, and automated/connected vehicles. The track consists of a 5 lane straightaway typical section with paved shoulders and 2 lane super-elevated oval curve typical sections with paved shoulders. ITS elements include more than 38,500 linear feet of fiber optic cable, 12 CCTV cameras, 4 Non-Accessible Toll Gantries with 66-inch drilled shaft foundations and equipment buildings; as well as, an 11,784 square foot SunTrax Test Facility Operations Building and a 9,074 square foot Storage Building. *Renata serves as the Electrical Engineer on this project on an as-needed basis; and performed an extensive ITS plans review.*

Project Manager: Districtwide Traffic Operations ITS Consultant – Three Consecutive Contracts, FDOT District 1: This project includes a range of study, planning, design, integration, diagnostic, operations, management, review, evaluation and engineering

RENATA LEACH, PE

Senior ITS Engineer

services; including technical and administrative tasks for Intelligent Transportation System projects for District 1. Metric is to support all facets of the Traffic Operations Office ITS Program, including ITS planning, ITS architecture, ITS design, ITS integration, ITS diagnostics and ITS Operations, including facilitating the Traffic Incident Management (TIM) Team activities and TIM initiatives.

Project Manager: Districtwide Continuing Services ITS Consultant – Two Consecutive Contracts, **Florida's Turnpike** Enterprise: This contract is a Continuing Services contract for ITS Design Services covering multiple areas within FTE system of toll roads. Services include the development of studies, concepts, design memorandums, and/or construction plans in relation to improving the Turnpike's Intelligent Transportation System (ITS), including any other incidental elements, including but not limited to: roadway, roadside, structures, signing and pavement markings, traffic operations, lighting, utility relocation, maintenance of traffic, cost estimates, environmental permits, environmental mitigation plans and other incidental items.

Project Engineer: Districtwide TSM&O: ITS & ATMS Consultant, FDOT District 3: This is a Task Work Order (TWO) contract to provide a diversified range of services, including technical and administrative tasks for the ITS & ATMS programs in District Three. Services include all areas of ITS and ATMS, including, but not limited to study, planning, architecture, design, integration, diagnostics, troubleshooting, management, review, evaluation, inspection, engineering, operations, as well as participation in the District's Traffic Incident Management (TIM) Team activities. D3's objective is to provide multilevel priority on-site response to ATMS/traffic signal phasing, timing, coordination, and malfunction issues highlighted by concerned citizens, public officials, and law enforcement personnel.

Project Engineer: Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2001 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

Project Engineer: Consultant Services for Transportation Management Center Area-Wide – Three Consecutive Contracts Prime/Sub, FDOT District 2: Services to provide a wide range of operational, engineering and planning services to include technical, management and administrative tasks for District 2 ITS Program and Traffic Management Center. Traffic Incident Management (TIM) Team support includes bi-monthly meetings, newsletters, etc. Under this work, Metric performed the retiming services on SR A1A, and clearance timing calculations for different signalized intersections in the Jacksonville and Palatka areas.

Project Engineer: Districtwide Traffic Operations TSM&O Support Services, FDOT District 4: This project included support services for the TSM&O program within the Florida Department of Transportation to improve the efficiency of existing transportation network through performance monitoring, active arterial management, Integrating Freeway Management with Arterial Management and Incident Management on Arterials and Freeways. The project included the deployment of an Intelligent Transportation System (ITS) along the District's interstates to monitor and improve incident clearance time and travel time and the implementation of the Advanced Transportation Monitoring System (ATMS). Both systems utilize SunGuide software to manage these devices and traffic signals.

Statewide Needs Plan (Statewide, FL): This Plan addressed the costs and requirements of Active Arterial Management (AAM) throughout the State of Florida, broken up by district. Metric coordinated with the State and appropriate maintaining agencies to identify the needs of each Agency and provided high level recommendations to support the implementation of the Plan. Regional metropolitan areas were focal points and areas of emphasis, although recommendations were also provided for rural and suburban roadways.

Active Arterial Management TMC Ops (Palm Beach and Broward Counties): The FDOT District 4 TSM&O "Living Lab" within Palm Beach County is the leading edge of Active Arterial Management (AAM). Beginning in October 2012 with a deployment of CCTVs and travel time collection devices over a fiber optic infrastructure, the Living Lab allowed operators and timing engineers to cohesively identify and rectify the causes of congestion (both recurring and non) in real time. In addition, to facilitate the operational efficiency of the project road limits, operators supplement maintenance efforts by aiding County technicians in detecting malfunctions within both the ITS and signal systems ranging from traffic signals in flash to disruptions in communications. The interagency coordination associated with this initiative has been vital to the success of the nation's first true Active Arterial Management Program. *This project was awarded the Davis (Prudential) Productivity Award for its contribution in providing a cost savings to the taxpayers of Florida and increased efficiency for Palm Beach's roadways.*

Project Engineer / ITS Design Lead: Southern Broward Advanced Traffic Management System (ATMS), FDOT District 4: Design, installation and integration of the subsystems comprising this ATMS project located in Southern Broward County. The primary system components include a new dedicated communications network, including fiber optic cable and conduits, arterial ITS devices (CCTV cameras, ADMSs, MVDSs, ATTS), connection to existing traffic signal cabinets, transit Passenger Advisory Signs (PAS), and integration with the Transportation Management Center (TMC).

Ron DeSantis, Governor

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LEACH, RENATA

3491 WHITNER WAY
SANFORD FL 32773

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EXPIRATION DATE: FEBRUARY 28, 2021

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County Commissioners

JESSICA KNOX, PE, PTOE

ITS/Traffic Engineer

TECHNICAL EXPERTISE

Project Management
QA/QC
S&PM
Traffic Operations
Traffic Engineering & Studies
ITS/TSM&O Studies & Design
TMC Operations

YEARS OF EXPERIENCE

9 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #80363 (2016)
- Professional Traffic Operations Engineer – FL #4353 (2017)

CERTIFICATIONS

- IMSA Fiber Optic Technician Levels I & II
- FDOT Specifications Package Preparation

SOFTWARE SKILLS

- MicroStation
- Microsoft Office
- SunGuide
- Geopak
- GuideSIGN
- Primavera

EDUCATION

- B.S., Civil Engineering University of South Florida (2010)
- M.S., Industrial Engineering (specializing in Engineering Management), University of Florida (2015)

PROFESSIONAL PROFILE

Ms. Knox (formerly Renfrow) has served in numerous Traffic Operations, ITS, and TSM&O roles, diversifying her experience within the industry. She started as an RTMC Operator; monitoring and analyzing real time traffic data. She performed as an in-house Turnpike Traffic Services Specialist, reviewing and evaluating traffic plans and studies. She also has experience as an ITS Engineer, including the design of freeway and arterial networks, Advanced Traffic Management Systems (ATMS), network integration and emergency pre-emption. Mrs. Knox also served as an in-house consultant for District 5 performing plans reviews, systems engineering documentation preparation, and assisted the client with daily operations. Mrs. Knox moved to Jacksonville in June of 2016, where she has since been working on the District 2 TMC Consultant Contract. She is responsible for plans reviews, assisting with minor ITS design projects constructed through the ITS Maintenance Contract, reviewing TSM&O policy and procedure documents developed by Central Office, and assisting the client with any tasks necessary. Besides the TMC Consultant Contract, she is also currently performing studies for the City of Jacksonville Traffic Engineering On-Call Contract and if the S&PM engineer-of-record for Turnpike's AET Phase VIII project and District 5's I-4 Widening project. This diverse experience has provided Mrs. Knox with knowledge and understanding of many facets of the Traffic Operations Program for several FDOT Districts and Statewide efforts.

REPRESENTATIVE PROJECTS

Project Engineer: Districtwide TSM&O: ITS & ATMS Consultant, FDOT District 3: This is a Task Work Order (TWO) contract to provide a diversified range of services, including technical and administrative tasks for the ITS and ATMS programs in District 3. Services are anticipated in all areas of ITS and ATMS, including, but not limited to study, planning, architecture, design, integration, diagnostics, troubleshooting, management, review, evaluation, inspection, engineering, as well as participation in the District's Traffic Incident Management (TIM) Team activities. District 3's objective is to provide multilevel priority on-site response to ATMS/traffic signal phasing, timing, coordination, and malfunction issues highlighted by concerned citizens, public officials, and law enforcement personnel. Task work orders have included ADMS design, I-10 OTDR Testing, Small Pushbutton Tasks, and the development of an ITS Master Plan.

Engineer of Record: Connected Vehicle Signal Phasing and Timing (SPaT) Deployment **"Gainesville Trapezium" Project (sub to Siemens), FDOT Central Office**: Better known as the Gainesville Trapezium project, will furnish and install roadside units (RSUs) at 27 intersections along four major corridors forming a trapezium around the University of Florida. The RSUs will utilize Dedicated Short-Range Communications (DSRC) for communication. The following applications will be available with the deployment of this project: SPaT/MAP message base applications, forward collision warnings, emergency brake light warning, do not pass warning, work zone warnings, curve speed warnings, and a few value added applications including emergency vehicle preemption and transit signal priority (TSP). As the EOR, Metric is responsible for creating the implementation plans for all project traffic signals showing conduit runs to/from RSUs and the traffic signal cabinet, RSU mounting heights, mast arm locations, cabinet devices, new cable and conduit runs, cabinet power and communication connections, integration with City's central system, etc. We are also responsible for applying for any permits required on the project including the FCC Licensing permits for each RSU.

Project Engineer: Road Safety Audit (RSA), Safety Studies, and Operational Studies Contract, FDOT District 2 (Jacksonville): The project includes conducting Road Safety Audits (RSA) and their corresponding follow-up safety studies as well as operational studies. The RSAs, analysis and recommendations produced are then used in the development of safety recommendations targeting the emphasis areas of the Florida Strategic Highway Safety Plan (FL-SHSP). Additional tasks include resolving complaints or requests received from concerned citizens, review fatal crashes, monitoring safety in specific work-zones, update and maintain the Department's Skid Hazard Reporting System, develop and utilize GIS based tools to identify locations with targeted crash patterns, perform Highway Safety Manual (HSM) analysis, and public involvement.

JESSICA KNOX, PE, PTOE

ITS/Traffic Engineer

Project Engineer: Traffic Engineering Services – Traffic Studies, City of Jacksonville: This contract is to provide various traffic engineering services which include: Crash Analysis with Mitigation Plans; Traffic Safety Studies with Mitigation Plans; Traffic Calming Plans; Traffic Impact Studies; Traffic Control Warrant Analysis; Access Management Plans; Traffic Circulation Plans and Traffic Routing Plans; Travel Time and Delay Studies; Review/Development/Revision of Engineering and Planning Documents; Evaluating and/or Conducting Traffic Operational/Safety Studies; Intersection Designs; and Public Information Meetings. Metric will develop safety and traffic operation studies for the installation of new traffic signals (signal warrant studies), isolation intersection analyses, roadway studies (speed zone, no-passing zones), highway lighting justification, as well as traffic calming analyses. This work also includes intensive data collection efforts, engineering and crash analyses, field reviews, and Benefit/Cost Analyses.

Project Engineer: Consultant Services for Transportation Management Center Area-Wide – Three Consecutive Contracts Prime/Sub, FDOT District 2: Services to provide a wide range of operational, engineering and planning services to include technical, management and administrative tasks for District 2 ITS Program and Traffic Management Center. Traffic Incident Management (TIM) Team support includes bi-monthly meetings, newsletters, etc. *As a Project Engineer, Ms. Knox is responsible for assisting with daily tasks as an extension of District 2 staff. Tasks consist of plans reviews, technical memorandums for projects, white papers, engineering analysis and management of various tasks.*

Project Engineer: Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2001 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts. *For this project, Ms. Knox was the S&PM Engineer for numerous TWOs involving studies and signal plans, as well as assisting with QC.*

Project Engineer: Districtwide Traffic Operations ITS Consultant – Three Consecutive Contracts, FDOT District 1: This project includes a range of study, planning, design, integration, diagnostic, operations, management, review, evaluation and engineering services; including technical and administrative tasks for Intelligent Transportation System projects for District 1. Metric is to support all facets of the Traffic Operations Office ITS Program, including ITS planning, ITS architecture, ITS design, ITS integration, ITS diagnostics and ITS Operations, including facilitating the Traffic Incident Management (TIM) Team activities and TIM initiatives.

Project Engineer: Districtwide Continuing Services ITS Consultant – Two Consecutive Contracts, **Florida's Turnpike** Enterprise: This contract is a Continuing Services contract for ITS Design Services covering multiple areas within FTE system of toll roads. Services include the development of studies, concepts, design memorandums, and/or construction plans in relation to improving the Turnpike's Intelligent Transportation System (ITS), including any other incidental elements, including but not limited to: roadway, roadside, structures, signing and pavement markings, traffic operations, lighting, utility relocation, maintenance of traffic, cost estimates, environmental permits, environmental mitigation plans and other incidental items. *For this contract, Ms. Knox is the project engineer for several TWOs, which have maintained a key focus of S&PM, and systems engineering tasks thus far.*

Project Engineer / QC: I-75 On- and Off-**System F.R.A.M.E. (Florida's Regional Advanced Mobility Elements)**, FDOT District 5: Metric represents the FDOT District 5 ITS as the Systems Manager for this I-75 F.R.A.M.E. project which assists in the advancement of the Multimodal Integrated Corridor Management (MMICM) plan. As the Systems Manager, Metric is responsible for coordinating, testing and providing documentation on the various technologies to include Roadside Units (RSUs), vehicular On-board Units (OBUs) as well as emulated OBUs (mobile devices and/or tablets) to ensure device interoperability. This project is in line with the USDOT goals and will contribute to increased safety, reliability and mobility needs using advanced CV technologies. Metric staff is responsible for designing and integrating these devices to multiple signal controllers with the goal of verifying the various CV-related applications: Signal Phase & Timing (SPaT), Automated Traffic Signal Performance Measures (ATSPM), MAP messages, Traveler Information Messages (TIM), Basic Safety Messages (BSM), Emergency Vehicle Protocol (EVP), Transit Signal Priority (TSP) and others related to pedestrian safety. Metric staff has conducted extensive testing in both the lab and field environments with equipment provided by several CV vendors. As a result of the testing, reports were generated to guide the System Manager in their decision-making process for the development of the CV specifications and eventual decision-making on the F.R.A.M.E., SR 434, and PedSafe projects and any other future CV deployments. Metric is also responsible for configuring, integrating and testing all CV devices into the FDOT ITS network. *Ms. Knox is responsible for systems engineering documentation assistance and QC.*

Consulting Engineering Services - ITS Master Plan, FDOT District 5: Professional services for developing an overarching ITS Master Plan for the region, creating a consensus on what items are to be integrated and what standards needs to be met (security, maintenance, staffing, etc.). This includes an assessment of what is currently in place, what is planned, and where there is vehicular delay. The Plan also covers high level goals the region should be working towards and the types of investment that could work toward these goals, as well as data management and connected vehicle roles and responsibilities. *Role: Project Engineer.*

Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

KNOX, JESSICA ASHLEY

5120 SANTA CRUZ LN
JACKSONVILLE FL 32210

LICENSE NUMBER: PE80363

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

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9/23/2019

Transportation Professional Certification Board, Inc.

certifies that

Jessica Ashley Renfrow

has met all of the requirements established by the Certification Board to use the title of

Professional Traffic Operations Engineer

unless withdrawn by the Certification Board and subject to the provisions for renewal.
Certificate number 4353 issued in Washington, DC, USA

11/20/17

Michael K. Park
Chair

PTOE
PROFESSIONAL
TRAFFIC
OPERATIONS
ENGINEER
TRANSPORTATION PROFESSIONAL CERTIFICATION BOARD INC.

Jeffrey F. Paniati
Executive Director

BidSync

Broward County Board of County Commissioners

PNC2119168P1

Fiber Optics Program

Jessica A. Renfrow

is hereby certified as a

Fiber Optics Design Technician Level II

on 12/13/2017

Valid Thru 12/13/2020

Douglas M. Aiken - Executive Director

Fiber Optics Program
Jessica A. Renfrow
Is Hereby Certified as a
Fiber Optics Design Technician Level II
By completing all requirements and examination.

Cert #	Date	Good Thru
FOD_103662	12/13/2017	12/13/2020

9/23/2019

This certifies that

Jessica A. Renfrow

has successfully completed the

Specifications Package Preparation Training for Consultants

DOT Course Code: PE-05-0004

Presented on April 29 & 30, 2015

Frances Thomas

Instructor: Frances Thomas
FBPE Provider Number: CEP 0004094

BidSync

Broward County Board of

PNC2119168P1

METRIC ENGINEERING

TECHNICAL EXPERTISE

Traffic Operations Design
Traffic Studies & Analyses
Signal Retiming Analysis
Data Collection

YEARS OF EXPERIENCE

14 Years

CERTIFICATIONS

- IMSA Traffic Signal Field Technician Level II
- FDOT Intermediate Temporary Traffic Control (TCC)

SOFTWARE SKILLS

- Microstation
- ArcGIS
- AutoTURN
- GuidSIGN

EDUCATION

- A.S., Computer Animation, Full Sail University (2003)

PROFESSIONAL PROFILE

Mr. Battle has over 14 years of experience (all of which are with Metric) and currently serves as the Traffic Operations Section Leader, where he has completed hundreds of traffic studies and analyses. Additionally, he served as the Data Collection Manager for 12 years (before his promotion to Traffic Operations Section Leader), overseeing the data collection team and all data collection activities. During that time, he oversaw the data collection on every Metric project, amounting to over 9,600 locations Statewide. Mr. Battle is a task lead on many traffic studies contracts and provides Traffic Operations design support to all of Metric's design projects throughout the State. He is experienced in all aspects of arterial retiming and the data collection needed to create and implement signal timing plans.

REPRESENTATIVE PROJECTS

Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Traffic Signalization Improvement Program, Broward County: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services. *Reference: Michael S. Cleary, PE, 954-357-5838*

Signal Enhancement Conceptual Plan, Broward County: This task included conceptual planning over five years to provide a framework to effectively move the County's SEI program forward utilizing a cost-effective method that maximized the use of existing infrastructure and equipment. It is anticipated that these planning efforts will be used to develop a series of projects that will evolve the existing signal systems and will identify immediate needs. The planning efforts were consistent with the NITSA, the State of Florida ITS Architecture, the District Four RITSA, and the Florida ITS Strategic Plan (Operations Perspective). This work order involved: Data and Information Collection, Identifying County and Transportation Needs to Improve the Traffic System, Technology Assessment and Evaluation, Feasible Alternative Analysis and Recommendations, and Final Reports and Presentations.

Signal Timing Plans, Broward County: Metric led a task as part of a State Energy Program (SEP) grant to develop and implement updated signal timing plans for 110 signals with Naztec controllers on four separate corridors in Broward County, Florida. The work included data collection, establishment of appropriate models, and development of controller settings, implementation and fine-tuning of those settings in the field. Ultimately, travel times were reduced by up to 50% along all of the corridors.

Districtwide Traffic Operations Design Services, FDOT District 4: This contract consisted of miscellaneous traffic operations and engineering services including revisions/updates of previously completed plans, minor roadway design for highway improvements, minor structures, signalization, highway lighting overhead signing, pavement markings and drainage, right-of-way maps and document preparation.

Traffic Operations Minor Design Consultant, FDOT District 1: This TWO-based contract includes several minor design projects in various District 1 counties. The scope of the work orders includes Sidewalks (Safe Routes To School Program), Turn Lanes, Signal Upgrades, and Lighted Overhead Signing structures at various interchanges along Interstate 75 within the L/A Right-of-Way. Metric has coordinated closely with both FDOT staff and local maintaining agency staff regarding design preferences and is currently performing post design services on the projects that are now under construction.

Road Safety Audit (RSA) & Safety Studies & Operational Studies Contract, FDOT District 2: The contract included conducting Road Safety Audits (RSA) and their corresponding follow-up safety studies as well as operational studies. The RSAs, analysis and recommendations produced are then used in the development of safety recommendations targeting the emphasis areas of the Florida

JOHN BATTLE

Senior Traffic Designer

Strategic Highway Safety Plan (FL-SHSP). Additional task included resolving complaints or requests received from concerned citizens, reviewing fatal crashes, monitoring safety in specific work-zones, updating and maintaining the Department's Skid Hazard Reporting System, developing and utilizing GIS based tools to identify locations with targeted crash patterns, performed Highway Safety Manual (HSM) analysis, and public involvement.

Districtwide Miscellaneous Safety Design, FDOT District 2: Metric is responsible for the design and preparation of a complete set of construction contract documents (specifications packages, etc.) and any incidental engineering services, as necessary, for improvements to various roadway transportation facilities. Services included roadway design (typical sections, plan/profiles, cross slopes, access management, etc.), Traffic Control Plan (TCP), drainage design, utility coordination, environmental/permitting, miscellaneous structures, S&PM, signalization, lighting, survey/SUE, and geotechnical.

Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2001 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

Transit Signal Priority (TSP) Study, FDOT District 5: District Five Traffic Operations office retained Metric to perform the study, design, and implementation of a TSP system for LYNX, a bus system run by the Central Florida Regional Transportation Authority. The TSP project was divided into three phases. During Phase 1, the project concentrated along bus routes that have a direct connection to the SunRail stations (DeBary Station to Sand Lake Road Station). Phase 2 and Phase 3 focused on additional bus routes considered secondary SunRail station feeders. As part of the study portion of the TSP project, bus routes were identified using the buses AVL/APC data, meetings with all stakeholders were held, priority conditions and monitoring parameters were established, field data was collected, system requirements were identified, and a Concept of Operations (ConOps) was produced.

Community Traffic Safety Program (CTSP) – Three Contracts, FDOT District 5: Task Work Order based Districtwide contract comprised of miscellaneous engineering services required to conduct studies and/or to design and prepare a set of contract plans which may include roadway, signing and pavement markings, signalization, lighting, sidewalk and/or bicycle ways along the transportation corridor that includes State highways, County streets, and City streets.

Traffic Signal Retiming (2018 – 2020), Metroplan Orlando: As a prime consultant, Metric provides professional services for conducting corridor retiming on an as needed basis issued by task work orders. Overall, Metric develops traffic signal timing plans for implementation to improve the efficiency and safety along with corridors under MetroPlan's jurisdiction. Arterial retiming efforts includes but is not limited to: system operation review, traffic signal equipment inventory, analysis/implementation/documentation, data collection (4-Hr & 8-Hr Turning Movement Counts with pedestrians, bicycles, and trucks; 24-Hr Traffic Counts for Intersections; 7-Day Continuous Traffic Counts in both directions; and more) as well as public presentations and other miscellaneous tasks.

Traffic Engineering Services – Traffic Studies, City of Jacksonville: This contract is to provide various traffic engineering services which include: Crash Analysis with Mitigation Plans; Traffic Safety Studies with Mitigation Plans; Traffic Calming Plans; Traffic Impact Studies; Traffic Control Warrant Analysis; Access Management Plans; Traffic Circulation Plans and Traffic Routing Plans; Travel Time and Delay Studies; Review/Development/Revision of Engineering and Planning Documents; Evaluating and/or Conducting Traffic Operational/Safety Studies; Intersection Designs; and Public Information Meetings. Metric will develop safety and traffic operation studies for the installation of new traffic signals (signal warrant studies), isolation intersection analyses, roadway studies (speed zone, no-passing zones), highway lighting justification, as well as traffic calming analyses. This work also includes intensive data collection efforts, engineering and crash analyses, field reviews, and Benefit/Cost Analyses.

Continuing Professional Traffic Engineering Services (2018-2019), Orange County: Metric provides miscellaneous professional traffic engineering services on this TWO-based continuing services contract to support the safe and efficient movement of all users of the County's transportation network. All work performed under this contract complies with the latest Federal Highway Administration MUTCD and the most recent edition of the FDOT Design Standards, TEM, Speed Zoning Manual, and MUTS guidelines. Tasks will include but are not limited to: Data Collection (Turning Movement Counts & Machine Traffic Counts); Traffic Studies (Spot Speed Studies, Intersection Delay Studies, Origin & Destination Studies, Traffic Signal Warrant Studies, School Safety Studies, Pedestrian & Bicycle Safety Studies, RSA) Studies, Miscellaneous Traffic Operational & Safety Studies, Roundabout Evaluations, and more); Traffic Signal, ITS, S&PM and Maintenance of Traffic Design Services; Studies & Design Review Support; Traffic Control/ITS Inventory Support; Minor Intersection Design; Signal/Corridor Retiming; Guardral Analysis & Design; and, Public Involvement Services.

CERTIFIED PUBLIC SAFETY TECHNICIAN
IMSA

Traffic Signal Program

John V. Battle, Jr.

is hereby certified as a

Traffic Signal Technician Level I

on 7/2/2017

Valid Thru 7/2/2020

Douglas M. Aiken - Executive Director

Traffic Signal Program
John V. Battle, Jr.
Is Hereby Certified as a
Traffic Signal Technician Level I
By completing all requirements and examination.

Cert #	Date	Good Thru
AA_118314	7/2/2017	7/2/2020

Traffic Signal Program
John V. Battle, Jr.
Is Hereby Certified as a
Traffic Signal Field Technician Level II
By completing all requirements and examination.

Cert #	Date	Good Thru
BE_118314	2/4/2018	2/4/2021

Broward County Board of County Commissioners

BidSync

PNC2119168P1

Broward County Board of
County Commissioners

Certificate of Completion

John V. Battle Jr.

Has Completed a Florida Department of Transportation Approved Temporary Traffic Control (TTC) Intermediate Course.

04/21/2021	15	Bhushan Sukhram	28005
Date Expires	FDOT Provider #	Instructor	Certificate #

United Safety Council
1505 E. Colonial Drive
Orlando, FL 32803
unitedsafetycouncil.com
gvictor@floridasafety.org

For more information about Temporary Traffic Control (TTC) or to verify this certificate

www.motadmin.com

BidSync

9/23/2019

JUSTIN SCHICK, PE

Lighting/Signal Engineer

TECHNICAL EXPERTISE

ITS Design
Lighting Design
Traffic Operations Design
AutoCAD

YEARS OF EXPERIENCE

5 Years

PROFESSIONAL REGISTRATION

- Professional Engineer – FL #86569 (2018)

SOFTWARE SKILLS

Matlab
AutoCAD
MicroStation
C++ Programming
HTML Coding

EDUCATION

B.S., Civil Engineering, Ohio State University (2013)

PROFESSIONAL PROFILE

Mr. Schick serves as an ITS/Traffic Operations designer where, primarily, his focus is on plans preparations and lighting design for numerous projects over the last five years. Day-to-day responsibilities include photometric analyses, lighting design, voltage drops, plans preparation, cost estimates and quantities. He also assists with retiming and traffic studies tasks. He has experience measuring approach grades in the field and experience using Synchro to develop signal retiming calculations.

REPRESENTATIVE PROJECTS

Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Traffic Signalization Improvement Program, Broward County: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services. Metric led a task as part of a State Energy Program (SEP) grant to develop and implement updated signal timing plans for 110 signals with Naztec controllers on four separate corridors in Broward County, Florida. The work included data collection, establishment of appropriate models, and development of controller settings, implementation and fine-tuning of those settings in the field. Ultimately, travel times were reduced by up to 50% along all of the corridors. *Reference: Michael S. Cleary, PE, 954-357-5838*

ITS System Manager Support Services (Sub to Atkins North America), FDOT District 2: As a subconsultant to Atkins under their General Engineering Consultant (GEC) contract, Metric assists with this TWO to provide general management and administration as the ITS System Manager where the overall goal is to improve traffic conditions. Under this work, Metric performed the retiming services on SR A1A, and clearance timing calculations for different signalized intersections in the Jacksonville and Palatka areas.

Traffic Engineering Services – Traffic Studies, City of Jacksonville: This contract includes various traffic engineering services which include: Crash Analysis with Mitigation Plans; Traffic Safety Studies with Mitigation Plans; Traffic Calming Plans; Traffic Impact Studies; Traffic Control Warrant Analysis; Access Management Plans; Traffic Circulation Plans and Traffic Routing Plans; Travel Time and Delay Studies; the review, development, and revision of engineering and planning documents; evaluating and/or conducting traffic operational/safety studies; intersection designs; and public information meetings. Metric will develop traffic studies and the reports associated with them for traffic signal warrant studies, isolation intersection analyses, roadway studies (speed zone, no-passing zones, and highway lighting justification) as well as traffic calming warrant analyses. This work also includes intensive data collection efforts, engineering and crash analyses, field reviews, and Benefit/Cost Analysis.

Road Safety Audit (RSA) & Safety/Operational Studies Contract, Florida Department of Transportation, FDOT District 2: The project includes conducting Road Safety Audits (RSA) and their corresponding follow-up safety studies as well as operational studies. The RSAs, analysis and recommendations produced are then used in the development of safety recommendations targeting the emphasis areas of the Florida Strategic Highway Safety Plan (FL-SHSP). Additional task include resolving complaints or requests received from concerned citizens, review fatal crashes, monitoring safety in specific work-zones, update and maintain the Department's Skid Hazard Reporting System, develop and utilize GIS based tools to identify locations with targeted crash patterns, perform Highway Safety Manual (HSM) analysis, and public involvement.

Safety Study & Retiming Services for Gateway Parkway & Town Center Parkway, FDOT District 2: As a task work order (TWO) under Metric's RSA & Safety/Operational Studies contract, Metric performed signal retiming and safety study services for non-system

JUSTIN SCHICK, PE
Lighting/Signal Engineer

corridors Gateway Parkway and St. Johns Town Center Parkway in Duval County, which included a total of 17 signalized intersections. Services also included data collection efforts (intersection condition diagrams, site condition diagrams, machine counts, TMCs, travel time and delay studies, and Synchro modeling) as well as producing a Safety Benefit/Cost Ratio.

DW Miscellaneous Safety Design, FDOT District 2: Metric is responsible for the design and preparation of a complete set of construction contract documents (specifications packages, etc.) and any incidental engineering services, as necessary, for improvements to various roadway transportation facilities. Services included roadway design (typical sections, plan/profiles, cross slopes, access management, etc.), Traffic Control Plan (TCP), drainage design, utility coordination, environmental/permitting, miscellaneous structures, S&PM, signalization, lighting, survey/SUE, and geotechnical.

Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2001 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

DW TSM&O: ITS & ATMS Consultant, FDOT District 3: This is TWO contract to provide a diversified range of services, including technical and administrative tasks for the ITS and ATMS programs in District Three. Services are anticipated in all areas of ITS and ATMS, including, but not limited to study, planning, architecture, design, integration, diagnostics, troubleshooting, management, review, evaluation, inspection, engineering, as well as participation in the District's Traffic Incident Management (TIM) Team activities. D3's objective is to provide multilevel priority on-site response to ATMS/traffic signal phasing, timing, coordination, and malfunction issues highlighted by concerned citizens, public officials, and law enforcement personnel.

Southern Broward Advanced Traffic Management System (ATMS) (Design-Build), FDOT District 4: Design, installation and integration of the subsystems comprising this ATMS project located in Southern Broward County. The primary system components include a new dedicated communications network, including fiber optic cable and conduits, arterial ITS devices (CCTV cameras, ADMSs, MVDSs, ATTS), connection to existing traffic signal cabinets, transit Passenger Advisory Signs (PAS), and integration with the Transportation Management Center (TMC).

Mainline Express Lane Direct-Connect to and from I-**4 (Subconsultant to RS&H), Florida's Turnpike Enterprise:** This is a task work order under a RS&H FTE design contract for D-B RFP development services for Direct-Connect Ramps to and from I-4 and Turnpike Mainline and for the implementation of Express Lanes on Turnpike Mainline from SR 528 to SR 400 (I-4) located in Orange County. Metric provided RFP language, concept plans, and ERCAR report for: ITS, S&PM, lighting, signals and utilities.

SR 821 (HEFT) Widening from South of SW 104th St. (Killian Parkway) to North of SW 72nd St. (Sunset Drive), (Subconsultant services to BCC Engineering), **Florida's Turnpike Enterprise:** Design, widening and reconstruction of SR 821, including three (3) general purpose (GP) lanes and two (2) express lanes in each direction in addition to auxiliary lanes as required, operational improvements, corridor and pedestrian improvements. Other major work elements include structural design, drainage, permit modifications, traffic control, traffic signals, signing and pavement markings, lighting and ITS. Traffic Operations Designer

I-10/SR 8 Interchange Lighting Bundle at CR 137, CR 229, and US 90, FDOT District 2: This project consists of the design and construction to install high mast, conventional, or hybrid lighting at three intersections including: I-10/SR 8 at US 90 and I-10/SR 8 at CR 137 in Suwanee County and I-10/SR 8 at CR 229 in Baker County.

High Mast Lighting on I-75 at I-275 and CR 683/Moccasin Wallow Road (Design-Build), FDOT District 1: This project consists of the design and construction of new high mast lighting at the interchanges of I-75 and I-275 and CR 683 (Moccasin Wallow Road) due to the fact that existing high mast lighting assemblies have depreciated beyond repair & do not meet current standards. The new lighting system is being designed (using LED Luminaires) to meet current design standards and ensure that the existing high mast foundations are at full depth removal, as required by the RFP.

ITS Communication System: I-75 (from North of US 27 to Alachua County Line, FDOT District 5: ITS elements including CCTV and Microwave Vehicle Detector Stations (MVDS) are being designed on I-75(SR 93) From North of US 27 to the Alachua County Line. New fiber optic cable will also be installed and integrated into existing Fiber Optic Cable and shall be used for network communication to all devices. These devices are being incorporated into the existing network for control through the RTMC in Orlando. The Design includes the integration to the existing network and communication scheme of the District 5 SunGuide system. Metric is also responsible for communicating with FL Turnpike and the City of Ocala with any technical coordination.

Community Traffic Safety Program (CTSP), FDOT District 5: Task Work Order based Districtwide contract comprised of miscellaneous engineering services required to conduct studies and/or to design and prepare a set of contract plans which may include roadway, signing and pavement markings, signalization, lighting, sidewalk and/or bicycle ways along the transportation corridor that includes State highways, County streets, and City streets.

State of Florida

Board of Professional Engineers

Whereas, **Justin R. Schick** *has shown competency and fitness to practice Professional Engineering and has complied with all requirements of the Board of Professional Engineers; therefore by virtue of the powers vested in said Board by the State of Florida, the Florida Board of Professional Engineers hereby issues this certificate of licensure numbered* 86569 *to practice Professional Engineering in the State of Florida as provided by the laws of the state and subject to the powers as vested in said Board.*

In Testimony Whereof, Witness the signature of the Chair and Vice Chair under the seal of the Board this 11th *day of January, 2019.*

Audit No: 254838

Kenneth S. Todd, Jr.
Kenneth S. Todd, Jr.
Chair

Babu Varghese
Vice Chair

METRIC ENGINEERING

PATRICK EKLIN

Data Collection Manager

TECHNICAL EXPERTISE

Data Collection
Field Reviews
Study Preparation

YEARS OF EXPERIENCE

3 Years

CERTIFICATIONS/SKILLS

- FDOT Intermediate MOT

EDUCATION

- Devry University, Business Administration (Operations Management), Fall 2011 – Present

PROFESSIONAL PROFILE

Mr. Eklin served as a Data Collection Technician in Metric's Lake Mary office before being promoted to Data Collection Manager. In this role, he oversees Metric's entire Data Collection Team and all data collection activities that support Districtwide/Continuing Services Contracts and a wide range of projects. Overall his specific data collection experience includes 24-hour volume/classification counts, 48-hour volume/classification counts, 7-day volume counts, pedestrian counts, turning movement counts for traffic studies, signal retiming, access management studies, railroad queue counts, before and after speed studies, and pedestrian crossing counts. Much of his data collection experience has been to support arterial retiming studies and signal timing development/implementations.

REPRESENTATIVE PROJECTS

Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Transit Signal Priority (TSP) Study, FDOT District 5: District Five Traffic Operations office retained Metric to perform the study, design, and implementation of a TSP system for LYNX, a bus system run by the Central Florida Regional Transportation Authority. The TSP project was divided into three phases. During Phase 1, the project concentrated along bus routes that have a direct connection to the SunRail stations (DeBary Station to Sand Lake Road Station). Phase 2 and Phase 3 focused on additional bus routes considered secondary SunRail station feeders. As part of the study portion of the TSP project, bus routes were identified using the buses AVL/APC data, meetings with all stakeholders were held, priority conditions and monitoring parameters were established, field data was collected, system requirements were identified, and a Concept of Operations (ConOps) was produced.

Traffic Signal Retiming (2018 – 2020), Metroplan Orlando: As a prime consultant, Metric provides professional services for conducting corridor retiming on an as needed basis issued by task work orders. Overall, Metric develops traffic signal timing plans for implementation to improve the efficiency and safety along with corridors under MetroPlan's jurisdiction. Arterial retiming efforts includes but is not limited to: system operation review, traffic signal equipment inventory, analysis/implementation/documentation, data collection (4-Hr & 8-Hr Turning Movement Counts with pedestrians, bicycles, and trucks; 24-Hr Traffic Counts for Intersections; 7-Day Continuous Traffic Counts in both directions; and more) as well as public presentations and other miscellaneous tasks.

MetroPlan Orlando Traffic Signal Retiming (sub to HDR), MetroPlan Orlando: As a subconsultant to HDR on this contract, Metric is providing traffic signal retiming services. To date, we have performed the retiming on the following services: Livingston Street (6 Intersections) and Columbia Street (5 Intersections) where data collection was provided and retiming was performed for Columbia Street. 12 intersections total with software such as Synchro Version 10, Tru-Traffic Version 10, and Trafficware (ATMS.now/StreetSync). All controllers were Naztec 980. Upcoming work consists of the data collection and retiming for Pine Hills Road which will include 7 intersections.

Transit Signal Priority (TSP) Study, FDOT District 5: District Five Traffic Operations office retained Metric to perform the study, design, and implementation of a TSP system for LYNX, a bus system run by the Central Florida Regional Transportation Authority. The TSP project was divided into three phases. During Phase 1, the project concentrated along bus routes that have a direct connection to the SunRail stations (DeBary Station to Sand Lake Road Station). Phase 2 and Phase 3 focused on additional bus routes considered secondary SunRail station feeders. As part of the study portion of the TSP project, bus routes were identified using the buses AVL/APC data, meetings with all stakeholders were held, priority conditions and monitoring parameters were established, field data was collected, system requirements were identified, and a Concept of Operations (ConOps) was produced.

PATRICK EKLIN

Data Collection Manager

Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2001 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

Community Traffic Safety Program (CTSP), FDOT District 5: Task Work Order based Districtwide contract comprised of miscellaneous engineering services required to conduct studies and/or to design and prepare a set of contract plans which may include roadway, signing and pavement markings, signalization, lighting, sidewalk and/or bicycle ways along the transportation corridor that includes State highways, County streets, and City streets. *Client: FDOT District 5, Contact: Tony Nosses, 386-943-5334. Begin/End Dates: 2015 – Ongoing; Role: Data Collection*

Continuing Professional Traffic Engineering Services (2018-2019), Orange County: Metric provides miscellaneous professional traffic engineering services on this TWO-based continuing services contract to support the safe and efficient movement of all users of the County's transportation network. All work performed under this contract complies with the latest Federal Highway Administration MUTCD and the most recent edition of the FDOT Design Standards, TEM, Speed Zoning Manual, and MUTS guidelines. Tasks will include but are not limited to: Data Collection (Turning Movement Counts & Machine Traffic Counts); Traffic Studies (Spot Speed Studies, Intersection Delay Studies, Origin & Destination Studies, Traffic Signal Warrant Studies, School Safety Studies, Pedestrian & Bicycle Safety Studies, RSA) Studies, Miscellaneous Traffic Operational & Safety Studies, Roundabout Evaluations, and more); Traffic Signal, ITS, S&PM and Maintenance of Traffic Design Services; Studies & Design Review Support; Traffic Control/ITS Inventory Support; Minor Intersection Design; Signal/Corridor Retiming; Guardral Analysis & Design; and, Public Involvement Services.

Travel Time & Delay Studies Contract (2015 – 2021), Seminole County: Metric conducted travel time and delay studies for 323.4 miles of roadway in Seminole County for the purpose of developing measurements of operational levels of service (LOS). The studies utilized the Qstarz Travel Recorder XT GPS data logging device. This technology uses a versatile GPS data logging device designed for collecting detailed vehicle travel data that records second-by-second position and speed data based on user-specified logging rules. *Client: Seminole County, Contact: Mark Bevis, (407) 665-5685, Begin/End Dates: 2015 - Ongoing, Role: Data Collection*

Continuing Traffic Engineering Services, Osceola County: This continuing contract involves services which include traffic data collection, traffic operations studies, transportation planning analyses, and design and plans preparation. Design aspects include ITS, communication networks, VMSs, TTSs, lighting, roadway, and signal design. Most recently, Metric completed the Osceola County ATMS Phases 1A, 1B, and 1C under this contract. *Client: Osceola County; Begin/End Dates: 2015 – Ongoing, Role: Data Collection*

Road Safety Audit (RSA) & Safety Studies & Operational Studies Contract, FDOT District 2: The project includes conducting Road Safety Audits (RSA) and their corresponding follow-up safety studies as well as operational studies. The RSAs, analysis and recommendations produced are then used in the development of safety recommendations targeting the emphasis areas of the Florida Strategic Highway Safety Plan (FL-SHSP). Additional task included resolving complaints or requests received from concerned citizens, review fatal crashes, monitoring safety in specific work-zones, update and maintain the Department's Skid Hazard Reporting System, develop and utilize GIS based tools to identify locations with targeted crash patterns, perform Highway Safety Manual (HSM) analysis, and public involvement. *Client: FDOT District 2, Contact: Jeff Scott, PE, 904-360-5205, Begin/End Dates: 2015 – 12/2017, Role: Data Collection*

Traffic Engineering Services – Traffic Studies, City of Jacksonville: This contract includes various traffic engineering services which include: Crash Analysis with Mitigation Plans; Traffic Safety Studies with Mitigation Plans; Traffic Calming Plans; Traffic Impact Studies; Traffic Control Warrant Analysis; Access Management Plans; Traffic Circulation Plans and Traffic Routing Plans; Travel Time and Delay Studies; the review, development, and revision of engineering and planning documents; evaluating and/or conducting traffic operational/safety studies; intersection designs; and public information meetings. Metric will develop traffic studies and the reports associated with them for traffic signal warrant studies, isolation intersection analyses, roadway studies (speed zone, no-passing zones, and highway lighting justification) as well as traffic calming warrant analyses. This work also includes intensive data collection efforts, engineering and crash analyses, field reviews, and Benefit/Cost Analysis.

I-4 Ultimate Review Services, FDOT District 5: I-4 Ultimate is an important public-private partnership (P3) project for Central Florida. The $2 Billion, 21-mile makeover runs from west of Kirkman Road in Orange County to east of State Road 434 in Seminole County. Metric is a subconsultant to RS&H to complete the review of the I-4 Ultimate Corridor Plan for ITS impacts as well as the review of two major ITS Submittals for compliance and effect of construction on all 3rd party facilities. Mr. Eklin performed MVDS testing for the ITS portion of this oversight contract.

Certificate of Completion

Patrick S. Eklin

Has Completed a Florida Department of Transportation Approved Temporary Traffic Control (TTC) Advanced Course.

04/22/2023	165	Indhiyadira Pinto	49362
Date Expires	FDOT Provider #	Instructor	Certificate #

Race to Safety Training
PO Box 290464
Port Orange, FL 32129
www.racetosafety.com
sherrie@racetosafety.com

For more information about Temporary Traffic Control (TTC) or to verify this certificate

www.motadmin.com

Patrick S. Eklin

is hereby certified as a

Traffic Signal Inspector

by completing all requirements and examiniation for certification
on 9/28/2018

Valid thru 9/28/2021
Certification #SI_124356

Donald A. Fullerton

Donald A. Fullerton - Interim Executive Director

BidSync

Broward County Board of
County Commissioners

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Renewal Requirements:

Complete a personal log of your continuing education by documenting training and/or certification(s) received. Documentation can be recorded online in your IMSA profile OR by downloading the Renewal Packet found on the Renewal Requirements page. Certificates of completion, transcripts and any other relevant documentation can be uploaded on the IMSA website.

Options for Renewal:

Continuing Education

Attending Certification Course

Achieving the Next Level Certification

Documentation

It is the certification holder's responsibility to submit proof of continuing education. Continuing Education Credits (CECs) can be submitted for approval online in your IMSA profile.

Renewal After Expiration

The certification is no longer valid after the expiration date. However, you may reinstate your certification within one year of the expiration date by documenting 16 CEC hours for most certifications. If the certification is not reinstated within one year, you must renew through the normal certification process by taking the current certification exam at the highest level previously attained and paying the regular certification exam fee. Only the regular certification exam fees will be due, and retake of prerequisites will not be required. IMSA will not recognize any IMSA certificate(s) without an expiration date.

597 Haverty Court, Suite 100
Rockledge, FL 32955
321-392-0500
membership@IMSAsafety.org
www.IMSAsafety.org

Certification	Expires
Traffic Signal Inspector	9/28/2021

Name Patrick S. Eklin
IMSA ID# 124356
Section: Florida
Signature:

DEMETRIUS T. LEWIS

Network/CV Specialist; Technology LEAD

TECHNICAL EXPERTISE

IT/TSM&O Project Management
Network Engineering
Systems Engineering
Hardware and Software Deployment

YEARS OF EXPERIENCE

14 Years

CERTIFICATIONS

- JNCIA-Junos
- Microsoft Certified Professional (MCP)
- Comptia Network+

SKILLS

Storage
- SAN Storage
- Fibre Channel
- iSCSI

Software
- OSPInsight
- SunGuide/Database Support
- Software Development (Web-Site)
- HTML

EDUCATION

- A.A., Valencia Community College (2010)
- New Horizons Computer Learning Center (2005)
- Tallahassee Community College (2003)

PROFESSIONAL PROFILE

Demetrius Lewis brings more than 14 years of experience in network engineering, administration, design and integration of local- and wide-area networks (LAN/WAN). He was also responsible for maintaining FDOT's and Central Florida Expressway ITS telecommunications system, technical contract writing, management and negotiations, fiber-optic network design and management, reviewing network design plans and fiber schematics, SunGuide software administration and integration, and interfacing and coordinating with multiple interagency disciplines and externally to successfully develop RFPs and deploy ITS projects.

Mr. Lewis' experience includes managing ITS projects, budgets and schedules, overseeing the installation of ITS infrastructure and subsystems such as dynamic message signs (DMS), closed-circuit television (CCTV) systems, vehicle detection system (VDS), fiber-optic networks (FON). He developed and reviewed documents such as requests for proposals (RFP), concepts of operation (ConOps), systems engineering management plans (SEMP), and requirements traceability and verification matrices (RTVM), regional ITS architectures (RITSA) for ITS projects.

PROFESSIONAL DEVELOPMENT & TRAINING

Extreme Networks Specialist (ENS) Training, Cisco Certified Network Associate (CCNA), Foundry Networks Switch/Router Training, PMI Project Management Professional (PMP), PMI, Microsoft Certified Systems Engineering 2003, FDOT Project Management Training, OTDR Fiber Troubleshooting Training, Comptia Security+, 7 Habits of Highly Effective People, Microsoft Project+ Advanced Training

PRESENT EXPERIENCE

His current responsibilities are centered on addressing the need of an ever-evolving transportation industry into a more technologically based model (i.e. Connected Vehicles, Network Security, etc.). Managerial duties include overseeing and managing three (3) primary groups: 1. IT Support Services (Network Engineering, Server Administration & Storage Area Networks), 2. ITS Integration Services (Layer 2+ communication equipment and field device implementation) and 3. GIS/Software development Services. Responsible for growing the IT disciplines within Metric Engineering, Inc. as well as, procuring work in these three areas. In addition, he is responsible for quality assurance and focused on customer service, as well as assisting staff to maintain all required industry related certifications in order to ensure relevance within the industry.

REPRESENTATIVE PROJECTS

ITS Network Support Services, Tampa-Hillsborough Expressway Authority (THEA): Metric was selected by THEA to provide a wide variety of network services on an as-needed basis, either on-call, onsite or remotely. Metric will provide to THEA's ITS/Operations Network staff. Services will include but are not limited to: network configuration, analysis, management, security, monitoring, troubleshooting, ITS hardware, wireless telecommunications support, and ITS device integration.

Districtwide Continuing Services - **ITS Consultant, Florida's Turnpike Enterprise:** This contract is a Continuing Services contract for ITS Design Services covering multiple areas within FTE system of toll roads.

CV Readiness Study & Implementation Plan, Florida's Turnpike Enterprise: Metric was recently awarded the task of conducting a CV Readiness assessment for the FTE. As a part of this task, the Metric staff will research and document the current state of CV technology within the industry and will conduct various internal hardware, software and storage needs, security and staffing proficiency assessments as well as roadway infrastructure evaluations as it pertains to the readiness of FTE to deploy CV technology. All these tasks will aid in the development of a short and long-term CV Technical Implementation Plan for FTE. This assessment will be conducted at a national and statewide level.

General Systems Consulting Services, Central Florida Expressway (CFX): Metric serves as a subconsultant to HNTB Corporation for this five-year continuing services contract which provides the Central Florida Expressway Authority (CFX) comprehensive support and guidance relative to the management and operation of all CFX's computer, network, and communications systems for both internal IT and ITS systems. The HNTB Team supports systems integration, operations, maintenance, and applications. We provide long-range planning assistance for Systems upgrades and ensure that CFX's systems remain current. Services also include the assistance in

DEMETRIUS T. LEWIS

Network/CV Specialist; Technology LEAD

planning of future toll collection technology, CV and Automated Vehicle (AV) technologies, interoperability with other toll collection and external agencies, as well as smart phone technology and applications. Metric also provides general IT support services in the form of Datacenter migration, IT/Networks Assessments and Implementation, and IT virtual environment (ITVE) design and implementation and various others. Metric provides Senior Network Engineer, Network Engineer, and a Senior Network Security Administrator.

General IT & Maintenance Consultant Services, Orange County Sherriff's Office: Overall, the services provided by Metric in the form of these three roles included the development of Security Architecture which involved researching security firewall brands and models as well as the associated budgetary costs for procurement and installation. Metric staff reviewed and documented the Existing Network Infrastructure and developed a Visio diagram of a proposed network infrastructure. Once the overall decisions were made, Metric assisted with the Security Deployment and Implementation which consisted of installing and configuring the new firewall; determine and document Firewall policies; test network and firewall policies; as well as configuring existing Brocade Core Router and Switches.

ITS Network Administration, Maintenance and Repairs, Osceola County: Metric provides Osceola County ITS professional services of the operation and maintenance in connection with network administration support. These services are provided to Osceola County on an as-needed, TWO basis. A major portion of the work is assisting Osceola County's staff with their ITS network in an effort to ensure all sources available, including but not limited to, those which can provide traffic videos, travel time information, congestion information, traffic incident management coordination, motorist information and other relevant data. Maintenance services provided consist of, but are not limited to the installation, integration, maintenance and repair of fiber optic cable, ITS devices, traffic signal equipment, inventory, and infrastructure. The team also provides contract administration services consisting of 24x7x365 on call staff, Bi-Weekly Status Reports, Monthly Status Reports, Quarterly Reports, Meeting coordination and minutes, Project management plan, Standard Operating Procedures, Project Estimates, Maintenance Checklists and inventory management utilizing the FDOT District 5 MIMS. Network administration and support services are also provided to monitor the Osceola County ITS/Traffic Signal network and provide troubleshooting and repair as required. Specifically, one TWO includes Metric providing plan reviews, break-fix services, and advises the County on the most effective method to incorporate new signalized and ITS locations within their existing fiber optic infrastructure for the least amount of capital costs.

Continuing Traffic Engineering Services – General Technology Services, Osceola County: Metric provides Osceola County continued services through a Continuing Traffic Engineering Services contract on an as-needed, TWO basis. Metric provides in-person, remote and on-call technology support services which include Traffic Signal and ITS plan reviews, ITS network engineering, design, deployment and configuration of telecommunications equipment, ITSFM inventory data collection and input, SolarWinds network performance monitor configuration and implementation, SunGuide deployment, and Osceola County Toll Plaza assessments. Metric is also responsible for troubleshooting and updating all network equipment, servers, software and any other IT equipment, providing general IT Project Management support to manage upcoming ITS/ATMS projects that are scheduled for design and construction, performing document/plans reviews services for on-going County led construction projects or projects that affect the County's ITS/ATMS infrastructure and conducting analysis of the County's hardware and software assets which includes reporting existing hardware, software, and infrastructure (fiber, communications equipment) and determines the cost/benefit to upgrading, replacing, or keeping existing equipment.

ITS Maintenance Services, FDOT District 5: Metric has partnered with ACS to perform the maintenance services for ITS devices and infrastructure located in the counties of Brevard, Flagler, Lake, Marion, Orange, Osceola, Seminole, Sumter, and Volusia. The system includes Traffic control signal and ITS device grounding and surge suppression; conduit; Communications cable; Pull, splice, and junction boxes; Electrical power service assemblies; Pre-stressed concrete and steel poles; Vehicular signal assemblies; Vehicle detection systems (VDS); Traffic controller assemblies; Adaptive Signal Control Equipment; Visibility Sensors; Bluetooth Devices; Equipment cabinets; Ramp metering assemblies; Video equipment; Network devices; Highway signing (DMS & arterial); Camera lowering systems; RWIS; Wireless communication devices; Portable and permanent emergency power generators; UPS; Communications hubs and equipment shelters; Ancillary facilities such as SunGuide data servers & workstations; Environmental conditioning equipment and Hardware, software and firmware.

General Engineering Consultant Services (sub to HNTB), FDOT District 5: Metric provides ITS Planning, Project Management, and In-House support under this contract and assists with ITS Project Management duties including plans review, construction coordination, Systems Engineering Analysis (SEA) document reviews, architecture maintenance. Under this contract, Metric has assisted with two TSM&O-related tasks. One them Metric provided in-house project management support for the FDOT District 5 TSM&O Program for technical projects such as Design-Bid-Build (D-B-B), Design-Build (D-B) and & Invitation-to-Bid (ITB). The other TWO has Metric providing in-house IT support for the TSM&O program to include network and system administrations tasks in the areas of network engineering, security, server administration or physical and virtual environment, oversight of all data center equipment. Also provides troubleshooting, repair and enhancements to all TSM&O IT systems and software applications along with other IT related task as needed. Also provides project management and support for task and IT program management and budgeting and procurement.

9/23/2019

Criminal Justice Information System
Security & Awareness Training

This is to certify that

Demetrius Lewis

has successfully completed the

Level 2 CJIS Security Training

This certification expires two years from the date of issuance.

April 14, 2016	**April 14, 2018**
Certification Date	Expiration Date

BidSync

Broward County Board of County Commissioners

PNC2119168P1

METRIC ENGINEERING

SCOTT AGANS

Network Specialist

TECHNICAL EXPERTISE

ITS - Information Technology
Telecom/Network Engineering
Systems Integration

YEARS OF EXPERIENCE

20+ Years - Including IT Project Management, Hardware and Software Deployment Experience and ITS Project Management, Hardware and Software Deployment Experience

CERTIFICATIONS

- Extreme Networks ENA & ENS
- Extreme Networks Configuration Fundamentals
- Foundry Networks (Configuration & Management Switch/Router)

ITS EXPERIENCE

- SmartSensor HD Configuration & Installation Technical Training – WaveTronix
- Radar Basics Technical Training – WaveTronix
- Sirit DCS
- DMS (Daktronics and Skyline)
- Surge Protection Devices
- Bosch Auto Dome Modular Cable Systems
- BICSI Certified Technician
- AFO – Advanced Fiber Optics – OSP Insight Certification

HARDWARE/SOFTWARE SKILLS

- SunGuide Software & Database Support
- Avaya Telephony
- Fibre Channel

EDUCATION

- MS Information Systems, University of Phoenix (2011)
- BS Information Technology, University of Phoenix (2010)

PROFESSIONAL PROFILE

Mr. Agans is a Senior Network Engineer with 20+ years of experience, specializing in ITS, information technology and telecommunications. Mr. Agans has "hands-on" experience in the ITS field, including network engineering, systems integration, switch routing, premise wiring and configuration as well as fiber optic cable design, construction, troubleshooting and testing. In his current role with Metric Engineering Mr. Agan's current responsibilities include but are not limited to:

- ✓ Developing turnkey Ethernet/Wireless Networks to include Network Redundancy & Security
- ✓ Configuration of Virtual Local Area Networks (VLAN) and Serial to Ethernet communications used for remote configuration and control
- ✓ Develop and deploy ITS Device Testing Procedures
- ✓ Configuration and troubleshooting of Layer 3 Ethernet and multicast routed networks including firmware upgrades
- ✓ Testing, integration, maintenance and troubleshooting of various ITS devices:
  - CCTV Cameras (Bosch, Vicon, Pelco, Cohu, Sony, Panasonic)
  - MVDS Sensors (Wavetronix 105 / 125, EIS, Sirit)
  - RWIS Sensors (HIS, Viasala)
  - HAR Systems / HAR Systems Software
  - DMS Signs Full Matrix and Arterial
  - Video Encoders (Impath, Vbrick, Coretec, Bosch, ITV)
  - Port Servers (Digi, B&B Electronics, Comtrol, Moxa)
  - Fiber Modems both serial and video multiplexors (IFS, GE Security)
  - Surge Suppression (Wavetronix, Edco, Atlantic Scientific)
  - Wireless Ethernet Transmission Equipment
  - Ethernet Switches / Routers (RuggedCom, Etherwan, Cisco, Garrettcom. Brocade (Foundry), Extreme Networks, Dell, Juniper, Sixnet, ITS Express)
  - Ethernet Media Converters
  - FDOT SunGuide Software (Database and Deployment and troubleshooting)

He has over 10 years of experience in managing and performing Fiber Optic installations, 7 years of experience in managing major ITS integration projects and five years' experience managing ITS CEI contracts.

REPRESENTATIVE PROJECTS

Traffic Signalization Improvement Program, Broward County: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services. Metric led a task as part of a State Energy Program (SEP) grant to develop and implement updated signal timing plans for 110 signals with Naztec controllers on four separate corridors in Broward County, Florida. The work included data collection, establishment of appropriate models, and development of controller settings, implementation and fine-tuning of those settings in the field. Ultimately, travel times were reduced by up to 50% along all of the corridors. *Reference: Michael S. Cleary, PE, 954-357-5838*

Signal Enhancement Conceptual Plan, Broward County: This task included conceptual planning over five years to provide a framework to effectively move the County's SEI program forward utilizing a cost-effective method that maximized the use of existing infrastructure and equipment. It is anticipated that these planning efforts will be used to develop a series of projects that will evolve the existing signal systems and will identify immediate needs. The planning efforts were consistent with the NITSA, the State of Florida ITS Architecture, the District Four RITSA, and the Florida ITS Strategic Plan (Operations Perspective).

SCOTT AGANS

Network Specialist

Broward County ITS Deployment, FDOT District 4: This project consisted of the design and installation of a wireless mobile VoIP subsystem, a Road Weather Information System and Highway Advisory Radio Subsystem within the I-95 corridor in Broward County, as well as the installation of arterial Dynamic Message Sign subsystem at select arterial intersections and the integration of all subsystems into the existing ITS system in Broward County.

DW Traffic Operations TSM&O Support Services, FDOT District 4: This project includes support services for the new TSM&O program within the Florida Department of Transportation to improve the efficiency of existing transportation network through performance monitoring, active arterial management, Integrating Freeway Management with Arterial Management and Incident Management on Arterials and Freeways. The project includes the deployment of an Intelligent Transportation System (ITS) along the District's interstates to monitor and improve incident clearance time and travel time and the implementation of the Advanced Transportation Monitoring System (ATMS). Both systems will utilize SunGuide software to manage these devices and traffic signals.

DW Traffic Operations ITS Consultant – Three Consecutive Contracts, FDOT District 1: This project includes a range of study, planning, design, integration, diagnostic, operations, management, review, evaluation and engineering services; including technical and administrative tasks for Intelligent Transportation System projects for District 1. Metric is to support all facets of the Traffic Operations Office ITS Program, including ITS planning, ITS architecture, ITS design, ITS integration, ITS diagnostics and ITS Operations, including facilitating the TIM Team activities and TIM initiatives.

DW TSM&O: ITS & ATMS Consultant – Network Engineering Support Services, FDOT District 3: This is a TWO-based contract to provide a diversified range of services, including technical and administrative tasks for the ITS and ATMS programs in District 3. Services include many areas of ITS/ATMS, such as but not limited to studies, planning, network architecture, design, integration, diagnostics, troubleshooting, management, review, evaluation, inspection, engineering, as well as participation in the District's TIM Team activities. Metric's Technology Group provides remote and/or on-site network engineering support for FDOT District 3 ITS staff. This entails configuration, architecture design and troubleshooting of the FDOT District 3 ITS network, technical review of network diagrams, reports and other documents as it relates to the network to advise and support FDOT District 3 initiatives. One specific TWO for instance, District 3 commissioned Metric's IT staff to perform an in-depth analysis of their existing ITS along I-10, a major interstate that runs the length of the District. Our Team reviewed all existing fiber optic documentation and existing Optical Time Domain Reflectometer (OTDR) traces. Our Team then performed a comparable OTDR testing once the analysis was completed, we provided an extensive overall testing finding report to the Department.

General Systems Consulting Services, Central Florida Expressway: Metric serves as a subconsultant to HNTB Corporation for this five-year continuing services contract which provides CFX comprehensive support and guidance relative to the management and operation of all CFX's computer, network, and communications systems for both internal IT and ITS systems. The HNTB Team supports systems integration, operations, maintenance, and applications. Metric provides long-range planning assistance for Systems upgrades and ensure that CFX's systems remain current. Services also include the assistance in planning of future toll collection technology, CV and Automated Vehicle (AV) technologies, interoperability with other toll collection and external agencies, as well as smart phone technology and applications. Metric also provides general IT support services in the form of Datacenter migration, IT/Networks Assessments and Implementation, and IT virtual environment (ITVE) design and implementation and various others. Metric provides a Senior Network Engineer, Network Engineer, and a Senior Network Security Administrator.

TSM&O Arterial Network Assessment, (sub to Traffic Engineering Data Solutions (TEDS)), FDOT District 5: As a TWO under TEDS' Districtwide Transportation Systems Management & Operations (TSM&O) Studies & Design contract, Metric will perform an assessment of the existing ITS and ATMS systems on arterial roadways that are owned, operated and maintained by District 5 or other partnering local agencies. The work will consist of field reviews documenting ITS/ATMS device locations, IP address assignments, fiber optic cables, and more, at all arterial hub sites. Metric also assists with project management and contract maintenance by identifying and attending various project meetings with stakeholders as well as the EDMS. This work aids in the ultimate goal of developing a new Network Architecture design and implementation plan to migrate the existing arterial devices into the FDOT District network.

ITS Network Administration, Maintenance and Repairs, Osceola County: Metric provides Osceola County ITS professional services of the operation and maintenance in connection with network administration support. These services are provided to Osceola County on an as-needed, TWO basis. A major portion of the work is assisting Osceola County's staff with their ITS network in an effort to ensure all sources available, including but not limited to, those which can provide traffic videos, travel time information, congestion information, traffic incident management coordination, motorist information and other relevant data. Maintenance services provided consist of, but are not limited to the installation, integration, maintenance and repair of fiber optic cable, ITS devices, traffic signal equipment, inventory, and infrastructure. The team also provides contract administration services consisting of 24x7x365 on call staff, Bi-Weekly Status Reports, Monthly Status Reports, Quarterly Reports, Meeting coordination and minutes, Project management plan, Standard Operating Procedures, Project Estimates, Maintenance Checklists and inventory management utilizing the FDOT District 5 Maintenance and Inventory Management System (MIMS). Network administration and support services are also provided to monitor the Osceola County ITS/Traffic Signal network and provide troubleshooting and repair as required.

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December 10, 2018

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Scott Agans

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Presented By: Dave Snelling

9/23/2019

Criminal Justice Information System
Security & Awareness Training

This is to certify that

Scott Agans

has successfully completed the

Level 2 CJIS Security Training

This certification expires two years from the date of issuance.

January 8, 2018	**January 8, 2020**
Certification Date	Expiration Date

BidSync

Broward County Board of County Commissioners

PNC2119168P1

Certificate of Completion

360training.com™

This Certifies That

Scott Agans

is awarded this certificate for

Confined Space Entry Training

Complying with OSHA Standard 29 CFR 1910.146, Entrant, Attendant, Supervisor

Credit Hours: 8

Completion Date: 08/29/2019

Marie Athey

Marie Athey, OSHA Trainer

360training.com ♦ 13801 Burnet Rd., Suite 100 ♦ Austin, TX 78727 ♦ 888-360-TRNG ♦ www.360training.com

METRIC ENGINEERING

RICHARD PHILLIPS

Network Specialist

TECHNICAL EXPERTISE

Network & Systems Security
Network Design & Architecture
Data Integrity/Recovery
Firewall Management
VPN
Training & Development
Risk Assessment

YEARS OF EXPERIENCE

18 Years

EDUCATION

- H.S. Diploma

PROFESSIONAL PROFILE

Mr. Phillips joins Metric as a Senior Network Engineer and brings an extensive experience in a broad range of technologies. He is proficient secure network design, maintenance and administration for single and multi-tenant environments which means he experience with large and small IT environments, teams and budgets. Mr. Phillips is adept at developing effective security policies and procedures, project documentation and milestones, and technical/business specifications. He is budget conscious and skilled in delivering solutions within schedule and under budget. He has already started training to curb his superior networking skills and apply it to the transportation industry.

PLATFORMS / VENDOR EXPERIENCE

Cisco Catalyst, Cisco IOS, Microsoft Windows 9.x through 2016, Apple OS X, Resilience, Dell Switch; O/S, HP switch O/S, Force 10, ISS, Array Networks, HP, Compaq, Dell, IBM, Raritan, Avocent, H3C, TippingPoint, VMWare, Hyper-V, Ruckus, Ubiquiti, Aruba, Sonicwall, Lifesize, Silver Peak, Live Action, Palo Alto, LANSweeper

NETWORKING / TOOLS

TCP/IP, Ethernet, VPN, SSH, Telnet, putty, Tera Term, DNS, DHCP, LAN, WAN, VLAN, SNMP, Kixtart; scripting, Batch scripting, ISS RealSecure, Checkpoint Firewall, Cisco ASA, McAfee/Norton/eTrust; Virus Protection Utilities, Microsoft Office, Microsoft Visio, Firefox, Internet Explorer, Safari, Wireshark, Chrome, Google Docs, Solarwinds, What's Up Gold, AdventNet, NetVault, BrightStor

REPRESENTATIVE PROJECTS

General Systems Consulting Services (subconsultant services to HNTB), Central Florida Expressway Authority (CFX): Metric serves as a subconsultant to HNTB Corporation for this five-year continuing services contract which provides the CFX comprehensive support and guidance relative to the management and operation of all CFX's computer, network, and communications systems. The HNTB Team supports systems integration, operations, maintenance, and applications. We provide long-range planning assistance for Systems upgrades and ensure that CFX's systems remain current. Services also include the assistance in planning of future toll collection technology, Connected Vehicle (CV) and Automated Vehicle (AV) technologies, interoperability with other toll collection and external agencies, as well as smart phone technology and applications. Metric also provides general IT support services in the form of Datacenter migration, IT/Networks Assessments, and IT virtual environment (ITVE) design and implementation and various others.

General IT & Maintenance Consultant Services, **Orange County's Sheriff Office:** Overall, the services provided by Metric in the form of these three roles included the development of Security Architecture which involved researching security firewall brands and models as well as the associated budgetary costs for procurement and installation. Metric staff reviewed and documented the Existing Network Infrastructure and developed a Visio diagram of a proposed network infrastructure. Once the overall decisions were made, Metric assisted with the Security Deployment and Implementation which consisted of installing and configuring the new firewall; determine and document Firewall policies; test network and firewall policies; as well as configuring existing Brocade Core Router and Switcher hardware.

ITS Network Administration, Maintenance and Repairs, Osceola County: Metric provides Osceola County ITS professional services of the operation and maintenance in connection with network administration support. These services are provided to Osceola County on an as-needed basis. Maintenance Services provided consist of, but are not limited to the installation, integration, maintenance and repair of fiber optic cable, ITS devices, traffic signal equipment, inventory, and infrastructure. The team also provides contract administration services consisting of 24x7x365 on call staff, Bi-Weekly Status Reports, Monthly Status Reports, Quarterly Reports, Meeting coordination and minutes, Project management plan, Standard Operating Procedures, Project Estimates, Maintenance Checklists and inventory management utilizing the FDOT District 5 Maintenance and Inventory Management System (MIMS). Network administration and support services are also provided to monitor the Osceola County ITS/Traffic Signal network and provide troubleshooting and repair as required.

Continuing Traffic Engineering Services on a Task Authorization Basis (PS-17-9180-TP), Osceola County: Metric provides Osceola County continued services through this contract on an as-needed basis. Services provided consist of but are not limited to Technology support to include Traffic Signal and ITS plan reviews, ITS network re-design and configuration, Intelligent Transportation System Facility Management (ITSFM) data collection and input, SolarWinds configuration and implementation, SunGuide deployment, and Osceola County Toll Plaza assessments.

TWO - General Technology Support: Under this Continuing Services Contract for Osceola County, Metric provides general construction Project Management support to manage upcoming ATMS/ITS projects that are scheduled for design and construction;

RICHARD PHILLIPS

Network Specialist

Metric also performed document/plans reviews services for on-going County led construction projects or projects that affect the County's ITS/ATMS infrastructure. Additionally, FDOT District 5 provided the County access to various FDOT-owned central software packages used to manage freeway and arterial roadway devices, IT network communication equipment as well as inventory management. Metric assisted adding County devices and equipment to the various central software databases for usage. Metric coordinated with FDOT District 5 to integrate the County's ATMS system into SunGuide, Maintenance Inventory Management System (MIMS) and SolarWinds Network Performance Monitoring software packages. Metric also provided training to County staff on how to utilize each software application. In addition, Metric also conducts assessments of the County's hardware and software assets which includes reporting existing hardware, software, and infrastructure (fiber, communications equipment) and determines the cost/benefit to upgrading, replacing, or keeping existing equipment.

PRIOR EXPERIENCE

06/2014 – 08/2018: Senior Network Engineer: Cerner (Rutland, VT): Mr. Phillips was recruited to manage network systems and infrastructure for multiple locations. Key contributions included:

- Implemented Ruckus Wireless saving over $3,000,000
- Automated Palo Alto updates saving over 100 hours annually
- Created documentation standards using Centers for Medicaid and Medicare Services formatting
- Implemented and maintained full SolarWinds monitoring suite
- Maintained Cygilant Security Information and Event Management System
- Maintained LANSweeper network asset management system
- Full network documentation with Visio, Excel and Word

06/2012 – 06/2014: Senior Network Administrator: Church of the Resurrection (Leawood, KS):

Recruited to manage network systems and infrastructure for multiple locations. Key contributions included:

- Implemented Solarwinds Network Performance Manager and Configuration Manager
- Implemented network change control procedures and documentation
- Upgraded Sonicwall firewall appliance and implemented high availability
- Configured Cisco VPN Concentrator high availability pair for remote connectivity
- Engineered migration of seminary network into existing infrastructure, adding two additional locations
- Upgrade and expand Ruckus wireless system including configuration of central management across campuses
- Built network for new location with wireless interconnect to existing location
- Documented physical and logical networking with Visio and Excel

03/2001 – 05/2012: Network and Systems Administrator: Hewlett Packard (Oklahoma City, OK): Mr. Phillips recruited to establish and manage account-wide network and systems. Oversee efforts to identify and evaluate all critical systems. Design and implement security processes and procedures and perform cost benefit analysis on all recommended strategies. Build, deploy and manage networking, servers and workstations. Key contributions included:

- Engineered DMZ, client isolation, network isolation and customer connection Firewall systems
- Implemented and managed data center Intrusion Prevention systems
- Created and documented procedures for security, data protection and access policies
- Lead team in designing Oklahoma MMIS administration network consisting of: 300+ servers, physical and virtual, 50 diverse network appliances and 350+ users, local and remote
- Designed fully redundant DMZ structure for internet hosting and customer connectivity producing revenue stream over $200,000 annually and providing 100% uptime
- Designed and implemented network with additional contract, leveraging existing infrastructure saving over $1,000,000
- Designed and implemented VMWare test environment for State of Oklahoma account
- Designed and implemented Hyper-V test environment for State of Texas account
- Responsible to implement and maintain 5 discrete customer networks in single data center
- Documented procedures for network operations and maintenance
- Trained users on applications and empowered users for self-service diagnostics and development

06/1999 – 03/2001: Distributed Computer Systems Analyst: Florida Agency for Health Care Administration (Tallahassee, FL): Mr. Phillips was selected to support three agency offices for the Florida Agency for Health Care Administration. He coordinated efforts and communications with central office, information systems and department heads; he acted as liaison between users, management and service providers.

KEVIN BOSTON

ITS Integration/ Maintenance Specialist

TECHNICAL EXPERTISE

Systems Integration/ Networking
Fiber Optics
Field Reviews/Inventory
CCTV / DMS / MVDS Installation & Testing
ITS CEI

YEARS OF EXPERIENCE

9 Years

CERTIFICATIONS

- IMSA Traffic Signals Technician Level I & II
- Advanced Maintenance of Traffic
- Daktronics DMS
- ITSFM Maintainer
- Fiber Optic Design, Installation, and Maintenance
- CORNING - Fiber Optic Theory, Connections, Splicing and Testing
- FDOT Security Awareness Course
- CJIS Security & Awareness
- Certified Fiber Optics Installer
- ACI Concrete

SKILLS

- Software
- SunGuide
- MIMS
- Vanguard Pro

EDUCATION

- H.S. Diploma (2002)

PROFESSIONAL PROFILE

Mr. Boston joined Metric as an Integration Technician and has successfully worked his way into Systems Integration Project Management. In his current role with Metric Engineering, Mr. Boston's responsibilities include but are not limited to: installation, testing and integration, maintenance and troubleshooting of various ITS devices, including:

- CCTV Cameras (Bosch, Vicon, Pelco, Siqura, GovComm)
- MVDS Sensors (Wavetronix 105/125/126, RTMS G4)
- Bluetooth (DigiWest BlueMac, Trafficast BlueToad, Iteris)
- DMS Signs Full Matrix and Arterial (Daktronics (Full Color), Ledstar)
- Video Encoders (iMPath, Vbrick, Coretec)
- Port Servers (Digi, B&B Electronics, Comtrol, Moxa)
- Surge Suppression (Wavetronix, Atlantic Scientific, Citel)
- Ethernet Switches / Routers (RuggedCom, Etherwan, GarrettCom. Brocade (Foundry), Dell, Juniper, ITS Express)
- Ethernet Media Converters (Etherwan, GarrettCom, RuggedCom)
- FDOT SunGuide Software (Configuration and Troubleshooting)
- FDOT MIMS Software (Configuration and Troubleshooting)

Kevin was previously assigned to the FDOT District 5 ITS Maintenance Services Contract. He has over 6 years of ITS experience, with 4 years of experience in managing major ITS integration and maintenance projects.

REPRESENTATIVE PROJECTS

ITS Maintenance Services, FDOT District 5: Metric teamed with Advanced Cabling Solutions to provide the FDOT District 5 ITS Maintenance Services. Maintenance Services provided consist of, but are not limited to the installation, integration, maintenance and repair of fiber optic cable, ITS devices, traffic signal equipment, inventory, and infrastructure. The team also provides contract administration services consisting of 24x7x365 on call staff, Bi-Weekly Status Reports, Monthly Status Reports, Quarterly Reports, Meeting coordination and minutes, Project management plan, Standard Operating Procedures, Project Estimates, and Maintenance Checklists. Inventory and device management of the FDOT District 5 Maintenance and Inventory Management System (MIMS) and Intelligent Transportation System Facility Management (ITSFM) is provided daily.

ITS Network Administration, Maintenance and Repairs, Osceola County: Metric provides Osceola County ITS professional services of the operation and maintenance in connection with network administration support. These services are provided to Osceola County on an as-needed basis. Maintenance Services provided consist of, but are not limited to the installation, integration, maintenance and repair of fiber optic cable, ITS devices, traffic signal equipment, inventory, and infrastructure. The team also provides contract administration services consisting of 24x7x365 on call staff, Bi-Weekly Status Reports, Monthly Status Reports, Quarterly Reports, Meeting coordination and minutes, Project management plan, Standard Operating Procedures, Project Estimates, Maintenance Checklists and inventory management utilizing the FDOT District 5 Maintenance and Inventory Management System (MIMS). Network administration and support services are also provided to monitor the Osceola County ITS/Traffic Signal network and provide troubleshooting and repair as required.

Maintenance, TMC & Integration Support Services for Osceola County ATMS/ITS Deployments, Osceola County: This project provides Osceola County services such as ATMS/ITS maintenance, TMC and integration support as a follow up to the Osceola County ATMS Phase III project. Scope of work includes general networking oversight duties, integration of new Econolite Controllers through ATMS/ITS system, creation and maintenance of database, TMC support, and any other needs as identified by the County.

Continuing Engineering Services on a Task Authorization Basis, Osceola County: Metric provides Osceola County continued services through this contract on an as-needed basis. Services provided consist of, but are not limited to Technology support to include Traffic Signal and ITS plan reviews, ITS network re-design and configuration, Intelligent Transportation System Facility

KEVIN BOSTON

ITS Integration/Maintenance Specialist

Management (ITSFM) data collection and input, SolarWinds configuration and implementation, SunGuide deployment, and Osceola County Toll Plaza assessments.

District-wide Traffic Operations TSM&O Support Services, FDOT District 4: This project includes support services for the new TSM&O program within the Florida Department of Transportation to improve the efficiency of existing transportation network through performance monitoring, active arterial management, Integrating Freeway Management with Arterial Management and Incident Management on Arterials and Freeways. The project includes the deployment of an Intelligent Transportation System (ITS) along the District's interstates to monitor and improve incident clearance time and travel time and the implementation of the Advanced Transportation Monitoring System (ATMS), expected to be operational in 2014. Both systems will utilize SunGuide software to manage these devices and traffic signals.

I-4 Ultimate Review Services, FDOT District 5: I-4 Ultimate is an important public-private partnership (P3) project for Central Florida. The $2 Billion, 21-mile makeover runs from west of Kirkman Road in Orange County to east of State Road 434 in Seminole County. Metric is a subconsultant to RS&H to complete the review of the I-4 Ultimate Corridor Plan for ITS impacts as well as the review of two major ITS Submittals for compliance and effect of construction on all 3rd party facilities.

ITS Communication System: I-75 (SR 93) from North of US 27 to Alachua County Line, FDOT District 5: ITS elements including Close Circuit Television Cameras (CCTV Cameras) and Microwave Vehicle Detector Stations (MVDS) will be installed on I-75(SR 93) From North of US 27 to the Alachua County Line. New fiber optic cable will also be installed and integrated into existing Fiber Optic Cable and shall be used for network communication to all devices. These devices shall be incorporated into the existing network for control through the Regional Traffic Management Center (RTMC) in Orlando. The Design includes the integration to the existing network and communication scheme of the District 5 SunGuide system. Metric is also responsible for communicating with FL Turnpike and the City of Ocala with any technical coordination.

ITS Freeway Management: I-75 (SR 93) from SR 24 in Alachua County to Georgia State Line, FDOT District 2: This 87 mile ITS project involves two sets of plans, both within the same project limits. The first project involves the design of a fiber / conduit backbone communication system installation. The second project provides the design of the field equipment communication devices, DMS, CCTV, vehicle detectors and deployment.

Transit Signal Priority (TSP) Study, FDOT District 5: District Five Traffic Operations office retained Metric Engineering Inc. (Metric) to perform the study, design, and implementation of a Transit Signal Priority (TSP) system for LYNX, a bus system run by the Central Florida Regional Transportation Authority. The TSP project was divided into three phases. During Phase 1, the project concentrated along bus routes that have a direct connection to the SunRail stations (DeBary Station to Sand Lake Road Station). Phase 2 and Phase 3 focused on additional bus routes considered secondary SunRail station feeders. As part of the study portion of the TSP project, bus routes were identified using the buses AVL/APC data, meetings with all stakeholders were held, priority conditions and monitoring parameters were established, field data was collected, system requirements were identified, and a Concept of Operations (ConOps) was produced.

Network Support, City of Jacksonville: All layers of networking have been facilitated in Clay County, Saint John's County, and Duval County. The project included a redesign of physical and logical infrastructure, which was completed in diagram form. The initial phase was to stabilize and prepare the network for future ITS implementations and the connection to the Duval and FDOT networks. The most significant improvements to the network include upgrading all links from 100 MBPS to 1 GBPS, creating redundant physical paths, utilizing multiple spanning tree for redundancy, and splitting the network into smaller manageable networks utilizing the layer 3 protocol OSPF. Beyond these improvements, Clay County has benefited through configuration and merging (integration) of a US17 project that consisted of 7 switches and 7 cameras. At completion of this project, Clay County had over 60 switches including ITS-express, Comtrol, GarrettCom, and Cisco that were configured utilizing protocols such as MSTP, 802.1Q, and OSPF. Included in the integration were the additions to Bosch Vidos monitor wall application. During this project, Clay County had a server crash without any back up. Once Clay County ITD restored the computer, Metric staff reconfigured the Vidos server and updated it to the latest release to allow for syncing of the Bosch AutoDome300, AutoDome500, AutoDome700, and AutoDome800 HD cameras. It is worth noting that without the upgrade, the AutoDome800 HD cameras would not sync.

Metric assured network integrity, including testing switch functionality, camera test, and the network availability of ITS devices. The current situation with Clay County network is stable and available. The Clay County TMC, Sheriff's Department, Police Department, Clay County ITD, Duvall County, and FDOT D2 TMC has the availability of necessary ITS devices like cameras, DMS, and Bluetoads.

Metric has also been tasked with the network assurance of St. John's County. The goal is to get the network ready for fiber that is being laid down I-95. This connection will allow for Saint John's County to connect to the FDOT D2 TMC. A major accomplishment that has already been completed is the clustering of Saint John's County Core Firewall/Switch/Router has been completed. The clustering entailed redundancy planning, documentation, and implementation. St. John's County has full failover on two Juniper SRX220s. The failover consists of chassis failover, trust (internal network) interface failover, and untrusty (WAN) interface failover. Future work that will be done will include VLAN design and configuration and physical infrastructure planning to accept new fiber.

9/23/2019

Certificate of Completion

Kevin R. Boston

Has Completed a Florida Department of Transportation Approved Temporary Traffic Control (TTC) Advanced (Refresher) Course.

04/30/2023	15	Michael A. Hard	50824
Date Expires	FDOT Provider #	Instructor	Certificate #

United Safety Council
1505 E. Colonial Drive
Orlando, FL 32803
unitedsafetycouncil.com
gvictor@floridasafety.org

For more information about Temporary Traffic Control (TTC) or to verify this certificate

www.motadmin.com

BidSync

Broward County Board of County Commissioners

PNC2119168P1

9/23/2019

Criminal Justice Information System
Security & Awareness Training

This is to certify that

Kevin Boston

has successfully completed the

Level 2 CJIS Security Training

This certification expires two years from the date of issuance.

January 16, 2018	**January 16, 2020**
Certification Date	Expiration Date

BidSync

Broward County Board of County Commissioners

PNC2119168P1

SEE the LIGHT
FIBER OPTIC TRAINING

CORNING

LANscape® Solutions

Corning Cable Systems recognizes

Kevin Boston

for completing the

See the Light Training Series

on Termination Technology

for **3 BICSI** Continuing Education Credits

July 22, 2011

Month Date, Year

Instructor

3 BICSI Continuing Education Credits: BICSI CECs are only issued to BICSI credential holders.

9/23/2019

CERTIFICATE

OF COMPLETION

Fiber Optic Design, Installation and Maintenance Course

This is to Certify that

Kevin Boston

has completed a four-day seminar on design, installation and maintenance of fiber optic communications systems that consisted of twelve hours of classroom instruction on physical plant, four hours on system design and sixteen hours of hands-on training. Fiber, cable, and patch panel preparation, connectorization of ST and SC connectors, splicing, OTDR and optical loss testing were accomplished in the hands-on labs.

CERTIFIED FIBER OPTIC TRAINING
LIGHT BRIGADE
CERTIFICATE OF COMPLETION

Steve Rounds
INSTRUCTOR

14051204 May 20-23, 2014
COURSE NUMBER AND COMPLETION DATE

Event Code OV–THELB–WA–0513–2; BICSI ITS CECs: 30

BidSync

Broward County Board of County Commissioners

PNC2119168P1

Fiber Optics Program
Kevin R. Boston
Is Hereby Certified as a
Fiber Optics Technician Level I
By completing all requirements and examination.

Cert #	Date	Good Thru
FO_100811	11/29/2017	11/29/2020

Traffic Signal Renewal Program
Kevin R. Boston
Is Hereby Certified as a
Traffic Signal Field Technician Level II
By completing all requirements and examination.

Cert #	Date	Good Thru
BE_100811	5/10/2017	5/10/2020

PNC2119168P1

Broward County Board of
County Commissioners

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BidSync

9/23/2019

FLORIDA DEPARTMENT OF TRANSPORTATION

Certificate of Completion

Kevin Boston

has successfully completed the FDOT District 7, 2½ day (20-hour)

INTELLIGENT TRANSPORTATION SYSTEMS
FACILITY MANAGEMENT SYSTEM
(ITSFM) Ver. 3.3
MAINTAINER TRAINING

FDOT

Awarded: July 1, 2016

SUNGUIDE®
Florida's Intelligent Transportation System

Randy Pierce

Randy Pierce, Telecommunications Administrator, FDOT

METRIC ENGINEERING

ERIC WYLLINS

ITS Integration/CV Specialist

TECHNICAL EXPERTISE

ITS CEI
Materials Testing
CCTV / DMS Installation & Testing
Fiber Optics
Networking & Integration
Lighting

YEARS OF EXPERIENCE

17 Years

CERTIFICATIONS

- IMSA Signal Level I & II
- Advanced MOT
- Final Estimates Level I
- TTMS Inspection
- CCTV Testing & Configuration
- ACI Concrete Field Testing Technician Level I
- CTQP Concrete Field Technician Level I
- CORNING – SM / MM Fiber Optic Theory, Connectorization, Splicing and Testing
- CORNING – TS LAN 200-A-CS
- Automatic Data Recorder, Peek Traffic

EDUCATION

H.S. Diploma

PROFESSIONAL PROFILE

Mr. Wyllins serves Metric providing ITS inspection services. Mr. Wyllins has over 15 years hands-on experience in construction, engineering and inspection and materials testing which include concrete inspection, lighting, electrical power service inspection, signalization, CCTV installation and testing, conduit and fiber optic cable installation and testing, microwave vehicle detection stations, dynamic message sign installation and testing, encoder and switch installation and testing, maintenance of traffic reviews, as well as daily work reports of construction preparation and pay item documentation. Eric's experience is not only limited to the role of Senior ITS Inspector; he also has served as the integration field lead on major ITS deployment projects. This multifaceted experience provides him with the insight into the role of Sr. Inspector as well as a firm understanding of the key elements required to integrate, test and turn up a major ITS deployment.

He is also leading the way in Connected Vehicles (CV)/Autonomous Vehicle (AV) technology by assisting in the design, integration, and deployment of RSU's for large scale CV/AV projects. This multifaceted experience provides him a firm understanding of the key elements required to manage, integrate, test and turn up a major ITS and CV deployments.

REPRESENTATIVE PROJECTS

Integration Specialist: Traffic Signalization Improvement Program, Broward County Public Works: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services.

Analog to Digital Migration Conversion, Broward County: The purpose of this task is to assist the County with its phase out of leased analog-style traffic signal communications circuits, converting said communications to an Ethernet over Copper (EOC) communications protocol (digital) and subsequent migration of the impacted traffic signals to the ATMS.now traffic signal operating system. The purpose of the analog circuit phase out is to provide the COUNTY with professional services for the retrofitting of the existing communications medium (analog over copper utilizing leased circuits) to an EOC medium that supports traffic signal operations on the COUNTY's ATMS.now traffic signal platform. The traffic signals operating on these leased circuits targeted for retrofitting will require conversion from the legacy UTCS operating platform to the ATMS.now operating platform. Both indoor (lab) and outdoor (field) activities are required to accomplish this objective.

Integration Specialist: I-75 On- and Off-System F.R.A.M.E, FDOT District 5: Metric was awarded this project to implement CV technology and Signal Performance Metrics (SPM) in Sumter and Marion Counties. The project will deploy Roadside Units (RSUs) for the use of Signal Phasing and Timing (SPaT), Transit Signal Priority (TSP), and pre-emption applications along I-75 portions of US 441 and US 301 and connecting arterials between I-75 and US 301 via fiber optic cable and/or wirelessly. The project is being designed and implemented using the System Manager Approach to ensure design consistency as well as seamless integration with District 2, Marion County, and City of Ocala. The final products to be submitted includes the complete design for each corridor and all signalized intersections within them, the selection of devices, integrations, testing and verification.

As part of this project, the Central Florida CV Testing Lab was created to test the CV equipment that was planned to be deployed throughout Central Florida as a part of three District 5 projects, including I-75 F.R.A.M.E. Metric staff (Mr. Wyllins included) tests all CV equipment that is proposed for the region – which includes CV interoperability technology research, testing, design and systems integration of Roadside Units (RSUs), Onboard Units (OBUs), and more.

Sr. Integration Specialist: Intelligent Transportation Systems (ITS) Engineering, Design and Procurement Support Services, San Juan Metropolitan Area: ITS GEC to assist PRHTA with the establishment of an ITS Program for the greater San Juan Metropolitan Area. Expected tasks are to include but not be limited to Systems Engineering, High-Level Design, Requirement Development and Tracking, Design/Build Criteria Package Development, and Construction Oversight and Quality Assurance for five

ERIC WYLLINS

ITS Integration/CV Specialist

phases of projects including a Traffic Management Center which will total approximately $45 Million in Construction dollars. Metric Staff is on-site to assist PRHTA's ITS Project Manager throughout the contract in various roles including program management, potential integration and construction oversight. Client: Puerto Rico Highway Transportation Authority (PRHTA)

Senior ITS/Tolling Inspector: CEI Services for Intelligent Transportation Systems (ITS) Projects - Contract No. 001158: Metric is providing support personnel to perform CEI services on an as-needed, per project basis, for various ITS construction projects in Orange County, Florida. Metric staff includes Project Administrator, Senior ITS Inspector, ITS Inspector(s), Senior Inspector, Inspector(s), and any others deemed necessary to perform the work. CEI services includes inspection, testing, management engineering verifying proper coordination of all activities are done properly or documenting significant changes to an assigned project. Client: Central Florida Expressway Authority, Budget: $2.6M, Contact: Ben Dreiling, P: (407) 690-5000.

: Integration Specialist: Intelligent Transportation System Network Administration, Maintenance and Repairs, Osceola County: Services to monitor the County's network remotely and locally, assist with device warranties (tracking and managing), monthly inventory, operational capacity, troubleshooting of fiber and devices, generation of IP addresses, utility coordination, support services for natural disasters, MOT services pertaining to maintenance, contract maintenance reports, ITS SOG's and diagnostics.

Integration Specialist: SR 9/I-95 Managed Lanes Phase II, FDOT Districts 4 & 6: This project included the design and construction of Express Lanes by converting the existing High Occupancy Vehicle (HOV) Lane into 2 Express Lanes along 13.1 miles of Interstate 95 from a point north of the SR 826 Golden Glades Interchange to a point south of the Broward Boulevard Park & Ride in both Miami-Dade and Broward Counties. The Intelligent Transportations component of this project included the design and coordination the Maintenance of Communication (MOC) plans that enables the existing system to remain in operation during the roadway construction. This required extensive field inventory, coordination with the Department and other agencies as well as an extensive evaluation of existing plans and as-builts. Additional coordination includes cross-discipline reviews, FPL, local municipalities and CSX railroad for permitting. It also includes the integration and testing of the more than 34 new CCTV cameras, 123 new MVDS, 50 new DMS and 2 Master Hub locations. These system components are divided between the existing FDOT District 6 and FDOT District 4 networks requiring coordination and integration with both agencies. Owner: FDOT Districts 4 & 6; Total Budget $112,000,000. Reference: Donovan Pessoa, PE, P: (954) 777-44426

I-275 from east of SR 60 to the Hillsborough River (Sub consultant Services to HSD), FDOT District 7: FDOT District 7 is rebuilding and widening Interstate 275 from east of State Road 60 to the Hillsborough River in downtown Tampa. This project will reconstruct all of the southbound interstate in that area, as well as northbound I-275 from east of State Road 60 to Himes Avenue. When completed, there will be four through-lanes in each direction, a flatter roadway (i.e. removal of steep humps at bridges over crossroads) to improve sight distance and decrease the chances of accidents, improved interchanges to help move traffic on and off I-275, and a wide median to decrease cost and public impact when future improvements are built. Highway Safety Devices, Inc. (HSD) will be responsible for all of the ITS device installation and maintenance services. These ITS devices installations include: arterial dynamic message signs (ADMS), mainline dynamic message signs (DMS), Highway advisory radio (HAR), HD IP CCTV, Microwave Vehicle Dynamic Sensors (MVDS) and wireless Ethernet transmission sites. Metric (as a sub consultant to HSD) will provide dressing and wiring of all LHUB cabinets. Metric is to configure, install, integrate and test all switches, routers, encoders and decoders in addition to all MVDS devices. Lastly, Metric will generate and submit for approval test plans, procedures and schedules and provide final Integration and Network Configuration Plans and Schedule.

CEI Services for Orange County ATMS Phase 2B: This LAP Project included the design and construction of ITS infrastructure and subsystem components along 39 miles of roadway in Orange County, Florida. In addition, traffic signals were upgraded from span-wire to mast-arms at five intersections. ITS infrastructure includes installation of fiber optic cable via new underground conduit and aerial attachments. ITS subsystem components included 37 new CCTV cameras, new Managed Field Ethernet Switches, new Field Hub Routers and upgraded Traffic Controllers. The project also included upgrades to the TMC through the addition of new TMC workstations, Laptops, Video Management Software and Central System Software. Owner: Orange County; Total Construction Cost $4,468,943.55. Reference: Hazem El-Assar, P.E. (Orange County Project Manager), P: (407) 836-7866

Integration Specialist: ITS Equipment Replacement in Broward County, FDOT District 4: This project involves the field replacement of Dynamic Message Signs (DMS) located along I-95/I-75/I-595 at various locations in Broward County, as well as the replacement of SMART SunGuide RTMC Control Room equipment to accommodate new technology advancements. MEI is currently integrating and testing all DMSs as well as existing ITS components at the DMS locations.

Senior ITS Inspector: Miscellaneous Fiber Project: This LAP project included the expansion of the City of Orlando's Fiber Optic Network as well as the upgrade to existing controllers at 41 controller cabinets within the City Limits. Upgrades included replacement of the existing controller and installation of new fiber optic network switches to enable communications along the new fiber optic cable installed. Owner: City of Orlando; Total Budget $642,000. Reference: Benton Bonney, PE, P: (407) 246-3626

METRIC ENGINEERING

SIMONE A. BABB, GISP

GIS/CV Specialist

TECHNICAL EXPERTISE

Application Development
Data Collection / Data Analysis
Website Development
GIS

YEARS OF EXPERIENCE

17 Years

PROFESSIONAL REGISTRATIONS

- Geographic Information Systems Professional (GISP) #43565 (2008)

SOFTWARE

- ESRI
- ArcGIS Desktop/Server
- Mobile Applications

PROGRAMMING LANGUAGES

- HTML

CERTIFICATION / TRAINING

- Advanced Temporary Traffic Control (TTC)
- FDOT Roadway Characteristics Inventory (RCI) Training Certification
- FDOT Transportation Planning
- FDOT FSUTMS/Modeling
- FDOT Project Management
- FDOT Level of Service/HCM

EDUCATION

- B.S., Civil Engineering, University of Central Florida (2012)
- A.A., Civil Engineering focus, Valencia Community College (2002)
- Computer Programming & Information Systems Technology for the Association of Computer Professionals (ACP) Program, School of Business & Computer Science (1996)
- Certificate for Advanced Level (Macro Economics, Sociology), provided by University of Cambridge, St. Augustine Senior Comprehensive School (1995)

PROFESSIONAL PROFILE

Ms. Babb has over 17 years of experience utilizing her GIS capabilities within the transportation industry. She formerly served as GIS Coordinator/Management Analyst for FDOT District 5 with responsibilities such as GIS scope development, application development, GIS and transportation planning tasks to include managing the Urban Area and Federal Functional Classification and Level of Service (LOS) update process for two decades. Ms. Babb served on the FDOT D5 Level of Service Task Team and also was an integral part of the GIS Functional Steering Committee and D5 GIS Users' Group. Ms. Babb was instrumental in the coordination and set-up of the District Five's Enterprise GIS system and the formation of the District's GIS Users' Group which involved working with the District on the development of their GIS Strategic Plan.

Overall, Ms. Babb continues to be involved in the Statewide GIS efforts and the future initiatives and is active in the GIS community, attending conferences and workshops to upkeep with technology changes and best practices in industry. She uses GIS industry practices to develop practical solutions for reporting and decision-making that is cost effective. Since joining Metric, she has assisted with several District's initiatives including website re-developments and upkeep efforts, transportation planning activities, performs GIS services, assists with various data collection and application developments, and various transportation planning activities including performing reviews/analyses for various projects.

More recently, Ms. Babb has been directly involved in the Connected Vehicle (CV) interoperability technology research, testing, design and systems integration of Roadside Units (RSU) devices and is involved in the working activities of the OmniAir Consortium involved in emerging CV and ITS technologies.

REPRESENTATIVE PROJECTS

Data Development and Mapping (GIS) Consultant, FDOT District 3: This is an ongoing task work order driven contract. Ms. Babb provides general project review and coordination on data and application development efforts. She provides technical support where necessary as it relates to GIS infrastructure and assists in the maintenance and upkeep of the District's web mapping services.

Development and Upkeep of Utilities Web Viewer, Florida International University (FIU): The Metric team has worked with FIU to inventory and geo-reference the locations of their various meters and pumps around campus. Metric assists the university by inventorying their data on a yearly basis using GPS devices. Real-time data updates are performed out on the field and is readily available on a web server. Ms. Babb manages the web application hosting service and provides technical, technology support and recommendations as needed for the advancement of the tool and asset management database. Technology deployed includes ArcSDE, ASP.NET and ArcGIS Server.

Website Development and Maintenance, FDOT District 5: Babb worked under the D5 GEC performing roles such as general planning, GIS, application development, as well as website and SharePoint development and ongoing maintenance. She also provides training to staff where needed. Under this contract, she has redeveloped and provides continuing update services to the CFLSMARTROADS.COM website. On an ongoing basis, she provides Planning and GIS services for FDOT District 5.

Districtwide Systems Planning Consultant, FDOT District 3: On-going task work order driven contract. Start Date: 3/2015; End Date: 2/2019. Reference: Ray Kirkland, 850-330-1590. As part of this contract, Ms. Babb provides ongoing GIS services related to application development and coordination and is also involved in the activities of the Statewide GIS Functional Steering Committee.

Districtwide Continuing Services - **ITS Consultant, Florida's Turnpike Enterprise** (FTE): This contract is a Continuing Services contract for ITS Design Services covering multiple areas within FTE system of toll roads. Services include the development of studies, concepts, design memorandums, and/or construction plans in relation to

SIMONE A. BABB, GISP

GIS/CV Specialist

improving the Turnpike's ITS, including any other incidental elements, including but not limited to: roadway, roadside, structures, signing and pavement markings, traffic operations, lighting, utility relocation, maintenance of traffic, cost estimates, environmental permits, environmental mitigation plans and other incidental items.

CV Readiness Study & Implementation Plan, Florida's Turnpike Enterprise: Metric has recently begun the task of conducting a CV readiness assessment for the FTE under Metric's DW Continuing Services ITS Consultant contract. With the FTE's interest in deploying CV technology on its roadway infrastructure, they have requested the assistance of the Metric staff to help them to prepare for the future of CV deployments. As a part of this task, the Metric staff will research and document the current state of CV technology within the industry and will conduct various internal hardware, software and storage needs, security and staffing proficiency assessments as well as roadway infrastructure evaluations as it pertains to the readiness of FTE to deploy CV technology. These tasks will aid in the development of a short and long-term CV Technical Implementation Plan for FTE. Metric has worked with FTE on the identification of key stakeholders and will interview and work with the various agencies to identify and document current initiatives, lessons learned, use cases, expected benefits, and more. This assessment will be conducted at a national and statewide level.

I-75 On- and Off-System F.R.A.M.E, FDOT District 5: Metric was awarded this project to implement CV technology and Signal Performance Metrics (SPM) in Sumter and Marion Counties. The project will deploy Roadside Units (RSUs) for the use of Signal Phasing and Timing (SPaT), Transit Signal Priority (TSP), and signal pre-emption applications along I-75 portions of US 441 and US 301 and connecting arterials between I-75 and US 301 via fiber optic cable and/or wirelessly. The project is being designed and implemented using the System Manager Approach to ensure design consistency as well as seamless integration with District 2, Marion County, and City of Ocala. The final products to be submitted includes the complete design for each corridor and all signalized intersections within them, the selection of devices, integrations, testing and verification.

As part of this project, the Central Florida CV Testing Lab was created to test the CV equipment that was planned to be deployed throughout Central Florida as a part of three District 5 projects, including I-75 FRAME. Metric staff (Ms. Babb included) tests all CV equipment that is proposed for the region – which includes CV interoperability technology research, testing, design and systems integration of Roadside Units (RSUs), Onboard Units (OBUs), mobile devices, and more.

General Engineering Consultant (GEC), FDOT District 5: Metric serves as a subconsultant to HNTB Corporation on this five-year continuing services contract to assist with ITS Project Management duties including plans review, construction coordination, Systems Engineering Analysis (SEA) document reviews, and architecture maintenance. Metric also provides staff such as: Senior Network Security Administrator, Senior Systems Administrator, GIS Specialist/Web Developer, and an ITS Project Manager. Mrs. Babb serves Metric's Web Developer assisting with the District 5 CFLSMARTROADS.com website re-development and ongoing maintenance, including the development of their SharePoint portal. She also provides GIS support to FDOT District 5's Planning group by providing report development, data collection and research services for PD&E related projects as well as organizing data into a GIS platform.

TIM Team Facilitation and Technical Assistance, FDOT District 1: Metric assists transportation incident response and public safety agencies with sustaining and further developing the District 1 Traffic Incident Management Teams (Sarasota-Manatee, Collier-Lee-Charlotte, and Polk Counties). There are three (3) TIM Team meeting groups. This assistance is rendered through a combination of TIM Team-building meetings and outreach. *Ms. Babb assists with the District 1 TIM website upkeep and maintenance.*

Road Safety Audit (RSA) & Safety Studies & Operational Studies Contract, FDOT District 2: This project includes conducting Road Safety Audits (RSA) and their corresponding follow-up safety studies as well as operational studies. The RSAs, analysis and recommendations produced are then used in the development of safety recommendations targeting the emphasis areas of the Florida Strategic Highway Safety Plan (FL-SHSP). Additional tasks include resolving complaints or requests received from concerned citizens, review fatal crashes, monitoring safety in specific work-zones, update and maintain the Department's Skid Hazard Reporting System, develop and utilize GIS based tools to identify locations with targeted crash patterns, perform Highway Safety Manual (HSM) analysis, and public involvement. *Ms. Babb reviews and analyzes District 2 intersection crashes (signalized and stop controlled with defined criteria).*

PREVIOUS WORK EXPERIENCE

02/2015 – 08/2016: Project Manager: VHB, Inc. – After GMB Engineers & Planners, Inc., was acquired by VHB in February of 2015, Ms. Babb performed the same duties as she did before the acquisition. Additionally, she served as a Consultant Project Manager for the FDOT Off-Hours Freight Delivery pilot project awarded by FHWA. Duties included report development, managing scope, budget, schedules, quality control, deliverables, and a team of diversified professionals. Conducted research for effective planning and project delivery.

11/2005 – 02/2015: GIS Director: GMB Engineers & Planners, Inc.

10/2002 – 11/2005: GIS Coordinator/Management Analyst: Florida Department of Transportation District 5

05/2001 – 10/2002: Transportation Planner/GIS Analyst: Kimley-Horn & Associates, Inc.

08/1999 – 05/2001: Transportation Planner/GIS Analyst: MetroPlan Orlando

This certifies that

Simone A. Babb

has met the standards for ethical conduct and professional practice as established by the GIS Certification Institute for recognition as a

Certified Geographic Information Systems (GIS) Professional (GISP)

and is therefore entitled to all the rights and privileges thereunder.

This grant of certification shall expire or be deemed inactive on 9/25/2021 unless, by that date, the individual shall have successfully completed recertification.

Certification Number 43565 Date of Initial Certification 9/25/2008

Martin Roche

Martin Roche, GISP
GISCI President

Bill Hodge, GISP
GISCI Executive Director

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County Attorney's Office
9/23/2019

9/23/2019
Broward County Board of County Commissioners
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Certificate of Completion

Simone A. Babb

Has Completed a Florida Department of Transportation Approved Temporary Traffic Control (TTC) Advanced Course.

12/13/2022	15	Bhushan Sukhram	46167
Date Expires	FDOT Provider #	Instructor	Certificate #

United Safety Council
1505 E. Colonial Drive
Orlando, FL 32803
unitedsafetycouncil.com
gvictor@floridasafety.org

For more information about Temporary Traffic Control (TTC) or to verify this certificate

www.motadmin.com

METRIC ENGINEERING

BRIAN FULLER, PE

Civil /Roadway Design LEAD; Utility Coordinator

TECHNICAL EXPERTISE

Highway Design
Maintenance of Traffic
QC/Constructability
Utility Coordination

YEARS OF EXPERIENCE

28 Years

PROFESSIONAL REGISTRATIONS

Professional Engineer – FL#49524

CERTIFICATIONS

FDOT Traffic Control Plan Design Training
FDOT Bicycle Facilities Design Course

EDUCATION

B.S., Civil Engineering, University of Florida (1990)

PROFESSIONAL PROFILE

Mr. Fuller has served Metric Engineering as a Project Manager and Senior Highway Engineer since 1996 and has a strong background in all aspects of roadway design. Mr. Fuller was employed by the FDOT for 5 years as a Roadway Project Design Engineer. He is responsible for the complete assembly of roadway construction plans on complex, major, and minor projects. His experience includes roadway design, traffic control design, utility coordination, and quality computations. Recent experience includes numerous CTSP contracts, minor and miscellaneous designs – some of which include Safe Routes to School (SRTS) and sidewalk design. His recent responsibility is to maintain project schedules and budgets without compromising safety, environmental concerns, constructability, or Federal and State standards and policies. .

REPRESENTATIVE PROJECTS

Project Engineer: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Project Engineer: Traffic Signalization Improvement Program, Broward County: Prime consultant responsible for providing professional engineering consulting services to assist in the conceptual planning of the County's Traffic Signalization and Signal Engineering Improvement (SEI), implementation of a data management and tracking system for installed fiber optic cables, assistance in improving the signal timing strategy and its integration with the County's traffic communication network, design criteria and consistency review services resulting from the conceptual planning, and construction management services. Metric led a task as part of a State Energy Program (SEP) grant to develop and implement updated signal timing plans for 110 signals with Naztec controllers on four separate corridors in Broward County, Florida. The work included data collection, establishment of appropriate models, and development of controller settings, implementation and fine-tuning of those settings in the field. Ultimately, travel times were reduced by up to 50% along all of the corridors. *Reference: Michael S. Cleary, PE, 954-357-5838*

Project Manager: Traffic Operations Minor Design Consultant, FDOT District 1: This task work order based contract includes several minor design projects in various District 1 counties. The scope of the work orders includes Sidewalks (Safe Routes to School Program), Turn Lanes, Signal Upgrades, and Lighted Overhead Signing structures at various interchanges along Interstate 75 within the L/A Right-of-Way. Metric has coordinated closely with both FDOT staff and local maintaining agency staff regarding design preferences and is currently performing post design services on the projects that are now under construction.

Project Manager: Districtwide Miscellaneous Safety Design, FDOT District 2: Metric is responsible for the design and preparation of a complete set of construction contract documents (specifications packages, etc.) and any incidental engineering services, as necessary, for improvements to various roadway transportation facilities. Services included roadway design (typical sections, plan/profiles, cross slopes, access management, etc.), Traffic Control Plan (TCP), drainage design, utility coordination, environmental/permitting, miscellaneous structures, S&PM, signalization, lighting, survey / SUE, and geotechnical.

Project Manager/Engineer of Record: SR 329 (Main Street) Reconstruction in Alachua County, FDOT District 2: This project consisted of the reconstruction of Depot Avenue to NW 8th Avenue, approximately 1.06 miles. The project also included the replacement of storm drain system from University Avenue to South Depot Avenue. Roadway design is for an urban three-lane undivided including center two-way left turn lanes with 5' bike lane and parking on each side. Additional project elements included a closed system drainage design, replacement of strain poles and mast arms with new mast arms at 10 intersections, traffic signal pole modifications at 8 intersections, design survey and subsurface utility services.

Project Manager: US 1 at Ray Road (St. Johns County, Florida), FDOT District 2: Metric has a continuing services contract with FDOT District 2 for Minor Safety Design Services. As a task work order under this contract, Metric provided professional services for the development of a conceptual layout, a preliminary cost estimate, and a technical report for the installation of a traffic signal at the

BRIAN FULLER, PE

Civil/Roadway Design LEAD; Utility Coordinator

intersection of SR 5 / US 1 and Ray Road. The conceptual layout accounts for a proposed signalized intersection taking into considerations the results of field review, right-of-way documents, prior surveys, and railroad agreements. To assist in developing a preliminary cost estimate, Metric coordinated with the District's Traffic Operations to determine signalization preferences and coordinated with St. Johns County to ensure the signal design accommodates the County's future plans for the future widening of Ray Road. The final technical report summarizes the data collected, existing and proposed analysis, and proposed improvements including the concept layout, Long Range Estimate (LRE), right-of-way costs, and potential utility impacts.

Project Manager: Community Traffic Safety Program (CTSP) – Three Contracts, FDOT District 5: Task Work Order based Districtwide contract comprised of miscellaneous engineering services required to conduct studies and/or to design and prepare a set of contract plans which may include roadway, signing and pavement markings, signalization, lighting, sidewalk and/or bicycle ways along the transportation corridor that includes State highways, County streets, and City streets.

Project Engineer: Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2001 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

Districtwide Miscellaneous Design & Construction Inspection (PUSHBUTTON) (Design), FDOT District 5: Miscellaneous design projects to be constructed with the Pushbutton Contractors. These projects provide a means of quick response for resolving unexpected problems concerning signalization, signing and pavement markings, and pavement widening. All designs must conform to the pushbutton pre-bid contracts meeting its specifications and requirements.

Project Manager: Districtwide Miscellaneous Design Contracts Nos. 28, 34, 36, 53 & 76, 95, FDOT District 5: Preparation of final design plans for minor roadway improvement projects including milling and resurfacing, intersection improvements, traffic signal improvements, and safety upgrades. Design services for this series of miscellaneous design contracts began in 1996.

Utility Coordinator: ITS Communication System: I-75 (SR 93) from North of US 27 to Alachua County Line, FDOT District 5: ITS elements including 24 Closed Circuit Television Cameras (CCTV Cameras) and 44 Microwave Vehicle Detector Stations (MVDS) are being designed on I-75(SR 93) From North of US 27 to the Alachua County Line. New fiber optic cable will also be installed and integrated into existing Fiber Optic Cable and shall be used for network communication to all devices. These devices are being incorporated into the existing network for control through the Regional Traffic Management Center (RTMC) in Orlando. The Design includes the integration to the existing network and communication scheme of the District 5 SunGuide system. Metric is also responsible for communicating with FL Turnpike and the City of Ocala with any technical coordination. *Mr. Fuller performed utility coordination.*

Utility Coordinator: I-75 On- and Off-**System F.R.A.M.E. (Florida's Regi**onal Advanced Mobility Elements), FDOT District 5: Metric represents the FDOT District 5 ITS as the Systems Manager for this I-75 F.R.A.M.E. project which assists in the advancement of the Multimodal Integrated Corridor Management (MMICM) plan. As the Systems Manager, Metric is responsible for coordinating, testing and providing documentation on the various technologies to include Roadside Units (RSUs), vehicular On-board Units (OBUs) as well as emulated OBUs (mobile devices and/or tablets) to ensure device interoperability. This project is in line with the USDOT goals and will contribute to increased safety, reliability and mobility needs using advanced CV technologies. Metric staff is responsible for designing and integrating these devices to multiple signal controllers with the goal of verifying the various CV-related applications: Signal Phase & Timing (SPaT), Automated Traffic Signal Performance Measures (ATSPM), MAP messages, Traveler Information Messages (TIM), Basic Safety Messages (BSM), Emergency Vehicle Protocol (EVP), Transit Signal Priority (TSP) and others related to pedestrian safety. Metric staff has conducted extensive testing in both the lab and field environments with equipment provided by several CV vendors. As a result of the testing, reports were generated to guide the System Manager in their decision-making process for the development of the CV specifications and eventual decision-making on the F.R.A.M.E., SR 434, and PedSafe projects and any other future CV deployments. Metric is also responsible for configuring, integrating and testing all CV devices into the FDOT ITS network. *Mr. Fuller performed utility coordination and designed the Maintenance of Traffic (MOT).*

Project Manager: Continuing Services for Design of Minor Projects with Construction Costs Less Than $2,000,000, Seminole County: Task work orders under this contract are limited by construction costs of $2,000,000 or study costs of $100,000. Services include construction plans preparation, environmental, drainage permitting as well as preliminary and final design phases. Projects include but are not limited to: roadway reconstruction, roadway traffic safety projects, sidewalk and bicycle/pedestrian improvements, intersection improvements, stormwater/water quality improvements, stormwater basin studies, traffic signal designs, traffic studies, preliminary engineering studies, ITS services, peer reviews and any miscellaneous design support services.

Ron DeSantis, Governor

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FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

FULLER, CHARLES BRIAN

307 CUMBERLAND ROAD
DELAND FL 32724

LICENSE NUMBER: PE49524

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METRIC ENGINEERING

REJA E. RABBI, PE

Roadway Engineer

TECHNICAL EXPERTISE

S&PM Design
MicroStation FDOT SS4
FDM, TEM & LRE
Greenbook
MUTCD

YEARS OF EXPERIENCE

9 Years

PROFESSIONAL REGISTRATIONS

Professional Engineer- FL #84637

EDUCATION

- M.S., Structural Engineering, Cardiff University (2010)
- B.S., Civil Engineering, Bangladesh University of Engineering & Technology (2007)

PROFESSIONAL PROFILE

Mr. Rabbi currently serves as a Senior Project Engineer and is experienced in a wide variety of engineering areas. He has significant project experience and is skilled in MicroStation - FDOT SS4, Corridor/3D Roadway Design, Geopak, S&PM Design, Signalization Design ERC, Scheduling FDOT Specification Package and CITS.

REPRESENTATIVE PROJECTS

CR 510 Reconstruction, FDOT District 4: This project involves the design for the 4-laning of C.R. 510, from 1000 feet west of 82nd St. to 58th Ave., in Indian River County. The existing corridor will be reconstructed by raising the vertical profile of the two bridges requiring replacement (Bridge 880063 over lateral C canal and Bridge 880044 over lateral L canal and the existing culvert over the South Prong Preserve Slough.) There are two distinct roadway typical sections within this segment: a suburban typical and an urban typical. The project also requires the design of a roundabout at 66th Avenue and signalized intersections at 82nd Avenue, Powerline Road, and 58th Avenue. CR 512 currently serves as the main artery in northern Indian River County connecting I-95 to US 1 and A1A.

SR 5/US-1/S. Dixie Highway from Riviera Dr. to SW 27 Avenue, Miami-Dade County, FDOT District 6: The purpose of this project is design roadway improvements which include: mill and resurface the existing pavement; upgrade signing and pavement markings to meet current MUTCD, TEM, and FDOT standards; upgrade pedestrian ramps and detectable warning devices to meet standards; adjust existing utility manholes and valves; upgrade pedestrian signals; check mast arm offsets and vertical clearance deficiencies; and re-install vehicle sensor loops to extend the service life of the existing highway and enhance safety.

Districtwide Miscellaneous PE Design Consultant, FDOT District 6: This task work order based contract includes several minor design projects in Miami-Dade County. The scope of work included milling and resurfacing (both Pavement Only Projects and Resurfacing, Restoration and Rehabilitation projects), ADA upgrades, signalization, and signing and pavement marking. Metric staff worked closely with FDOT as well as government officials from the affected municipalities. Public involvement was most extensive on our Miami Beach project as the intersection improvements affected several existing on-street parking spaces.

Alton Road from Michigan Avenue to 43rd Street, (Miami Dade County), FDOT District 6: Resurface, Restoration and Rehabilitation (RRR), widening to provide paved shoulders, and upgrades to signing and pavement markings and signals. 1.42 miles.

I-395 / SR 836 / I-95 Reconstruction Design-Build, FDOT District 6: Project efforts are just beginning on this $802 million Design-Build project, which involves three projects that will be constructed concurrently by the Archer Western-de Moya (AW- dMG) Joint Venture (JV) to minimize impacts to the public. Metric serves as a major design team member for structural, ITS, signals, roadway and drainage elements.

SR 821 Homestead Extension of Florida's Turnpike (HEFT) from US-1 to SR 874, Florida's Turnpike Enterprise, Miami-Dade County, FL (Sub to URS): Post Design Work for this for the widening of the HEFT from SW 216th Street to north of SW 184th Street. Responsible for geometric and drainage designs for the widening of the HEFT. Additional duties included the preparation of Bridge Hydraulic Reports at two South Florida Water Management District (SFWMD) canals, specifically, the C-1N and the C-100 canal crossings.

I-75 at NW 49th PD&E Study from NW 49th St. to NE 35th St., (Marion County), FDOT District 5: Project Development and Environment (PD&E) Studies (CAT EX Type II) will evaluate a new interchange in Marion County to provide relief to the adjacent interchanges experiencing congestion and operational deficiencies. An alternate access to I- 75 will also address the projected increase in truck volumes resulting from build-out of the commerce district. The proposed interchange is needed to support the economic viability of the Ocala-Marion County Commerce Park, improve Interstate and regional mobility and accommodate future traffic growth. Tasks include preparation of an MLOU, IJR re-evaluation and NEPA Documentation.

PRIOR EXPERIENCE

04/2015 – 12/2018: Lead Roadway Design Engineer: Caltran Engineering Group, Inc. (Miami, FL): As the Lead Roadway Design Engineer, Mr. Rabbi was responsible for various Roadway, S&PM and Signalization Designs including Post Design services. Tasks includes the creation of Plans Production, Design Variations, and Project Reports. He also prepared Progress Reports and Invoices related to projects and supervised junior engineers. In addition, his role included Project Management, Scheduling, and Project Coordination. He assisted with business development efforts such as writing Letter of Responses (Shortlisted many times and won

REJA RABBI, PE

Roadway Engineer

three (3) projects), participated in Project Interview/ Q&A (Districts 4 and 6 as well as Florida's Turnpike Enterprise) and helped prepare Staff Hours and Negotiations.

- Commodore Drive from SR 84 to NW 8th Street Sidewalk Project (City of Plantation), FDOT District 4: This was a mobility project located in the City of Plantation. It was one of the 2015 Broward MPO priority projects. Scope of work included the removal of an existing 4' concrete sidewalk to construct a new 5' wide sidewalk from NW 8th Street and SR 84, and installation of ADA curb ramps at all intersections within the limits of projects. Therefore, roadway, TCP and S&PM were the key components. Client: FDOT District 4, Contact: Auraliz Benitez, P.E
- SW 336 Street/Davis Parkway reconstruction (Krome Avenue Truck Bypass) from west of SR 997/Krome Avenue to SR 5/US-1, FDOT District 6: Served as a lead roadway designer responsible for the reconstruction project. He also assisted with project management tasks such as schedule update, invoice, and coordination among sub-consultants. Scope of this project includes roadway reconstruction/widening, milling and resurfacing for truck bypass. In addition, new sidewalk and ADA features are also included in the project. Other scope of services includes roadway design, drainage system design, temporary traffic control (TTC) design, signing and pavement marking improvement, signalization design and lighting design.
- SR5/US1 from east of SW 27 Ave to SR-9A/I-95, FDOT District 6: Served as a lead roadway designer and responsible for the roadway design consisting of pavement rehabilitation, pavement reconstruction, ADA improvements, access modifications and shared use path improvements. He also assisted in project management which includes schedule update, invoice to FDOT, coordination among sub-consultants and supervising the design team were also within his responsibilities.
- SR5/US1 Transit improvements from the Miami-Dade County Line to SR842/Broward Boulevard, FDOT District 4: Served as a lead Roadway Designer responsible for the design efforts of RRR improvements consisting of bus shelters at 16 specific locations and transit signal priority implementation at 18 intersections. Proposed corridor improvements impact 4 different cities (Hallandale Beach, Hollywood, Dania Beach, and Fort Lauderdale) requiring extensive design coordination and a robust public involvement approach.
- SR 826 / Palmetto Expressway Ramps and Frontage Road project from west of NW 67 Avenue to NW 57 Avenue, FDOT District 6: Served as a lead designer responsible for signing and pavement marking on ramps and frontage road. CALTRAN is a sub-consultant for this project and the scope of services includes Roadway design, Drainage system design, TTC Design, Singing and Pavement Marking improvements, Signalization design and lighting design. The length of the project is 1.231 miles.
- MOT Design of Miami Dade County WASD of Ocean Outfall Legislation Program- Phase I Project SL-1B.1-66 in Transmission Force Main along SW 216th Street, Miami Dade County: Lead roadway designer responsible for detailed TTC design for the 66-inch force main installation project.
- AMLI Midtown Development, Signalization Design at Peters Road and SW 80 Terrace Intersection, City of Plantation: Served as a design engineer for the Signalization improvement project. Major responsibilities included signalization plan design, cost estimate coordination and post design services.
- Temporary Traffic Control (TTC) for Special Events at HARD ROCK STADIUM, Miami Gardens: Lead designer for MOT Plans for all special events at the Hard Rock Stadium which included TTC on Turnpike, I-95 and Don Shula Expressway. He was also responsible for the plans production, permits coordination from Turnpike and FDOT and post design services.

09/2013 – 04/2015: Project Engineer: HBC Engineering Company (Miami, FL): As a Project Engineer, Mr. Rabbi was responsible for various Roadway, Drainage, S&PM and Signalization Designs. Tasks includes the creation of Plans Production, Design Variations, and Project Reports. He also preformed Construction Inspection, prepared Progress Reports and Invoices related to projects, and supervised junior engineers.

- SR-858/Hallandale Beach Blvd from east of SR-7 To West of Lakeshore Drive, FDOT District 4: Served as a project engineer for this RRR project. Responsibilities included utility coordination, drainage plans preparation and roadway design. Major factors in this project included roadway design, traffic control plan, design variation, LRE, progress report, preparing submittal packages using PEDDS, coordinating with the utility agencies and coordinating with sub consultants.
- SR-845/Powerline Road from North of NW 19th Street to NW 29th Street, FDOT District 4: Served as a project engineer for this RRR project. Responsibilities included utility coordination, drainage plans preparation and roadway design. Additionally, he was responsible for roadway design, traffic control plan, design variation, LRE, progress report, preparing submittal package using PEDDS, coordinating with the utility agencies and coordinating with sub consultants.

Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

RABBI, REJA E.

4428 SW 163RD COURT
MIAMI FL 33185

LICENSE NUMBER: PE84637

EXPIRATION DATE: FEBRUARY 28, 2021

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Broward County Board of County Commissioners

PNC2119168P1

METRIC ENGINEERING

HAROLD MCKNIGHT

Utility Coordinator

TECHNICAL EXPERTISE

Roadway Design
Utility Coordination
Drainage Design

YEARS OF EXPERIENCE

24 Years

EDUCATION

B.S., Engineering Technology, University of Central Florida (1991)

PROFESSIONAL PROFILE

Mr. McKnight has served Metric Engineering as a Highway Designer on complex, major, and minor highway projects since 1999. His experience includes the design and preparation of roadway plan/profiles, cross-sections, drainage structure sheets, traffic control plans, and quantity computations. Mr. McKnight is proficient in the use of MicroStation and GEOPAK. He also manages the majority of the utility coordination for Metric's Central Florida office.

REPRESENTATIVE PROJECTS

Community Traffic Safety Program (CTSP) (Three contracts), FDOT District 5: Task Work Order based Districtwide contract comprised of miscellaneous engineering services required to conduct studies and/or to design and prepare a set of contract plans which may include roadway, signing and pavement markings, signalization, lighting, sidewalk and/or bicycle ways along the transportation corridor that includes State highways, County streets, and City streets. *Project Type: Continuing Services, Project Size: $500K (Budget), Role on Project: Utility Coordination*

Continuing Professional Civil Engineering and Design Services Contract, Y0-905A and Y4-904A - Orange County: Final design and plan preparation for traffic signal, minor roadway improvement, traffic calming and paving and grading projects throughout Orange County.

Continuing Services for Design of Minor Projects with Construction Costs Less Than $2,000,000, Seminole County: Task work orders under this contract are limited by construction costs of $2,000,000 or study costs of $100,000. Services include construction plans preparation, environmental, drainage permitting as well as preliminary and final design phases. Projects include but are not limited to: roadway reconstruction, roadway traffic safety projects, sidewalk and bicycle/pedestrian improvements, intersection improvements, stormwater/water quality improvements, stormwater basin studies, traffic signal designs, traffic studies, preliminary engineering studies, ITS services, peer reviews and any miscellaneous design support services. It should be noted that Metric held this contract a few years ago where the tasks included: final design and plans preparation for minor intersection improvement, drainage improvements, and sidewalk projects throughout Seminole County. Some of those projects included: Willingham Road, Slavia Road, Celery Avenue, Line Drive, and Richmond Avenue. Project work effort included the preparation of board-mounted plan sheet graphics for and participation in public information meetings. *Project Type: Continuing Services Improvements, Project Size: $307K (Budget), Role on Project: Utility Coordination*

Continuing Services for Traffic Analysis & Design Contract 03Q-043, Marion County, FL: Preparation of final design plans for minor roadway improvement projects including milling and resurfacing, intersection improvements, traffic signal improvements and safety upgrades.

Districtwide Miscellaneous Design & Construction Inspection (PUSHBUTTON) (Design), FDOT District 5: Miscellaneous design projects to be constructed with the Pushbutton Contractors. These projects provide a means of quick response for resolving unexpected problems concerning signalization, signing and pavement markings, and pavement widening. All designs must conform to the pushbutton pre-bid contracts meeting its specifications and requirements.

Districtwide Miscellaneous Design Contracts Nos. 28, 34, 36, 53, 76, & 95, FDOT District 5: Preparation of final design plans for minor roadway improvement projects including milling and resurfacing, intersection improvements, traffic signal improvements, and safety upgrades. Design services for this series of miscellaneous design contracts began in 1996. *Project Type: Continuing Services Improvements, Project Size: $1M (Budget), Role on Project: Utility Coordination*

Eden Park Road, Seminole County: Completed Preliminary Engineering Study and prepared Final Design Plans for the construction of a 2-lane divided and 3-lane undivided urban roadway between Maitland Avenue and Bunnell Road, a distance of approximately 1 mile. Work efforts included roadway plans, drainage design and permitting for 1 retention pond and 1 exfiltration system, design survey and R/W mapping, signing and pavement marking plans, traffic signal plans, the design and permitting of a water line, and utility coordination and utility adjustments. Assisted the County through participation in 2 public information meetings and a public hearing. Prepared aerial-based graphics and a powerpoint presentation.

Engineering Services for Minor Roadway & MSBU Design Projects - Seminole County: Final design and plans preparation for minor intersection improvement, drainage improvement, and sidewalk projects throughout Seminole County.

Florida's Turnpike (SR 91)/Commercial Boulevard Interchange, Florida's Turnpike Enterprise: Final design of improvements to an existing substandard trumpet interchange serving a highly congested major arterial facility. Improvements included the addition of a new ramp with a SunPass-only toll facility and the extension and widening of an existing off-ramp. *Project Type: Intersection Improvements, Project Size: $2.1M (Construction Cost), Role on Project: Utility Coordination*

HAROLD MCKNIGHT

Utility Coordinator

FTE Toll System Refresh, Florida's Turnpike Enterprise: This project will replace the existing Toll Collection System for the Florida Turnpike Enterprise. The replacement system consists of IDRIS loops, transponders, Open Road Tolling, Automatic Cash Machines, Manual Cash Lanes, Violation Enforcement and Security components.

I-4 Six-Laning, FDOT District 5: Final design for 4.6 miles of the 6-laning (inside widening) of a 4-lane Interstate facility from south of the Saxon Boulevard Interchange to north of the SR 472 Interchange in Volusia County. Plans also provided for the replacement of the Graves Avenue Bridge over I-4, mainline profile revisions to prevent flooding and to attain adequate vertical clearance, the reconstruction and/or milling and resurfacing of 7 interchange ramps and a collector-distributor road, 2 sound walls, and proprietary retaining walls.

Utility Coordinator/Roadway Designer: I-75 On- and Off-**System F.R.A.M.E. (Florida's Regional Advanced Mobility Elements),** FDOT District 5: Metric represents the FDOT District 5 ITS as the Systems Manager for this I-75 F.R.A.M.E. project which assists in the advancement of the Multimodal Integrated Corridor Management (MMICM) plan. As the Systems Manager, Metric is responsible for coordinating, testing and providing documentation on the various technologies to include Roadside Units (RSUs), vehicular On-board Units (OBUs) as well as emulated OBUs (mobile devices and/or tablets) to ensure device interoperability. This project is in line with the USDOT goals and will contribute to increased safety, reliability and mobility needs using advanced CV technologies. Metric staff is responsible for designing and integrating these devices to multiple signal controllers with the goal of verifying the various CV-related applications: Signal Phase & Timing (SPaT), Automated Traffic Signal Performance Measures (ATSPM), MAP messages, Traveler Information Messages (TIM), Basic Safety Messages (BSM), Emergency Vehicle Protocol (EVP), Transit Signal Priority (TSP) and others related to pedestrian safety. Metric staff has conducted extensive testing in both the lab and field environments with equipment provided by several CV vendors. As a result of the testing, reports were generated to guide the System Manager in their decision-making process for the development of the CV specifications and eventual decision-making on the F.R.A.M.E., SR 434, and PedSafe projects and any other future CV deployments. Metric is also responsible for configuring, integrating and testing all CV devices into the FDOT ITS network. *Mr. McKnight performed utility coordination and designed the Maintenance of Traffic (MOT).*

Utility Coordinator: Traffic Operations Minor Design Consultant, FDOT District 1: This task work order based contract includes several minor design projects in various District 1 counties. The scope of the work orders includes Sidewalks (Safe Routes to School Program), Turn Lanes, Signal Upgrades, and Lighted Overhead Signing structures at various interchanges along Interstate 75 within the L/A Right-of-Way. Metric has coordinated closely with both FDOT staff and local maintaining agency staff regarding design preferences and is currently performing post design services on the projects that are now under construction.

Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2001 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

Central Florida **Intelligent Transportation System, Florida's Turnpike Enterprise:** This project included the installation of a 96 SM fiber backbone along with 45 CCTV's, 180 VDS, 11 half-span DMS, and 2 HAR's along the Bee Line Expressway (SR 528), Seminole Expressway (SR 417), Southern Connector (SR 417) and the Western Beltway (SR 429). The overall ITS system ties into both the Pompano Beach and Turkey Lake TMC's for command and control. *Mr. McKnight provided roadway support for this project.*

Design & Support Services for the Development of Congestion Management Lanes & Dynamic Toll System Highways PR-18, PR-30 & PR-52 (Puerto Rico Highways and Transportation Authority (PRHTA): As a part of this project, Metric is developing transportation studies and documentation needed for the financial decisions of PRHTA for the development of the congestion management lanes – these studies include Traffic Impact Studies, Revenue forecasting, Time of Day Tariff Recommendations and Tolling Point Strategy and Recommendations. Metric is leading the environmental NEPA process which includes public involvement tasks, Value Engineering Analysis, permitting and more. And finally, the design services for the Congestion Management Lanes include plans for PR-52, PR-30 and PR-18. Tasks involve the design of ITS elements (CCTV, DMS, MVDS and more), signing for the lanes, roadway, drainage systems, Maintenance of Traffic and electrical system evaluations. Specifically, for PR-30, the design includes these elements plus the conceptual and preliminary layout for reversible lane operations.

ITS Communication System: I-75 (SR 93) from North of US 27 to Alachua County Line, FDOT District 5: ITS elements including 24 Closed Circuit Television Cameras (CCTV Cameras) and 44 Microwave Vehicle Detector Stations (MVDS) are being designed on I-75(SR 93) From North of US 27 to the Alachua County Line. New fiber optic cable will also be installed and integrated into existing Fiber Optic Cable and shall be used for network communication to all devices. These devices are being incorporated into the existing network for control through the Regional Traffic Management Center (RTMC) in Orlando. The Design includes the integration to the existing network and communication scheme of the District 5 SunGuide system. Metric is also responsible for communicating with FL Turnpike and the City of Ocala with any technical coordination. *Mr. McKnight assisted with utility coordination.*

METRIC ENGINEERING

MICHAEL HOLT, PE

Drainage Manager

TECHNICAL EXPERTISE

Project Management
Drainage Design
Stormwater Management
Permitting
Utility Coordination
QA/QC
Post Design Support

YEARS OF EXPERIENCE

12 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #76111 (05/2013)

SOFTWARE SKILLS

- AutoCAD
- MicroStation
- GeoPak Drainage
- ASAD
- MacStorm
- ArcGIS 9.1
- XPSWMM 10.6
- ICPR
- HCSWMM
- HY-8
- Ponds 3.3
- Culvert Service Life Estimator

PROFESSIONAL SOCIETIES

- American Society of Civil Engineers
- Society of American Military Engineers

EDUCATION

- B.S., Civil Engineering University of South Florida (2008)

PROFESSIONAL PROFILE

Mr. Holt recently joined Metric and serves as Drainage Department Manager, having worked as the Discipline Lead and/or Engineer of Record for various drainage tasks throughout his career. His group specializes in drainage design, providing stormwater management design and permitting support for other disciplines, as well as serving various FDOT Districts, municipalities, and private clients. Project experience includes drainage design for stormwater retrofits to resolve localized flooding, RRR roadway projects, highway reconstruction projects, and interstate/interchange design/construction in both the Design-Bid-Build and Design-Build models. Mr. Holt is proficient with MicroStation, AutoCAD, and GIS, as well as multiple stormwater modeling programs, including adICPR, Ponds, MacStorm, ASAD, XPSWMM, and HCSWMM.

REPRESENTATIVE PROJECTS

SR 29 from I-75 to Oil Well Road PD&E Study (Collier County), FDOT District 1: Ongoing study for the potential 10-mile widening and reconstruction of SR 29 to four lanes. SR 29 is a Tier 1 Regional Freight Corridor - truck percentage on this segment has consistently been around 25% since 2001. SR 29 is also classified as an Emerging Strategic Intermodal System (ESIS) corridor serving fast-growing economic regions and Rural Areas of Critical Economic Concern. Conservation lands border both sides of the roadway, with the Florida Panther National Wildlife Refuge on the east and the Big Cypress Natural Preserve on the west. The project began with a feasibility study which established project purpose and need. Environmental constraints include conservation lands, the parallel Barron River Canal, OFWs, panther primary zone, caracara presence, Section 4(f) resources and wetlands. A Summary Degree of Effect of Dispute Resolution was assigned to the project in ETDM by USFWS for special designations and wildlife habitat. The National Park Service is a cooperating agency. An EAG was formed.

SR 189 from North of SR 4 to Alabama State Line, Okaloosa County, FDOT District 3 (Sub to Fisher Arnold): The is a resurfacing, rehabilitation and restoration project including adding additional turn lanes, guardrail modifications, cross slope modifications, improving pedestrian and vehicular access, utility coordination, and signing and pavement markings. This project has an open drainage system and drainage improvements include mitered end sections, inlet repairs, adjusting stormwater manholes, and side drain repairs. *Metric's role includes drainage design and utility coordination.*

SR 87A New Connector from CR 191 (Munson Highway) to SR 87N in Santa Rosa County, FDOT District 3: This project involves the design of a new alignment involving a rural two-lane facility and a four-lane divided suburban section. The new alignment involves a bridge crossing at Clear Creek. There are new stormwater pond facilities for treatment and open and closed drainage systems throughout SR 87A. Signalized intersections will be designed on SR 87A at Munson Highway and SR 87N. *Role: Drainage Engineer*

SR 500 (US 441) Widening & Reconstruction, FDOT District 5: Reconstruction of 4.1 miles of SR 500 from a four-lane rural roadway to a six-lane divided urban arterial from Lake Ella Drive to Avenida Central in Lake County. Final plans were prepared for the construction of a curb and gutter roadway with bicycle lanes and a raised median within an existing 100'-200' right-of-way corridor. Work efforts included roadway plans, drainage design and permitting for four retention ponds, the removal of the existing bridge over CR 25, design survey and right-of-way mapping, signing & pavement marking plans, traffic control plans, utility coordination and the preparation of adjustments, and the design of five signalized intersections. This project was shelved in 2014, and in May of 2018, our team was asked to moved forward with the re-design. This project will be delivered using 3D design. *Role: Drainage Engineer*

I-395 / SR 836 / I-95 Reconstruction Design-Build, FDOT District 6: Project efforts are just beginning on this $802 million Design-Build project which involves three projects that will be constructed concurrently by the Archer Western-de Moya (AW- dMG) Joint Venture (JV) to minimize impacts to the public. Metric serves as a major design team member for structures, ITS, signals, roadway and drainage elements. *Role: Drainage QA/QC; Drainage Engineer*

I-95 Concrete Replacement Project: The limits for the improvements on I-95 are from NW 8 Street to NW 29 Street and include the total replacement of the concrete pavement for both the northbound and southbound travel lanes. The AW-dMG team has also added a

MICHAEL HOLT, PE

Drainage Manager

seventh lane in the northbound direction to receive the additional lane from eastbound SR 836 ramp to northbound I-95 and enhance the flow of traffic through the Midtown Interchange. This portion of the project will also enhance safety, rideability and durability of I-95 along the project limits.

I-395 Improvements: The limits on I-395 are from the SR 836 / I-95 / I-395 (Midtown) Interchange to the MacArthur Causeway, approximately 1.4 miles long. The project will completely reconstruct the existing interstate and create a signature bridge that will span 1,025 feet over NE 2 Avenue and State Road (SR) 5/Biscayne Boulevard redefining the Miami skyline with its six sweeping arches. The signature bridge with its high vertical clearance will transform the area beneath I-395 into 55 acres of vibrant open communal spaces for the enjoyment of Overtown residents, nearby communities and visitors. The project will add additional capacity to I-395 with a total of three through lanes in each direction and provide separate connector ramps for traffic to and from I-95. The existing I-395 eastbound off-ramps at NE 2 Avenue will be moved west to North Miami Avenue, and the westbound on-ramps at NE 1 Avenue will be shifted to the west to North Miami Avenue. NW 2 Avenue will also be reconnected under I-395 providing residents greater access.

SR 836 Improvements: The limits on SR 836 are from NW 17 Avenue to the Midtown Interchange. This project is a continuation of MDX's work program to modernize the SR 836 corridor. The improvements on SR 836 include the construction of a Viaduct (elevated bridge) that begins just east of the toll gantry at NW 17 Avenue, rising over the center of SR 836 allowing drivers to bypass the I-95 Interchange touching down at I-395 east of I-95. The Viaduct will have two lanes in each direction and will allow drivers continuing east to Watson Island, PortMiami and Miami Beach to entirely bypass the Midtown interchange and its ramps. The existing SR 836 roadway and bridges will serve as a collector distributor system to allow drivers to enter and exit from the existing local roads and I-95. This collector distributor system will reduce the existing weaving movements resulting in enhanced safety and better traffic operations on SR 836. In addition, the existing eastbound SR 836 ramp to northbound I-95 will be widened to include an additional lane greatly reducing the congestion that drivers currently experience.

Resurfacing and Safety Upgrades of Turnpike Mainline (SR 91) from MP 259.9 – 265.3 in Orange County, **Florida's Turnpike Enterprise**: Metric will perform a review of the Existing Roadway Conditions Assessment Report (ERCAR) documentation and implement any improvements, recommendations, and/or design variations/exceptions/technical memorandums identified in within it. Services will include the milling and resurfacing of the existing travel lanes including inside and outside shoulders and median openings within the limits of this job. This will include the Turkey Lake Service Plaza/Turnpike Headquarters (HQ) entrance and exit ramps, including the access roads (both NB and SB) along the outside of the Plaza as well as the parking lot. This involves a new landscape planting design in the parking lot which requires close coordination with the team for the placement of root cells, pavers, bollards and the design of pervious pavement. This work will include corrections to the shoulder drop-off along the edge of pavement as well as full depth cracking pavement rehabilitation. Metric will perform cross slope analysis and cross slope correction to meet criteria, address needed transitions between the varied milling and resurfacing sections. Metric's design plans will reflect any special adjustments to the mill and resurface process that may be required along the drainage inlets, curbed areas and median crossovers. Adjustments and repairs will be made to all guardrail openings for maintenance access and correct/adjust guardrail as needed. Replacement of non-compliant signing and new parking lot lighting for Turnpike HQs, Operations, Trades and FHP office buildings will also be designed. *Role: Drainage Engineer*

Districtwide Continuing Services - **ITS Consultant, Florida's Turnpike Enterprise**: This contract is a Continuing Services contract for ITS Design Services covering multiple areas within FTE's system of toll roads. Services include the development of studies, concepts, design memorandums, and/or construction plans in relation to improving the Turnpike's ITS, including any other incidental elements, including but not limited to: roadway, roadside, structures, signing and pavement markings, traffic operations, lighting, utility relocation, maintenance of traffic, cost estimates, environmental permits, environmental mitigation plans and other incidental items.

South Florida Dynamic Message Signs (DMS) Improvements & Replacements, Florida's Turnpike Enterprise: As a task work order under Metric's Continuing Services Contract for ITS Design Services, Metric is preparing construction plans and a specification package to replace the existing DMS along in South Florida including SR 821 (HEFT), SR 869 (Sawgrass), and SR 91 (Turnpike Mainline). Other services include traffic & crash data, drainage, environmental permitting, roadway, and S&PM improvements.

BrowardNorthlake Boulevard, Palm Beach County: Preliminary and final roadway design, drainage design and permitting of a 3.6-mile reconstruction project of Northlake Boulevard from Seminole Pratt Whitney Road to Coconut Boulevard. Overall services include preparation of a complete set of construction plans and special provisions including roadway design, drainage, pavement marking and signing, coordination with utilities and permitting from regulatory agencies.

5' Sidewalk Design for LAP Funded SRTS Sidewalk Project: North Side of Royal Palm Drive between Buenaventura Blvd. and Simpson Road (FM #437511-1-38-01), Osceola County: Metric provides design services for this LAP funded Safe Routes to School (SRTS) project. This is a small sidewalk design project with a short schedule. *Role: Drainage/Permitting Engineer*

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HOLT, MICHAEL A.

ISSUED: 03/01/2019

Signature

LICENSED UNDER CHAPTER 471, FLORIDA STATUTES
EXPIRATION DATE: FEBRUARY 28, 2021

METRIC ENGINEERING

MARK SCOTT, PE

Senior Drainage Engineer

TECHNICAL EXPERTISE

Stormwater / Drainage Design
Project Management
Environmental Permitting
Geotechnical/Materials Testing

YEARS OF EXPERIENCE

10 Years

PROFESSIONAL REGISTRATIONS

Professional Engineer – FL #70948

CERTIFICATIONS

Current OSHA 40-HR Training (HAZWOPER)
OSHA 10-HR Training
Radiation Safety Training
HEC-18/22
CR252 MOD2 Safety Training (Gulf Oil Spill Training)

EDUCATION

B.S., Civil Engineering, Purdue University

PROFESSIONAL PROFILE

Mr. Scott has over 10 years of experience in stormwater management, drainage design, and environmental permitting for roadway projects as well as materials testing. Mr. Scott has managed drainage design on major roadway projects for Florida Department of Transportation and has significant civil site design experience including drainage, utilities (potable water, waste water, septic systems, fire flow, etc.), roadway design, grading, cost estimates, etc.

REPRESENTATIVE PROJECTS

SR 189 from North of SR 4 to Alabama State Line, Okaloosa County, FDOT District 3 (Sub to Fisher Arnold): The is a resurfacing, rehabilitation and restoration project including adding additional turn lanes, guardrail modifications, cross slope modifications, improving pedestrian and vehicular access, utility coordination, and signing and pavement markings. This project has an open drainage system and drainage improvements include mitered end sections, inlet repairs, adjusting stormwater manholes, and side drain repairs. Metric's role includes drainage design and utility coordination. *Role: Drainage QA/QC*

US 231 (SR 75) from 23rd Street to Pipeline Road and US 231 at CR 2327 (Transmitter Road) in Bay County, FDOT District 3: This multi-laning project involves 6-laning US 231 and widening side streets for operational improvements. Metric's role is to design widening on CR 2327 and provide interim design for the intersection of US 231 at CR 2327; perform utility coordination, ITS design and Signalization design. *Role: Drainage Engineer*

SR 500 (US 441) Widening & Reconstruction Plans Update, FDOT District 5: Reconstruction of 4.1 miles of SR 500 from a four-lane rural roadway to a six-lane divided urban arterial from Lake Ella Drive to Avenida Central in Lake County. Final plans were prepared for the construction of a curb and gutter roadway with bicycle lanes and a raised median within an existing 100'-200' right-of-way corridor. Work efforts included roadway plans, drainage design and permitting for four retention ponds, the removal of the existing bridge over CR 25, design survey and right-of-way mapping, signing & pavement marking plans, traffic control plans, utility coordination and the preparation of adjustments, and the design of five signalized intersections. This project was shelved in 2014, and in May of 2018, our team was asked to moved forward with the re-design. This project will be delivered using 3D design. *Role: Drainage Engineer & Utilities QA/QC*

I-395 / SR 836 / I-95 Reconstruction Design-Build, FDOT District 6: Project efforts are just beginning on this $802 million Design-Build project which involves three projects that will be constructed concurrently by the Archer Western-de Moya (AW- dMG) Joint Venture (JV) to minimize impacts to the public. Metric serves as a major design team member for structures, ITS, signals, roadway and drainage elements. *Role: Drainage QA/QC*

Districtwide Continuing Services - **ITS Consultant, Florida's Turnpike Enterprise:** This contract is a Continuing Services contract for ITS Design Services covering multiple areas within FTE's system of toll roads, Services include the development of studies, concepts, design memorandums, and/or construction plans in relation to improving the Turnpike's ITS including any other incidental elements, including but not limited to: roadway, roadside, structures, signing and pavement markings, traffic operations, lighting, utility relocation, maintenance of traffic, cost estimates, environmental permits, environmental mitigation plans and other incidental items.

South Florida Dynamic Message Signs (DMS) Improvements & Replacements, Florida's Turnpike Enterprise: As task work order under Metric's CSC for ITS Design Services, Metric is preparing construction plans and a specification package to replace the existing DMS along in South Florida including SR 821 (HEFT), SR 869 (Sawgrass), and SR 91 (Turnpike Mainline). Other services include traffic & crash data, drainage, environmental permitting, roadway, and S&PM improvements. *Role: Drainage Engineer of Record*

Lake/Orange County Connector PD&E Study from US 27 to 429, CFX: Ongoing study (PEIR) for a potential 5-mile CFX system expansion, tolled expressway project. An alternative corridor evaluation was performed on 20 corridor alternatives with the results documented in an ACER. The PD&E alternatives will include a new system interchange with SR 429 and two new service interchanges. The study area is generally undeveloped but traverses the Wellness Way and Horizon West planning areas. Environmental constraints include the Lake Louisa State Park, the Schofield Tract (one of several tracts comprising the Lake Wales Ridge Florida Forever Project), listed plant species, potential sand skink habitat, many gopher tortoise, Floridan aquifer high recharge areas, a proposed CEMEX sand mine and conservation easements. An EAG and PAG were formed. *Role: Drainage Engineer of Record*

MARK SCOTT, PE

Senior Drainage Engineer

I-4/SR 400 Widening and Resurfacing E. Williamson to CR 46A, FDOT District 5: This project has two segments. The first one is I-4/SR 400 from west Lake Mary Blvd. (E. Williamson Overpass) to West of CR 46A. For this segment, we are preparing final design plans to resurface the interstate and ramps. The second segment includes widening eastbound I-4 from east of SR 434 to west of Lake Mary Blvd. The ramps at the existing rest area will be reconfigured and the existing lighting will be modified based on the revised ramp configuration. New noise wall be installed just east of the rest area. Other aspects of the project include: drainage, permitting, structures, S&PM, lighting, and ITS fiber and device relocation. *Role: Drainage Engineer*

Intelligent Transportation Systems (ITS) Engineering, Design and Procurement Support Services, San Juan Metropolitan Area, Puerto Rico Highway & Transportation Authority (PRHTA): ITS GEC to assist PRHTA with the establishment of an ITS Program for the greater San Juan Metropolitan Area. Tasks include but not be limited to Systems Engineering, High-Level Design, Requirement Development and Tracking, Design/Build Criteria Package Development, and Construction Oversight and Quality Assurance for five phases of projects including a Traffic Management Center which will total approximately $45 Million in Construction dollars. Metric staff is on-site to assist PRHTA's ITS Project Manager throughout the contract in various roles including program management, potential integration and construction oversight. *Role: Drainage Engineer for Phase 4, Unit 2 for the Design & Support Services for Caguas to San Juan project.*

Districtwide Miscellaneous Safety Design, FDOT District 2: Metric is responsible for the design and preparation of a complete set of construction contract documents (specifications packages, etc.) and any incidental engineering services, as necessary, for improvements to various roadway transportation facilities. Services included roadway design (typical sections, plan/profiles, cross slopes, access management, etc.), Traffic Control Plan (TCP), drainage design, utility coordination, environmental/permitting, miscellaneous structures, S&PM, signalization, lighting, survey / SUE, and geotechnical. Client: FDOT District 2, Contact: Jeff Scott, PE, 904-360-5205, Begin/End Dates: 07/2012 – 07/2017, Role: Drainage Engineer

PRIOR WORK EXPERIENCE – COMPANIES

11/2017 – 08/2018: Project Engineer/Senior Engineer: AGES of Jax, Inc. (Jacksonville, FL):

- Managed field technicians and threshold inspectors.
- Performed threshold and construction inspections on construction projects.
- Project engineer for materials/geotechnical testing on construction projects, including FDOT projects.
- Reviewed, signed, and sealed all materials/geotechnical testing reports and billing.
- Created and submitted proposals for new projects.

11/2016 – 11/2017: Project Engineer: George F. Young, Inc. (Gainesville, FL):

- Prepared civil site designs including drainage, utilities (potable water, waste water, septic systems, fire flow, etc.), roadway design, grading, cost estimates, etc.
- Prepared and submitted regulatory permit applications.
- Civil project design QA/QC.
- Utilize scrum methodologies for project management.

10/2013 – 11/2016: Project Engineer/Manager: Universal Engineering Sciences, Inc. (Gainesville, FL):

- Managed field technicians and threshold inspectors.
- Performed threshold inspections on construction projects.
- Project Engineer for materials/geotechnical testing on construction projects, including FDOT projects.
- Reviewed, signed, and sealed all materials/geotechnical testing reports and billing.
- Created and submitted proposals for new projects.

09/2011 – 09/2012: Drainage Engineer/Professional Engineer II: FDOT (Tallahassee, FL)

06/2010 – 09/2010: Safety Supervisor: ETI Professionals, Inc. (Tampa, FL/Gulfport, MS)

05/2007 – 01/2010: Design Engineer: Pitman-Hartenstein & Associates, Inc. (Tampa, FL:

02/2002 – 02/2007 & 04/2011 – 09/2011: Senior Engineer: ACM Engineering & Environmental Services, Inc. (Tampa, FL)

02/1999 – 05/2000; 08/2000 – 12/2001: Environmental Engineering Lab Assistant: Purdue University (West Lafayette, IN)

Ron DeSantis, Governor

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SCOTT, MARK ANTHONY

1768 HAWKINS COVE DR E
JACKSONVILLE FL 32246

LICENSE NUMBER: PE70948

EXPIRATION DATE: FEBRUARY 28, 2021

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County Commissioners

METRIC ENGINEERING

ALEXANDER CASO, PE

Director of Structures Design

TECHNICAL EXPERTISE

Alternative Delivery Methods
Project Management
Structures Design
Structures Rehabilitation

YEARS OF EXPERIENCE

25 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #53831 (1999)

EDUCATION

- B.S., Civil Engineering, University of Miami (1993)
- Masters course work, Structural Engineering, University of Miami (1994-95)

PROFESSIONAL PROFILE

Mr. Caso has 25 years of structural design experience, including concrete and steel bridges, retaining walls, and ancillary structures. His expertise includes various alternative delivery methods such as design-build and P-3 projects. He has served in project management roles on projects for the Florida Department of Transportation (FDOT), the Central Florida Expressway (CFX), and numerous municipal clients throughout the state of Florida. His structural design knowledge includes fixed and movable bridges, structural rehabilitation, inspection and load rating, post-design construction services, plans production and conducting Quality Assurance/Quality Control (QA/QC) reviews.

REPRESENTATIVE PROJECTS

Structural Engineer: I-395 / SR 836 / I-95 Reconstruction Design-Build, FDOT District 6: Project efforts are just beginning on this $802 million Design-Build project which involves three projects that will be constructed concurrently by the Archer Western-de Moya (AW-dMG) Joint Venture (JV) to minimize impacts to the public. Metric serves as a major design team member for structures, ITS, signals, roadway and drainage elements. *Role: Structural Engineer*

Structural Engineer: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. *Role: Structural Engineer for Mast Arm Analysis on NW 62nd Street; School Zone Flasher Improvements; and Mast Arm Installation Improvements at Pembroke Road & SW 136 Avenue.*

Structural Engineer: Districtwide Continuing Services - **ITS Consultant, Florida's Turnpike Enterprise:** This contract is a Continuing Services contract for ITS Design Services covering multiple areas within FTE system of toll roads. Services include the development of studies, concepts, design memorandums, and/or construction plans in relation to improving the Turnpike's ITS, including any other incidental elements, including but not limited to: roadway, roadside, structures, signing and pavement markings, traffic operations, lighting, utility relocation, maintenance of traffic, cost estimates, environmental permits, environmental mitigation plans and other incidental items.

Central Florida Dynamic Message Signs (DMS) Improvements & Replacements, Florida's Turnpike Enterprise: As task work order under Metric's Continuing Services Contract for Intelligent Transportation Systems (ITS) Design Services, Metric is preparing construction plans and a specification package to replace the existing DMS along SR 91, SR 417 (Seminole Expressway), SR 570 (Polk Pkwy.), and SR 589 (Suncoast Pkwy.) in Central Florida. Other services include traffic & crash data, drainage, environmental permitting, roadway, and S&PM improvements. *Role: Structural Engineer; SR 492 at 30th Street Mast Arm Signal Design.*

Structural Engineer: Continuing Services Contract for Traffic Operations – Four Consecutive Contracts (2001 – 2022), FDOT District 5: Provide transportation and planning and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks include Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts.

Structural Engineer: Districtwide Miscellaneous Safety Design, FDOT District 2: Metric is responsible for the design and preparation of a complete set of construction contract documents (specifications packages, etc.) and any incidental engineering services, as necessary, for improvements to various roadway transportation facilities. Services included roadway design (typical sections, plan/profiles, cross slopes, access management, etc.), Traffic Control Plan (TCP), drainage design, utility coordination, environmental/permitting, miscellaneous structures, S&PM, signalization, lighting, survey/SUE, and geotechnical. *Role: Structural Engineer for I-10 WB to I2-95 SB Ramp Milling*

ALEXANDER CASO, PE

Director of Structures Design

Structural Engineer: Consultant Services for Transportation Management Center Area-Wide (Two Consecutive Contracts), FDOT District 2: Services to provide a wide range of operational, engineering and planning services to include technical, management and administrative tasks for District 2 ITS Program and Traffic Management Center. Traffic Incident Management (TIM) Team support includes bi-monthly meetings, newsletters, etc. Metric has continued to perform these services as a subconsultant under the Districtwide GEC contract for two consecutive terms.

Structural Engineer: Lake/Orange County Connector PD&E Study from US 27 to 429, Central Florida Expressway Authority (CFX): Ongoing study (PEIR) for a potential 5-mile CFX system expansion, tolled expressway project. An alternative corridor evaluation was performed on 20 corridor alternatives with the results documented in an ACER. The PD&E alternatives will include a new system interchange with SR 429 and two new service interchanges. The study area is generally undeveloped but traverses the Wellness Way and Horizon West planning areas. Environmental constraints include the Lake Louisa State Park, the Schofield Tract (one of several tracts comprising the Lake Wales Ridge Florida Forever Project), listed plant species, potential sand skink habitat, many gopher tortoise, Floridan aquifer high recharge areas, a proposed CEMEX sand mine and conservation easements. An EAG and PAG were formed.

Structural Engineer: Tri-Rail Coastal Link Service PD&E Study (Palm Beach, Broward and Miami-Dade Counties) (Sub to The Corradino Group): This effort includes preparation of the environmental studies necessary to comply with FTA requirements and lead to the preparation of an Environmental Assessment for a proposed integrated regional rail transit system on the Florida East Coast Railway Corridor. The transit corridor being evaluated is along the existing FEC Railway that generally parallels Dixie Highway and U.S. 1. The 85-mile study area extends from Jupiter through Pompano Beach to downtown Miami. Tasks also include the existing and future operational analysis for the rail-highway grade crossings and adjacent signalized intersections, in addition to the 25 station area locations along the alignment (65 additional intersections). The operational analysis is being conducted using Synchro 8 for intersection capacity and using Vissim 7 for its pre-emption and complex intersection capabilities in order to better gauge the effect of increased rail activity.

PRIOR WORK EXPERIENCE

2001 – 2002: In-House Consultant Manager, FDOT District 4: This position consisted of two work order assignments to the Consultant Management Office as the District's in-house Consultant Project Manager. The assignments were each 6 months in duration and consisted of managing multiple FDOT projects including RRR, Safety, Signalization, and new construction. Project management services were included for districtwide ongoing movable bridge rehabilitation jobs. *Consultant Manager responsible for scoping of new projects, coordinating with support sections, municipalities, and permitting agencies, and developing and updating project schedules*

Bridges of the Isles/Sunrise Key Bridge Replacements, FDOT District 4: This design-build project consisted of design replacement structures for five structurally deficient and functionally obsolete bridges in the downtown Ft. Lauderdale historic district. These bridges provide single points of access to residential finger islands, so they require multi-phased demolition and construction. This project incorporated Accelerated Bridge Construction techniques using precast superstructure and substructure elements. The project also involved temporary signalization, traffic control plans, utility coordination, geotechnical design, environmental permitting and mitigation for sea grass impacts, and coordination with multiple community and agency stakeholders. *Project Manager responsible for design oversight and overall project management*

Rehabilitation of Oakland Park Blvd. Bridge over AICW, Broward County, FL, FDOT District 4: Services for this rehabilitation project included replacement of existing gear drive system with new hydraulic system and associated structural modifications required. Post-design services included shop drawing review and field inspections. *Structural Project Engineer involved in the rehabilitation*

SR 70 Bridges: Widening Okeechobee Road, St. Lucie County, FL, FDOT District 4: This project consisted of the final design of five structures: two new bridges, one widening and three shared use path bridges in western St. Lucie County. All of the structures were simple span concrete American Association of State Highway and Transportation Officials (AASHTO) girder bridges with one including aesthetic enhancements using pre-cast architectural panels and concrete rustication. *Structural Project Manager providing oversight of the final designs*

17th Street Causeway Replacement Bridge over the Atlantic Intercoastal Waterway (AICW), Broward County, FL, FDOT District 4: This project known as "The Gateway to Ft. Lauderdale" involved the construction of signature double leaf bascule bridge. *Structural Engineer responsible for post-design services and coordination of the design effort for the East Plaza pedestrian facility located below the east approach spans and design of steel sheet-pile bulkhead required to fill in the east cove area*

Royal Park Bridge Demolition & Foundation Testing, Palm Beach County, FL, FDOT District 4: The project involves the post-design services for bridge demolition and Statnamic Load Testing on 1.220m Drilled Shafts with post-pressure grouted tips. *Structural Project Engineer responsible for these post design services*.

Ron DeSantis, Governor

Halsey Beshears, Secretary

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CASO, ALEXANDER ANGEL

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METRIC ENGINEERING

JIM JOHNSTONE, PE

Structural Engineer

TECHNICAL EXPERTISE

Project Management
Bridge Design
Bridge Rehabilitation
Bridge Inspection

YEARS OF EXPERIENCE

19 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #66583 (2007)

EDUCATION

- B.S., Civil Engineering, University of Maryland (2001)

PROFESSIONAL PROFILE

Mr. Johnstone has 19 years of extensive and diverse engineering experience, including the design, analysis and rehabilitation of various types of bridges and ancillary structures. He also brings extensive knowledge and experience in roadway, utilities, geotechnical, and building construction engineering and inspection. This well-rounded knowledge adds a well-rounded and in-depth understanding of his structures expertise. He has worked on small to large projects for government and municipal clients throughout the state of Florida.

REPRESENTATIVE PROJECTS

I-395 / SR 836 / I-95 Reconstruction Design-Build, FDOT District 6: Project efforts are just beginning on this $802 million Design-Build project which involves three projects that will be constructed concurrently by the Archer Western-de Moya (AW- dMG) Joint Venture (JV) to minimize impacts to the public. Metric serves as a major design team member for structures, ITS, signals, roadway and drainage elements. *Role: Structural Engineer*

The three projects include:

I-95 Concrete Replacement Project: The limits for the improvements on I-95 are from NW 8 Street to NW 29 Street and include the total replacement of the concrete pavement for both the northbound and southbound travel lanes. The AW-dMG team has also added a seventh lane in the northbound direction to receive the additional lane from eastbound SR 836 ramp to northbound I-95 and enhance the flow of traffic through the Midtown Interchange. This portion of the project will also enhance safety, rideability and durability of I-95 along the project limits.

I-395 Improvements: The limits on I-395 are from the SR 836 / I-95 / I-395 (Midtown) Interchange to the MacArthur Causeway, approximately 1.4 miles long. The project will completely reconstruct the existing interstate and create a signature bridge that will span 1,025 feet over NE 2 Avenue and State Road (SR) 5/Biscayne Boulevard redefining the Miami skyline with its six sweeping arches. The signature bridge with its high vertical clearance will transform the area beneath I-395 into 55 acres of vibrant open communal spaces for the enjoyment of Overtown residents, nearby communities and visitors. The project will add additional capacity to I-395 with a total of three through lanes in each direction and provide separate connector ramps for traffic to and from I-95. The existing I-395 eastbound off-ramps at NE 2 Avenue will be moved west to North Miami Avenue, and the westbound on-ramps at NE 1 Avenue will be shifted to the west to North Miami Avenue. NW 2 Avenue will also be reconnected under I-395 providing residents greater access.

SR 836 Improvements: The limits on SR 836 are from NW 17 Avenue to the Midtown Interchange. This project is a continuation of MDX's work program to modernize the SR 836 corridor. The improvements on SR 836 include the construction of a Viaduct (elevated bridge) that begins just east of the toll gantry at NW 17 Avenue, rising over the center of SR 836 allowing drivers to bypass the I-95 Interchange touching down at I-395 east of I-95. The Viaduct will have two lanes in each direction and will allow drivers continuing east to Watson Island, PortMiami and Miami Beach to entirely bypass the Midtown interchange and its ramps. The existing SR 836 roadway and bridges will serve as a collector distributor system to allow drivers to enter and exit from the existing local roads and I-95. This collector distributor system will reduce the existing weaving movements resulting in enhanced safety and better traffic operations on SR 836. In addition, the existing eastbound SR 836 ramp to northbound I-95 will be widened to include an additional lane greatly reducing the congestion that drivers currently experience.

PRIOR WORK EXPERIENCE

10/2016 – 04/2019: Structural Services: Dewberry Engineers, Inc.: Performed bridge and ancillary bridge design services and load ratings. Worked on projects involving pedestrian bridge design, roadway, utilities, project development and production. Performed project management services including staff oversight, creating project schedules, priorities and task lists. Performed construction cost estimates. Conducted owner reviews of new projects and performed widening projects and repairs services. Reviewed repair recommendations for feasibility and constructability. Provided annual quality assurance of bridge inspections for CFX system. Created bridge development reports and performed constructability reviews.

A sample of projects while at Dewberry include:

05/2018 – 04/2019: Thomas Drive over Open Creek Bridge Replacement in Holmes County, FDOT District 3: Bridge Load Rating: This project involved the design and replacement of an existing three-span concrete slab superstructure bridge supported by timber abutments and piers. This project replaces the existing structurally deficient bridge with a new 60 ft. long, single span bridge consisting of an 18" Florida Slab Beam superstructure supported on concrete end bents on prestressed concrete pile foundations. *Mr. Johnstone was the Project Engineer responsible for Load Rating of the new bridge*. Minor Bridge Design: This

project also included realignment of the roadway approaches and replacement of the deteriorated timber retaining walls along Open Creek. The vertical profile was increased to provide for drift clearance and a new riprap channel was established to stabilize Open Creek in the vicinity of the bridge in accordance with the Bridge Hydraulics Report. *Mr. Johnstone was the Project Engineer responsible for the Bridge Development Report, including investigation of GRS-IBS abutments and review and finalization of the developmental design standards for the Florida Slab Beams. He was also responsible for the design of all bridge components; including the Florida Slab Beam superstructure, the concrete end bents and prestressed concrete pile foundations.*

07/2018 – 08/2018: Denn John Lane and Neocity Way Extensions, Osceola County: Miscellaneous Structures Design: Mr. Johnstone was responsible for the design of steel strain pole structures at the intersection of US192/441 at Denn John Lane.

08/2018 – 04/2019: The Econlockhatchee Trail Expansion Project in Orange County, City of Orlando: This project involved the design of two new bridges to increase the capacity of Econlockhatchee Trail from Lee Vista Boulevard to Curry Ford Road. Bridge Load Rating: Mr. Johnstone provided preliminary load rating calculations for both of the prestressed concrete Florida I-Beam bridges. Minor Bridge Design: In addition, there were two bridges Mr. Johnstone was involved with. Bridge 1 is a single span bridge that is 88 feet long and carries traffic over the Azalea Outfall canal. Bridge 2 is a single span bridge that is 70 feet long and carries traffic over the Orlando Outfall canal. Mr. Johnstone provide the bridge development report and design calculations for both bridges that consisted of prestressed concrete Florida I-Beam superstructures and concrete end bents on prestressed concrete pile foundations.

06/2018 – 02/2019: US 98 Pedestrian in Polk County, FDOT District 1: This project involved developing preliminary design concepts and alternative layouts for a 208 ft. span pedestrian bridge connecting Lakeland Senior High School to Fletcher Park. This structure will span US98 and the CSX railroad. Minor Bridge Design: Mr. Johnstone was the Project Engineer responsible for the Bridge Development Report, including preliminary calculations and comprehensive construction cost options for a single-span Steel Box Truss superstructure and a two-span Precast Concrete Florida I-Beam superstructure. He was also responsible for the design of Hammer Head Piers, pile foundations and multiple stair and ramp options, including environmental coordination for a ramp that ties down in an existing drainage pond.

08/2017 – 09/2017: Tivoli Drive and Providence Blvd., City of Deltona: This project involved the analysis of an existing strain pole structure for the proposed signal and sign configuration. Miscellaneous Structures Design: Mr. Johnstone was responsible for the analysis of the existing concrete strain pole system.

06/2017 – 09/2017: SR 79 Improvements in Washington County, FDOT District 3: Bridge Load Rating: Mr. Johnstone was responsible for the Load Rating of a new concrete box culvert. This bridge length culvert consisted of two 10' x 4' barrels. An LRFR load rating was achieved by providing manual calculations of the live Load distribution through fill soil and the vertical crown pressures for live loads that included the Design Truck, Design Tandem, the Florida FL-120 permit vehicle and all of the Florida Legal Loads (SU2, SU3, SU4 C3, C4, C5 ST5). The box culvert slabs were analyzed and rated using traditional concrete analysis methods.

01/2017 – 10/2018: I-4 at State Road 557 Interchange Improvements and Bridge Replacement in Polk County, FDOT District 1: This project provided for the design and reconstruction of the I-4 SR 557 interchange from a partial cloverleaf to a diamond configuration with dual, two-lane raindrop roundabouts at the ramp junctions with SR 557. The existing two-lane SR 557 bridge over I-4 will be replaced with a new four-lane bridge that will accommodate the I-4 Ultimate typical section, including three general-use lanes in each direction, with provisions for future special use-lanes and the future high-speed rail corridor. This project also involved the removal of an existing bridge culvert and design of a new short span bridge over reconstructed underpass designed to re-establish a natural channel for Saddle Creek and provide adjacent shelfs to serve as Wildlife crossings. Major Bridge Design – Steel: Mr. Johnstone was responsible for preliminary design of the wildlife crossing bridge. He was also the project engineer responsible for the bridge development report, the bridge design calculations, constructability considerations, construction staging, and the 30% bridge plans required for all three bridge alternatives. The design alternatives included calculations for a 349 ft. long bridge that included a two-span Florida I-Beam superstructure, a two-span continuous Steel I-Girder superstructure and a three-span Florida I-Beam superstructure. Substructure design included end bents and multi-column concrete piers to accommodate the future rail provisions such as railroad crash walls and pile downdrag on pier foundations due to nearby railroad tracks.

09/2006 – 08/2011: Structural Services: URS Corporation: He was responsible for the Inspection of all Reedy Creek Improvement District bridges and water control structures. Developed repair work programs and presentation reports. Performed BMIS coding, PONTIS data entry, and conducted condition assessments. Performed design and analysis of bridges and ancillary structures, prepared repair and rehabilitation work plans. Authored written reports and provided recommendations for corrective actions.

Ron DeSantis, Governor

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JOHNSTONE, JAMES K.

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METRIC ENGINEERING

HERMAN RAMOS, PE

Structures Engineer

OFFICE LOCATION

Lake Mary, FL

TECHNICAL EXPERTISE

Structural Design

YEARS OF EXPERIENCE

23 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #85974

EDUCATION

- B.S., Civil Engineering, Polytechnic University of Puerto Rico (1993)

PROFESSIONAL PROFILE

Mr. Ramos has relevant design experience with a variety of structures. He has been responsible for leading and managing bridge and structure design projects towards successful completion and within the budget and schedule.

REPRESENTATIVE EXPERIENCE

I-395/SR 836/I-95 Reconstruction Design-Build Widening of Bridges 121, 114 and 115, Florida Department of Transportation (FDOT) District 6: Widening of existing precast prestressed single span concrete bridge as part of MDX's work program to modernize the SR 836 corridor. Widening of bridges require addition of one or two new Florida I- Beams, deck, railing, and bent reconstruction, driving new piles, and new MSE walls. *Client: FDOT District 6, Begin/End Dates: (08/2018 - current), Role: Lead Structural Engineer*

I-4/SR 400 Widening and Resurfacing E. Williamson to CR 46A, FDOT District 5: This project has two segments. The first one is I-4/SR 400 from west Lake Mary Blvd. (E. Williamson Overpass) to West of CR 46A. For this segment, we are preparing final design plans to resurface the interstate and ramps. The second segment includes widening eastbound I-4 from east of SR 434 to west of Lake Mary Blvd. The ramps at the existing rest area will be reconfigured and the existing lighting will be modified based on the revised ramp configuration. New noise wall be installed just east of the rest area. Other aspects of the project include: drainage, permitting, structures, S&PM, lighting, and ITS fiber and device relocation. *Client: FDOT District 6, Begin/End Dates: (04/2017 – current), Role: Structural Engineer*

PRIOR WORK EXPERIENCE

10/2013 – 08/2018: Senior Bridge Engineer: HDR, Vienna, VA

Moveable Bridge for Sunny Bank and Merry Point Ferries in Northumberland and Lancaster Counties, Virginia DOT: The project consisted of replacing the severely corroded boarding ramps for the Sunny Bank and Merry Point Ferries in Lancaster and Northumberland Counties in VA. The existing ramps were replaced with new movable galvanized steel ramps. *Client: Virginia DOT, Begin/End Dates: (06/2014 – 08/2014), Role: Engineer of Record responsible for the design and plan preparation of the replacement ferry ramps and coordination with the mechanical engineer designing the ramp lifting mechanism. A lighter and corrosion resistant alternative consisting of carbon fiber reinforced polymer (CFRP) members was considered for this project, but cost was twice the steel alternative, therefore the steel alternative was selected.*

MHTA Purple Line Project Proof of Concept, Montgomery and **Prince George's County, MD:** The Purple Line is a 16-mile light rail line that will extend from Bethesda in Montgomery County to New Carrollton in Prince George's County. It will provide a direct connection to the Metrorail Red, Green and Orange Lines; at Bethesda, Silver Spring, College Park, and New Carrollton. The Purple Line will also connect to MARC, Amtrak, and local bus services. The Purple Line will be light rail and will operate mainly in dedicated or exclusive lanes, allowing for fast, reliable transit operations. Twenty-one stations are planned. *MHTA Purple Line, Begin/End Dates: (01/2014 – 05/2014), Role: Structural Engineer tasked with performing conceptual design, proof of concept, and quantity calculations of highway and pedestrian bridges, tunnels, retaining walls, and train station facilities for the preparation of a technical proposal and construction cost estimate of the project.*

Route 23 Bridge over Indian Creek in Bristol County, VA, Virginia DOT: Replacement of a structurally deficient bridge in Bristol County, VA. The existing bridge was a three-span cast in place concrete beam bridge constructed in the 1940's with severely deteriorated beams, deck, and substandard railings. It was replaced by a two-span continuous precast prestressed concrete bulb tee girder bridge. The girders were flared to accommodate the curved geometry of the bridge and sharp pier and abutment skews. *Virginia DOT, Begin/End Dates: (02/2015 – 08/2015), Role: Lead Structural Engineer responsible for the conceptual design and cost estimates of steel and concrete alternatives in the preliminary design phase and final design of the abutments and girders for Stages I and II design.*

Rapid Bridge Replacement Project Statewide P3 Project, Pennsylvania Department of Transportation (PennDOT): This public-private partnership (P3) Rapid Bridge Replacement Project was awarded by the PennDOT to the consortium of Plenary Walsh Keystone Partners (PWKP). The Commonwealth of Pennsylvania is taking advantage of the new P3 tool, signed into law in 2012, to address the state's roughly 4,500 bridges in poor condition. The project is an initiative to replace 558 aging bridges throughout Pennsylvania. Replacing the bridges will provide motorists with new, modern structures and allow PennDOT to remove them from their list of bridges in poor condition. The bridges are primarily crossings on smaller state highways, many in rural areas, rather than

HERMAN RAMOS, PE

Structures Engineer

interstate bridges or large river crossings. *Client: PennDOT, Begin/End Dates: (02/2016 – 01/2018), Role: Task Leader performing design services during construction. Work consisted of redesigning abutments, wingwalls, scour protection, bridge superstructure, and box culverts in response to requests for changes from the contractor or comments by PennDOT.*

I-66 Inside the Beltway Design-Build Widening of Bridge over Sycamore St., Arlington County, VA, Virginia DOT: Widening of bridge as part of design-build project on I-66 inside the beltway for the addition of one HOV lane. The existing bridge is a two-span continuous multi-cell cast in place concrete box girder bridge. The widened portion consists of three continuous adjacent precast prestressed concrete box beams connected rigidly to the existing superstructure. CONSPAN was used to design the new box beams, while the widened structure as a whole was analyzed using LARSA. *Client: Virginia DOT, Begin/End Dates: (03/2018 – 07/2018), Role: Lead Structural Engineer responsible for the design of the superstructure and plan preparation.*

Additional projects:

- VDOT I-95 Express Lanes. Reviewed soundwall shop drawings and performed
- load rating check of Rt. 637 (Telegraph Road) Bridge over I-95 NB, I-95 SB and I-95 Express Lanes.
- VDOT Rte. 602 Bridge over Pagan Creek, Isle of Wight County. Performed design and plans check.
- VDOT Pre-Scoping of Rte. 629 Bridge over Middle Fork of Kents Branch, Fluvanna County.
- VDOT Pre-Scoping of Rt. 723 Bridge over Branch Goose Creek, Fauquier County.
- VDOT Pre-Scoping of Rt. 606 Bridge over North Fork Rivanna River, Albemarle County. Performed study of various replacement and rehabilitation alternatives.
- DDOT DC Streetcar. Performed design of improvements to Union Station and review of structural plans for streetcar facilities.
- DDOT Potomac Ave. NW. Design of Soldier Pile Retaining Wall.
- VDOT Rte. 621 Bridge over Passenger Swamp, Isle of Wight County. Performed Stage I and Stage II design.
- VDOT Rte. 35 Bridge over Tarrara Creek, Southampton County. Performed Stage I and Stage II design.
- VDOT I-95 Bridges, Fredericksburg District. Prepared Scoping Memorandums and Cost Estimates for Rehabilitation of Bridges over Rte. 1, Ni, Potomac, and Rappahannock River.
- VDOT I-395 Express Lanes, Arlington County. Inspected bridges and structures.
- VDOT I-95 Bridge over Ni River, Spotsylvania County. Inspected bridge to identify repair areas on the substructure.
- FDOT – Improvements to I-395, Miami, FL – Performed cost estimate checks of conceptual design of proposed cable stayed Signature Bridge over Downtown Miami.
- Dominion Energy/VDOT Pre-Construction Bridge Inspections, Augusta County – Performed bridge inspections and bridge inspection reports for several bridges adjacent to the proposed alignment of Dominion Energy's natural gas pipeline.
- Virginia Department of Rail and Public Transportation – DC to Richmond, VA (DC2RVA) Southeast High Speed Rail Project. Performed quantity and cost estimate checks of conceptual plans of new bridges for the project.
- Transurban/VDOT – I-395 Express Lanes, Arlington County – Performed analysis checks of existing sign structures on I-395 for new sign layouts.

06/2008-10/2013: FHWA/EFLHD Bridge Design Office (Sterling, VA)

ERFO Sandy Damage Assessment of Docks, Seawalls, and Bulkheads at Gateway National Recreational Area, NY-NJ: Inspection and assessment of damages to structures caused by hurricane Sandy in U.S. National Parks located in New York City and New Jersey. Damaged structures included timber docks, concrete seawalls, and bulkheads on Ellis Island, Liberty Island, and Gateway National Park. *Client: FWHA, Begin/End Dates: (11/2012 – 02/2013), Role: Lead Structural Engineer responsible for inspecting damaged structures and estimating repair costs.*

Additional projects while at FHWA/EFLHD Bridge Design Office:

- Criteria BR A151, A153(1), Catoosa Wildlife Management Area, Replacement of Bridges over Obed River & Daddy's Creek, TN
- PRA-EVER 10(1), Everglades National Park, Rehabilitation of Bridge over Buttonwood Canal, FL
- PRA-BLRI 2T13, Blue Ridge Parkway, Rehabilitation of Buck Springs Tunnel, NC
- PRA-BLRI 2S17, 2Y13, Blue Ridge Parkway, Rehabilitation of Big Witch and Ferrin Knob Tunnels, NC
- ERFO/SBN 169(1), 171(1), Sabine National Wildlife Refuge, Replacement of Vastar Road Bridge and Bridge over Northline Canal, LA

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

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RAMOS, HERMAN

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METRIC ENGINEERING

RYAN ST. GEORGE, MS

Senior Environmental Scientist

TECHNICAL EXPERTISE

Environmental Permitting
Compliance and Enforcement
Regulatory Agency Coordination
Wetland Delineation
Mitigation Design
Wildlife / Benthic / Tree Surveys

YEARS OF EXPERIENCE

15 Years

PROFESSIONAL REGISTRATIONS

SWS Professional Wetland Scientist (PWS) Cert. No. 1998

LIAF Certified Landscape Inspector (CLI), Cert. No. 2013-129

FDEP Certified Stormwater, Erosion and Sedimentation Ctrl Instructor No. 38023

FDACS licensed restricted use herbicide applicator No. CM24955

PADI Scuba Certifications Advanced, Rescue/First Aid, Nitrox

Am. Acad. Underwater Sciences Scientific Diver Training – 2003

EDUCATION

MS Marine Biology (2015), Nova Southeastern University,

BS Wildlife Biology & Mgmt. (1999), University of Rhode Island,

PROFESSIONAL PROFILE

Mr. St. George started at Metric Engineering in April 2015. Prior to joining Metric's team, he spent eight years as a Natural Resource Specialist II for Broward County's Aquatic and Wetland Resource Program primarily serving as a lead environmental resource permit application reviewer and natural resource protection compliance/enforcement officer. Before joining Broward County, Mr. St. George also spent 4 years with Miller Legg as an Environmental Scientist performing a wide variety of wetland and wildlife support services for public and private development projects. In addition to project management, he now provides, contract oversight, environmental permitting, construction compliance, wetland delineation, mitigation monitoring, natural resource survey, and related services for a variety of Metric projects. Mr. St. George has strong relationships with Federal, State, and local regulatory staff and an in-depth familiarity with environmental permitting and compliance requirements in Florida.

REPRESENTATIVE PROJECTS

Senior Environmental Scientist: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. Metric has been tasked with 80 task work orders to date. *Reference: Michael S. Cleary, PE, 954-357-5838*

Providing environmental and right-of-way permitting and LAP documentation support for ITS upgrades under traffic capital improvement program. Work includes wetland and surface water delineation, agency coordination, permit document preparation, GIS data collection, wildlife survey, LAP Environmental Features ID Memo coordination, and other related tasks. *Contact: Chris Masullo (954) 847-2676, Begin/End Dates: January 2016 – present*

Project Manager: Districtwide Environmental Compliance Monitoring, (Miami-Dade and Monroe Counties), FDOT District 6: This contract provides for inspection and monitoring of all active construction sites within FDOT District 6, to verify, document and facilitate environmental permit compliance, as well as compliance with related environmental commitments. Work includes preparation of environmental compliance documentation for preconstruction meetings, conducting routine inspections of active construction sites, coordinating with project CEI staff to ensure continued environmental compliance with FDEP NPDES permits, SFWMD ERPs, Water Use and ROW permits, USACE Section 404 permits and Sec 408 clearances, FKNMS permits, Miami-Dade permits for off-system roads, and NEPA commitments, as well as coordination with FDOT and regulatory staff. *Client: FDOT District 6, Contact: Mario Dominguez, P.E. (305) 470-5482, Project Duration: March 2018 – present, Primary Role: Project Manager*

Project Manager: Districtwide Mitigation Site Development, Maintenance and Monitoring, (Miami-Dade and Monroe Counties), FDOT District 6: Involves oversight and management of all District 6 mitigation sites. Specific duties and tasks include coordination and oversight of maintenance, completion of annual monitoring events, and creation of remediation/enhancement plans for existing or future mangrove, wetland, and seagrass mitigation areas. Project also entails developing specific scopes of work for maintenance contractors, conducting field oversight and inspection of contractor work operations, and documenting compliance with contract and permit requirements as well as data collection, recordation, analysis, and extensive report writing. *Client: FDOT District 6, Contact: Mario Dominguez, P.E. (305) 470-5482, Project Duration: May 2013 – present*

Selected major work performed to-date:

- *Lower Matecumbe Key Tidal Rock/Cactus Barren Mitigation:* conducting monitoring events, coordinating/overseeing treatment events, and managing supplemental site enhancement activities in this rare, ecologically imperiled community that supports at least three federally endangered plant species.

RYAN ST. GEORGE, MS

Senior Environmental Scientist

- *Lois Ryan Road Mangrove Mitigation:* conducted comprehensive site status evaluation and designed remedial mitigation and planting plan to regain permit compliance at this 6-acre site. Work also includes extensive agency coordination and permit modifications for updated monitoring criteria and supplemental mitigation at Everglades Mitigation Bank.
- *Boca Chica Lagoon Seagrass Mitigation:* developed modified monitoring plan for assessment of seagrass coverage and establishment within a 90-acre seagrass ROMA site, conducting ongoing coordination with regulatory agencies for credit calculation, allocation and tracking.

Project Manager: Continuing Professional Services – Environmental Engineering and Wetland Management, City of Weston: Involves continued contractor oversight and comprehensive management of over 2,200 acres of City-responsible wetland mitigation in western Broward County. Work includes mitigation site inspections, hydrologic observation, evaluation of treatment effectiveness, treatment prioritization, invoice reviews, public relations, and miscellaneous environmental support services. *Client: City of Weston, Contact: Karl Thompson (954) 385-2600 Begin/End Dates: July 2016 – present.*

Senior Environmental Scientist: Districtwide Continuing Services ITS Consultant – Two Consecutive Contracts, **Florida's** Turnpike Enterprise: This contract is a Continuing Services contract for ITS Design Services covering multiple areas within FTE system of toll roads. Services include the development of studies, concepts, design memorandums, and/or construction plans in relation to improving the Turnpike's Intelligent Transportation System (ITS), including any other incidental elements, including but not limited to: roadway, roadside, structures, signing and pavement markings, traffic operations, lighting, utility relocation, maintenance of traffic, cost estimates, environmental permits, environmental mitigation plans and other incidental items.

Project entails all natural resource inspections, delineations, data collection, analysis, and documentation (reports, ownership reviews, permit applications etc.) required to apply for and obtain any environmental or right-of-way permits needed to authorize installation or replacement of signage, conduit, support structures, and other related installations. *Contact: Anthony Washington, P.E. (407) 264 3199, AnneMarie Hammond (407) 264-3293, Project Duration: January 2017 – present*

Senior Environmental Scientist: I-395 / SR-836 Design-Build, (Dade County), FDOT District 6: The project entails reconstruction of I-395, SR-836, and a portion of I-95 from SW 17th Avenue west of I-95/Midtown Interchange to Biscayne Bay, a distance of approximately 1.5 miles. Improvements to the corridor are considered necessary to provide for the existing and projected traffic demand. Environmental support provided to-date includes all permit-related coordination and support to NEPA re-evaluation efforts. *Client: FDOT District 6, Contact: Maria Perdomo, PE, Ph: (305) 640-7186, Begin/End Dates: August 2018 – Present*

Senior Environmental Scientist: Districtwide Traffic Engineering and Safety Design Services, (Statewide**), Florida's Turnpike** Enterprise: Subconsultant to TEDS for environmental support services. Project entails all natural resource inspections, delineations, data collection, analysis, and documentation required to obtain any permits needed to authorize installation or replacement of signage, conduit, support structures, and other related installations. *Contact: Yang Zhao, P.E. (407) 264-3376, AnneMarie Hammond (407) 264-3293, Project Duration: August 2015 – present*

Senior Environmental Scientist: SR 500 (US 441), Widening & Reconstruction, (Lake County), FDOT District 5: Reconstruction of 4.1 miles of SR 500 from a four-lane rural roadway to a six-lane divided urban arterial including construction of a curb and gutter roadway with bicycle lanes and a raised median within an existing 100'-200' right-of-way from Lake Ella Drive to Avenida Central in Lake County. Work included coordination of drainage design and permitting for four retention ponds, and obtaining formal non-jurisdictional determination from the USACE. This project was shelved in 2014, and in early 2018, our team was asked to start move forward with the re-design and provide support District 5's re-evaluation efforts. This redesigned project will be delivered using 3D design. *Contact: Sarah Van Gundy, P.E. (386) 943-5551, Start/End Dates: September 2005 / July 2014 (Placed on Hold) / Re-start on Plans Update (Start/End Dates): May 2017 – present*

Senior Environmental Scientist: New Oxford Road Improvements Environmental Permitting Support, Seminole County: Conducting field wetland delineation using sub-meter GPS, providing wildlife habitat assessments, and environmental permitting support for a proposed new roadway alignment. Includes complicated coordination with the County, USACE and the SJRWMD related to development of a Cumulative Impact Analysis necessary to justify a larger-than-normal mitigation provided out-of-basin. *Reference: Rolando Raymundo, P.E. (407) 665 5715, Begin/End Dates: June 2015 – present, Primary Role: Sr. Environmental Scientist*

Senior Environmental Scientist: Statewide Arborist Services for Vegetation Management Permitting, FDOT Central Office: This contract provides support to FDOT Central Office for the statewide Vegetation Management Permitting Program pertaining to outdoor advertising. Work includes conducting tree and landscape evaluations within FDOT right of way and evaluation of proposed applications, including plan review for vegetation maintenance and development of environmental conflict maps. *Reference: Morris Pigott (850) 414-4574; Begin/End Dates: March 2014 – 2018*

METRIC ENGINEERING

PETER MEDICO, PE

CEI Senior Roadway/Bridge Inspector; CEI LEAD

TECHNICAL EXPERTISE

Bridge, Roadway, Drainage and Utilities Construction Management

Structural Analysis and Design of Pavement, Retaining walls and Buildings

Traffic Operations

Traffic Studies

YEARS OF EXPERIENCE

30 Years

PROFESSIONAL REGISTRATIONS

- Professional Engineer – FL #42654 (1990)

SKILLS/TRAINING

- OSHA Trenching and Excavation Competent Person
- FDEP Stormwater, Erosion & Sediment Control Inspector
- CTQP Final Estimates Levels I & II
- FDOT/ATSSA Advanced Maintenance of Traffic
- CTQP Asphalt Paving Levels I & II
- IMSA Traffic Signal Inspector Level I
- IMSA Traffic Signal Technician Level I
- IMSA Traffic Signal Construction Technician (*pending*)

EDUCATION

- B.S., Civil Engineering (Civil/Sanitary), University of South Florida (1988)
- Graduate Studies in Pavement Design & Geotechnical Engineering, University of Florida (1992)

PROFESSIONAL PROFILE

Mr. Medico has more than 30 years of experience focused on Bridge and Roadway Construction Engineering, Inspection (CEI) and Contract Administration. His work included quality assurance reviews, presentations to dispute review boards, claims analysis and claims resolution. His involvement encompasses public and private sector projects, major interstate and urban roadway design and construction management with emphasis on service and quality control. His recent assignments as the Sr. Project Engineer on various Florida Department of Transportation (FDOT) Districts 1, 3, 4, 6 and 7 and Broward County projects have provided him with hands-on quality CEI experience. Mr. Medico personally prepared and submitted five FDOT Final Estimates and supervised the preparation of 18 Final Estimates.

PROJECT EXPERIENCE

Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. *Contact: Michael S. Cleary, PE, Traffic Capital Projects Manager, (954) 357-5838; Budget: $5M Overall, Role: Senior Project Engineer*

Design-Build Services for Mast Arm Conversion – Groups 1 and 2, Broward County: Under Metric's Traffic Signalization and Signal Engineering Improvement (SEI Contract, Metric project provided the engineering design, project management and construction services for the procurement, installation, integration and testing required to convert traffic signal systems at 35 intersections from span-wire support to mast arm support - Broward County Work Authorizations ME-0017, ME-0034 and ME-0035 (construction contracts). Responsibilities included design project management, design plans review, shop drawings review, response to Contractor's Requests for Information (RFI). Management of clerical, office engineering and inspection staff for full contract administration and Construction Engineering and Inspection (CEI) operations. The work involved utilities coordination, drainage, subgrade, asphalt base and pavement, curbs and sidewalks with ADA retrofits, signalization, signing and pavement markings. Additional responsibilities include interpretation and of plans and specifications and quality assurance of all construction activities though the management of inspection and materials sampling and testing staff; review of construction schedule, maintenance of traffic and environmental permit compliance reviews, negotiation and processing of supplemental agreements and claims, and preparation and submittal of final estimates. *Client: Broward County, Contact: Michael S. Cleary, PE, Traffic Capital Projects Manager, (954) 357-5838; Overall Contract Start/End Dates: 05/2011 - 12/2016, Project Budget: $17M; Metric Fee: $1.128M, Role: Senior Project Engineer*

Structural Analysis and Design of Numerous Miscellaneous Signalization, Signing and Lighting Structures; and Retaining Walls: *This work included the structural design of new signalization mast-arms and drilled shaft footings; the structural design of DMS Cantilevered Trusses and foundations, ITS poles and foundations for cameral mounts, roadway lighting and muli-post sign structures and foundations This work also included the analysis of existing structures such as mast arms and strain poles to provide recommendation as to the structural integrity of proposed modifications and installations of additional signals, signs and other*

PETER MEDICO, PE

CEI Senior Roadway/Bridge Insepctor; CEI LEAD

appurtenances as needed by maintaining agencies. This work also included the review and acceptance of contractor submitted shop drawings for all new miscellaneous structures designed. Clients: FDOT Districts 5 and 6, Broward County, Miami-Dade County, Pinellas County and Orange County. Role: Structural Design Engineer

I-75 from South of North Jones Loop to North of US 17, FDOT District 1: This $28.6-million project involves expanding approximately 4.3 miles of I-75 from 4 to 6 lanes including adding new inside travel lanes and shoulders, as well as, milling, resurfacing, and overbuilding the existing travel lanes to correct the cross slopes. It also includes widening of the N. Jones Loop Bridges and Riverside Drive bridges, new linear dry retention swales; under deck drainage pipe system to be installed beneath the US 17 overpass bridge; 8,000 cubic yards of subsoil excavation which includes almost 2,000 cubic yards in areas designated to be contaminated with arsenic; new high mast lighting at the Interchanges; adjustments to existing ITS components, as well as, replacement of the quartz piezoelectric weigh-in-motion (WIM) loop sensors on the N. Jones Loop Road access ramps; replacement of 34,000 linear feet of guardrail; and replacement of the Traffic Monitoring Site located just south of Airport Road. *Client: FDOT District 1, Contact: Marléna Gore, (863) 272-5008, Role: Senior Project Engineer*

PRIOR WORK EXPERIENCE

North Roosevelt Reconstruction in Key West, FL, FDOT District 6: Mr. Medico served as a Senior Project Engineer on this project which involved total roadway reconstruction to include seawall bulkheads, water and sewer utilities, drainage, subgrade, asphalt base and pavement, signalization, signing and pavement markings. Responsibilities include interpretation and of plans and specifications and quality assurance of all construction activities though the management of inspection and materials sampling and testing staff; review of construction schedule, maintenance of traffic and environmental permit compliance reviews, negotiation and processing of supplemental agreements, and preparation and submittal of final estimate. *Client: FDOT District 6, Start/End Dates: 07/2013 - 06/2015, Reference: Felix Rodriguez, Role: Senior Project Engineer*

Area K Resurfacing, Sarasota County: Mr. Medico served as a Project Engineer on this project which included milling, resurfacing, sidewalk replacement, signalization, signing and pavement markings for 2.6 miles of suburban arterial roadway, including McIntosh Road from Bee Ridge Road to Little John Trail and Bahia Vista Street from Railroad Tracks to McIntosh Road. *Client: Sarasota County, Contact Person: Art Powell, (941) 445-7111; Budget: $2.5M, Start/End Dates: 12/2012 - 06/2013, Role: Project Engineer*

DW Local Agency Program, FDOT District 6: Mr. Medico was responsible for staff support in the management of more than 250 LAP projects as part of the American Recovery and Reinvestment Act (ARRA) Supplemental Services and LAP Support Additional Services. Specific work involved administration and tracking several LAP projects though all phases of development, including planning, design, construction, and CEI. Responsibilities included assisting the District LAP Administrator with LAP agency certification; LAP agreement processing; general project management; LAP invoicing and federal funding reimbursement; and coordinating audits from the state LAP administrator and Federal Highway Administration. Duties also included the drafting of FDOT District 6 LAP process maps and LAP Manual. *Reference: Hong Benitez, PE, (305) 470-5492; Budget: Varied by TWO., Client: FDOT District 6, Start/End Dates: 12/2010 - 11/2012, Start/End Dates: 07/2010 - 09/2010, Role: LAP Project Manager*

Milling and Resurfacing Hybrid Projects, FDOT District 1: Mr. Medico served as a CEI Project Manager on the following projects under this contract:

- I-75 (Alligator Alley), from Turnback Slough to Faka Union Canal, 6 miles of milling and resurfacing
- U.S. 41 from SR 951 to Auto Village Way, 3 miles of resurfacing and guardrail safety improvements
- SR 29 inverted profile pavement marking in Collier County

The projects were managed out of FDOT District 1's Fort Myers Operation Center. *Client: FDOT District 1, Reference: Luella Pierce, Project Administrator, (239) 656-7800; Budget: Varied by TWO., Start/End Dates: 05/2009 - 09/2009, Role: CEI Project Manager*

Treasure Island Causeway Bascule Bridge Replacement, City of Treasure Island, FL: Mr. Medico performed on this project which consisted of replacing an existing bascule bridge with a new Bascule Bridge and reconstruction of the 1-mile roadway approaches. His responsibilities included performing quality assurance field reviews, processing contractor pay requests, claims analysis and recommendations, preparing entitlement analyses and engineering cost estimates and processing change orders; preparing and submitting the final estimate with all backup and support information, responding to the City of Treasure Island and FDOT inquiries resulting from site visits. Compiling all final documentation for review and acceptance for the FDOT LAP Program. *Reference: Hal Bruce, Construction Project Manager, (727) 547-4575; Budget: $43M, Start/End Dates: 09/2007 - 01/2008, Role: Project Engineer*

Eleven-Mile Creek Bridge Replacement in Escambia County, FDOT District 3: Mr. Medico performed on this project which consisted of the replacement of a 94-meter long, low-level bridge, including the construction of a temporary detour (ACROW) bridge, 600-millimeter concrete piling, pile caps, and pre-stressed beams. The bridge was totally submerged from Hurricane George flooding during construction. The bridge approach roadway was washed away but was rebuild. *Supervisor: James (Sandy) Daniel, PE, (904) 200-1677; Budget: $1.2M, Start/End Dates: 1989 - 1999, Role: Senior Project Engineer*

Ron DeSantis, Governor

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

MEDICO, PETER JOHN

525 MARMORE AVENUE
CORAL GABLES FL 33146

LICENSE NUMBER: PE42654

EXPIRATION DATE: FEBRUARY 28, 2021

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County Commissioners

9/23/2019
Broward County Board of County Commissioners
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Certificate of Completion

Peter J. Medico

Has Completed a Florida Department of Transportation Approved Maintenance of Traffic (MOT) Advanced Course.

09/24/2019	37	Catherine Witt	11087
Expiration Date	FDOT Provider #	Instructor	Certificate #

ATSSA
SAFER ROADS SAVE LIVES

ATSSA
15 Riverside Parkway Ste.100
Fredericksburg, FL
www.atssa.com
donna.clark@atssa.com

FDOT

For more information about Maintenance of Traffic (MOT) or to verify this

www.motadmin.com

Certificate of Completion

Peter John Medico P.E. # 42654

For successfully completing the following continuing education course:

Bridge Inspection, Maintenance, and Repair

PDH: 16 hrs

Online Course No. 2019100

Instructor: John Southard, M.S., P.E.

Completion Date: 02/26/2019

John Southard, PE
President
PDHLibrary Provider #4849
Email:mail@PDHlibrary.com
Phone/Fax: 352-367-2526

Certificate of Completion

Peter John Medico P.E. # 42654

For successfully completing the following continuing education course:

2017 Advanced Florida Building Code - Significant Code Changes

PDH: 1 hrs

Online Course No. 856.0

Instructor: BCIC, LLC

Completion Date: 02/26/2019

John Southard, PE
President
PDHLibrary Provider #4849
Email:mail@PDHlibrary.com
Phone/Fax: 352-367-2526

Certificate of Completion

Peter John Medico P.E. # 42654

For successfully completing the following continuing education course:

2019 Ethics for Florida Engineers

PDH: 1 hrs

Online Course No. 02018002

Instructor: Thomas Sputo, Ph.D., P.E., S.E., SECB

Completion Date: 02/26/2019

John Southard, PE
President
PDHLibrary Provider #4849
Email:mail@PDHlibrary.com
Phone/Fax: 352-367-2526

Certificate of Completion

Peter John Medico P.E. # 42654

For successfully completing the following continuing education course:

FLORIDA LAWS AND RULES (2019)

PDH: 1 hrs

Online Course No. 02018001

Instructor: John Southard, M.S., P.E.

Completion Date: 02/26/2019

John Southard, PE
President
PDHLibrary Provider #4849
Email:mail@PDHlibrary.com
Phone/Fax: 352-367-2526

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Florida Department of Transportation's
Construction Training Qualification Program

Certification of Qualification

Peter J. Medico

Has completed the requirements for:

Final Estimates - Level 1

Expiration Date: July 7, 2022*

CTQP
Construction
Training Qualification Program
www.ctqpflorida.com

Melissa Wildermuth
Melissa Wildermuth
CTQP Program Administrator

*Continued Qualification is subject to FDOT procedure 700-000-01.

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FDOT

Florida Department of Transportation's
Construction Training Qualification Program

Certification of Qualification

Peter J. Medico

Has completed the requirements for:

Final Estimates - Level 2

Expiration Date: August 24, 2022*

CTQP
Construction
Training Qualification Program
www.ctqpflorida.com

Melissa Wildermuth
Melissa Wildermuth
CTQP Program Administrator

*Continued Qualification is subject to FDOT procedure 700-000-01.

9/23/2019

Peter J. Medico

is hereby certified as a

Traffic Signal Inspector

by completing all requirements and examination for certification
on 6/28/2019

Valid thru 6/28/2022
Certification #SI_55585

Toby Cummings

Toby Cummings, CAE - Executive Director

Broward County Board of County Commissioners

Your Partner in PUBLIC SAFETY

Congratulations on obtaining your IMSA Certification. Below is your card, and you can print your current certification card or certificate any time by logging into your IMSA profile at www.IMSAsafety.org (click Sign In at the top of the page).

All IMSA certifications are valid for a three-year period from date of issue. The expiration date can be found on the certificate and certification card. Renewal requirements must be completed prior to the expiration date of each certification.

For detailed information on Renewal Requirements visit: www.IMSAsafety.org/certrenew

Renewal Requirements:

Complete a personal log of your continuing education by documenting training and/or certification(s) received. Documentation can be recorded online in your IMSA profile OR by downloading the Renewal Packet found on the Renewal Requirements page. Certificates of completion, transcripts and any other relevant documentation can be uploaded on the IMSA website.

Options for Renewal:

- Continuing Education
- Attending Certification Course
- Achieving the Next Level Certification

Documentation

It is the certification holder's responsibility to submit proof of continuing education. Continuing Education Credits (CECs) can be submitted for approval online in your IMSA profile.

Renewal After Expiration

The certification is no longer valid after the expiration date. However, you may reinstate your certification within one year of the expiration date by documenting 16 CEC hours for most certifications. If the certification is not reinstated within one year, you must renew through the normal certification process by taking the current certification exam at the highest level previously attained and paying the regular certification exam fee. Only the regular certification exam fees will be due, and retake of prerequisites will not be required. IMSA will not recognize any IMSA certificate(s) without an expiration date.

CERTIFIED PUBLIC SAFETY TECHNICIAN

597 Haverty Court, Suite 100
Rockledge, FL 32955
321-392-0500 www.IMSAsafety.org

Name: Peter J. Medico
IMIS ID: 55585
Section: Florida
Signature:

Certification and Expire Date

Traffic Signal Inspector - 6/28/2022

Conforms to PennDOT Pub 408 Section 901.3(y)

Peter J. Medico

is hereby certified as a

Traffic Signal Technician Level I

by completing all requirements and examination for certification
on 7/3/2019

Valid thru 7/3/2022
Certification #AA_55585

Toby Cummings

Toby Cummings, CAE - Executive Director

BidSync

Broward County Board of
County Commissioners

Your Partner in PUBLIC SAFETY

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Options for Renewal:

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- Achieving the Next Level Certification

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CERTIFIED PUBLIC SAFETY TECHNICIAN

597 Haverty Court, Suite 100
Rockledge, FL 32955
321-392-0500 www.IMSAsafety.org

Name: Peter J. Medico
IMIS ID: 55585
Section: Florida
Signature:

Certification and Expire Date

Traffic Signal Inspector - 6/28/2022
Traffic Signal Technician Level I - 7/03/2022

Conforms to PennDOT Pub 408 Section 901.3(y)

METRIC ENGINEERING

MAURICIO PINZON

Project Administrator/Contract Support Specialist

TECHNICAL EXPERTISE

Construction Engineering & Inspection (CEI)

YEARS OF EXPERIENCE

18 Years

PROFESSIONAL REGISTRATIONS

Professional Engineer - Colombia

CERTIFICATIONS

- CTQP Asphalt Paving Level I & II
- CTQP Earthwork Construction Inspection Level I & II
- CTQP Concrete Field Technician Level I
- CTQP Final Estimates Level I & II
- CTQP Pile driving
- CTQP Drilled Shaft
- IMSA Traffic Signal Inspector
- IMSA Traffic Signal Construction Technician (*pending*)
- Advanced MOT ATSSA
- TROXLER Nuclear Gauge Safety/Hazmat Training
- APNGA Annual Refresher Portable Nuclear Gauge
- FDOT Signalization Construction Training/Slap Team
- Storm Water Management
- CSX Roadway Worker Protection
- ATSSA Advanced Maintenance of Traffic
- Construction Management Certificate (2012)

EDUCATION

- B.S. Civil Engineering, Colombia (2000)
- Graduate Studies in Roadway Pavement Design & Geotechnical Engineering, Colombia (2006)

PROFESSIONAL PROFILE

Mr. Pinzon has over 18 years of experience in roadway design and construction engineering inspection projects. His experience includes inspection of signalization, structural fabrication, concrete, drainage structure installation, earthwork, asphalt paving, lighting, ensuring contractor's compliance with MOT, and is proficient with Broward County, FDOT and SFWMD reporting and documentation procedures. Mr. Pinzon also worked as a Construction Engineer on several projects for the National Highway Institute and Urban Development Institute in Bogotá, Colombia.

REPRESENTATIVE PROJECTS

01/2016 – Present: Contract Support Specialist/Project Administrator: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. ADA upgrades at crosswalks, signalization improvements. Provided guidance and resolution on field changes that take place, coordinate the resolution of all contractor's RFIs and shop drawing submittals, submits all reports monitors the budget made the final submittal and closeout of the project. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. *Project Length: Countywide; Budget: $5,000,000*

Fiber Optic Improvements project at Broward Blvd and Oakland Park Blvd, Broward Coun: CEI for the Fiber Optic Installation along the corridors, following the Broward County and FDOT Standards & Specifications. Inspection of materials , utility coordination , reviewing and coordination of field adjustments, monitoring the compliance of erosion control and the implementation of MOT devices within the project limits. Perform daily reports of the work performed, verifying quantities and directional bore logs.

Intersection Improvements at : NW 31st Ave and NW 26th ST & Martin Luther King Blvd and Blount Rd, Broward County: CEI services for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ITS, vehicle detection camera systems. Roadway improvements include widening, pavement, pedestrian facilities and ADA upgrades at crosswalks, signalization improvements. Perform daily reports of the work performed, verifying quantities and directional bore logs, utility coordination , reviewing and coordination of field adjustments.

PRIOR WORK EXPERIENCE

01/2008 – 02/2016: Multiple Roles: RJ Behar and Company (Pembroke Pines, Florida): Representative projects in various roles such as Project Administrator, Construction Project Engineer, FDOT Contract Support Specialist and Senior Inspector include:

02/2013 – 03/2016: Project Administrator/Contract Support Specialist: US-1/Federal Highway Beautification CEI Services (Local Agency Program (LAP)) Project, Delray Beach, FL: Mr. Pinzon was responsible for overseeing and monitoring all aspects of the project. Provided guidance and resolution on field changes that take place, coordinate the resolution of all contractor's RFIs and shop drawing submittals, scanned all documentation into the LAP-IT program, and made the final submittal of the PA Material Statement and closeout of the project. He was also responsible for observing the schedule and budget. Project included signalization improvements such as new mast arm installations, curb and sidewalk modifications at intersections and updates to the interconnect

MAURICIO PINZON

Project Administrator/Contract Support Specialist

system. As a CSS, he was responsible for the progress and final estimates, processing contract changes, EEO compliance, and finalizing all paper work for the project. *Project Length: 2.4 miles*

01/2013 – 08/2013: Assistant Contract Support Specialist/Senior Inspector: Resurfacing of SW 10th Street (SR-869) from Powerline Road to Newport Centre Drive Hybrid Project, FDOT District 4: Mr. Pinzon was responsible for managing utility coordination; reviewing RFI's and requests for clarification; verifying materials; preparing daily inspection reports; monitoring compliance with MOT plans; reviewing/analyzing change orders/pay requests; monitoring the construction activities/procedures. The scope consisted of milling, resurfacing, adding a shoulder and sidewalks on the north side of the roadway. ADA upgrades at crosswalks, signalization improvements, minor drainage improvements, and guardrail enhancements over the existing bridge structure. *Project Length: 1.8 Miles; Construction Budget: $13M.*

07/2012 – 01/2013: Project Administrator/Contract Support Specialist: W. 16th Avenue from W. 76th Street to W. 84th Street in Hialeah, FL (LAP), FDOT District 6: Mr. Pinzon was responsible for overseeing and monitoring all aspects of the project provided guidance and resolution on field changes that took place, responds to all contractor's RFIs and shop drawing submittals, submits all reports and monitors the budget. Scope includes complete roadway reconstruction, curb and gutter, drainage improvements, pavement milling and resurfacing, signing and pavement markings and grading of the adjacent swale areas and sod restoration. as well as acting as a liaison between the Contractor, FDOT District Six personnel and the City. *Project Length: 0.48 miles*

05/2012 – 07/2012: Inspector: C-4 Quick Start Floodwall - Construction Management in Miami-Dade County, FL, South Florida Water Management District (SFWMD): The scope included the construction of a reinforced concrete floodwall on the north bank of the C4 Canal between SW 92nd Avenue and SW 94th Avenue The work also included demolition, excavation, regrading, tree removal, sodding and an integrated drainage system featuring a storm water collection swale with Type C ditch bottom inlets and corrugated aluminum pipe outfalls.

01/2011 – 05/2012: Contract Support Specialist: North County Neighborhood Improvements Project (Phase II), Broward County (Broward County Water and Wastewater Department): Supervised the field inspection team; provided guidance and resolution on field changes that take place, responded to all contractor's RFIs and shop drawing submittals quantity verification, preparation of monthly and final estimates documentation, contract work orders/change orders and supplemental agreements projections of costs and quantities. He also reviewed invoices and tracked material certification documents.

09/2010 – 01/2011: Contract Support Specialist/Senior Inspector: W. 36th Avenue from West 76th Street to West 84th Street (ARRA), City of Hialeah

Scheduled field meetings and attended progress meetings; managed utility coordination; reviewed RFI's and requests for clarification; checked shop drawings for conformity to plans; Inspected the street lighting, curb, gutter and drainage improvements, prepared daily reports; monitored compliance with MOT plans; reviewed change orders; and completed the project closeout. Project included the installation of a new pedestrian signal system. *Project Length: 0.5 miles*

01/2010 – 09/2010: Contract Support Specialist/Inspector: W. 53rd Street from W. 12th Avenue to W. 16th Avenue, City of Hialeah, FL: Mr. Pinzon scheduled field meetings and attended progress meetings; managed utility coordination; reviewed RFI's and requests for clarification; prepared daily inspection reports; reviewed and analyzed change orders and pay requests; and project closeout. *Project Length: 0.5 miles*

10/2008 – 02/2010: Roadway Engineer/Inspector: SR-820/Pines Boulevard and I-75/SR-93 Interchange (Local Agency Program (LAP)) Project, City of Pembroke Pines, FL: Mr. Pinzon was responsible for overseeing the asphalt, landscaping and earthwork. Further project scope included a new retaining wall for the widening of the existing bridge on Pines Boulevard over the I-75 Interchange, new pedestrian traffic barrier, installation of 5 new mast arm locations and two new controller cabinets for signalization improvements, high mast lighting, landscaping, and access management improvements along Pines Boulevard in District 4. *Project Length: 1.3 miles; Construction Cost: $11.2M.*

01/2007 – 01/2008: Staff Engineer: Metric Engineering Inc. (West Palm Beach, FL)

01/2000 – 01/2006: Project Engineer: CEI and Construction Engineer on several projects for National Highway Institute and Urban Development Institute in Bogotá, Colombia.

Certificate of Completion

Mauricio E. Pinzon

Has Completed a Florida Department of Transportation Approved Temporary Traffic Control (TTC) Advanced (Refresher) Course.

06/12/2021	37	Richard Cabrera	29723
Date Expires	FDOT Provider #	Instructor	Certificate #

ATSSA
SAFER ROADS SAVE LIVES

ATSSA
15 Riverside Parkway Ste.100
Fredericksburg, VA,
www.atssa.com
donna.clark@atssa.com

FDOT

For more information about Temporary Traffic Control (TTC) or to verify this certificate

www.motadmin.com

Traffic Signal Program
Mauricio E. Pinzon
Is Hereby Certified as a
Traffic Signal Inspector
By completing all requirements and examination.

Cert #	Date	Good Thru
SI_105344	6/8/2018	6/8/2021

Technician CTQP Qualification Report

Date Ran: 9/10/2019 1:50:00 PM

Technician Name: Mauricio Pinzon

Qualification Area	Qualification Status Code	Qualification Date	Expiration Date
99997 - FINAL ESTIMATES LEVEL 1			
	VALID	4/30/2018	4/30/2023
99999 - FINAL ESTIMATES LEVEL 2			
	SUPERSEDED	4/30/2013	4/30/2018
	VALID	4/30/2018	4/30/2023
QQ060101 - ASPHALT PAVING TECHNICIAN - LEVEL 1			
	VALID	11/19/2014	11/19/2019
QQ060104 - ASPHALT PAVING LEVEL 2			
	SUPERSEDED	11/19/2009	11/19/2014
	VALID	11/19/2014	11/19/2019
QQ060204 - CONCRETE FIELD TECHNICIAN - LEVEL 1			
	SUPERSEDED	2/14/2009	2/14/2014
	VALID	1/25/2014	1/25/2019
QQ060301 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 1			
	SUPERSEDED	10/30/2008	10/30/2013
	VALID	10/23/2013	10/23/2018
QQ060304 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 2			
	SUPERSEDED	10/16/2009	10/16/2014
	VALID	10/9/2014	10/9/2019
QQXX8888 - DRILLED SHAFT INSPECTION			
	SUPERSEDED	12/8/2012	12/8/2017
	VALID	4/27/2017	12/9/2022
QQXX9999 - PILE DRIVING INSPECTION			
	VALID	2/16/2013	2/16/2018
	VALID	5/4/2018	5/4/2023

Exam Name	Course Name	Exam Date	Score	Exam Result
3 Months Experience Asphalt Paving Operations or Asphalt Roadway Testing			100	Met
30 Days Experience on a construction project involving earthwork operations			100	Met
ACI Concrete Field Testing Technician Grade 1 Certification			100	Met
Asphalt Paving - Level 1 Proficiency Exam - Rel.2	Asphalt Paving - Level 1	01/06/2009	100	Pass
Asphalt Paving - Level 1 Written Exam - Rel.4	Asphalt Paving - Level 1	01/06/2009	100	Pass
Asphalt Paving - Level 2 Written Exam - Rel. 6	Asphalt Paving - Level 2	11/19/2009	76	Pass
Asphalt Paving - Level 2 Written Exam - Rel. 6	Asphalt Paving - Level 2	11/19/2014	88	Pass

Drilled Shaft Inspection Proficiency Exam - Rel.4	Drilled Shaft Inspection	12/08/2012	100	Pass
Drilled Shaft Inspection Written Exam - Rel.5	Drilled Shaft Inspection	12/08/2012	76	Pass
Drilled Shaft Inspection Written Exam - Rel.7	Drilled Shaft Inspection	03/29/2017	68	Fail
Drilled Shaft Inspection Written Exam - Rel.7	Drilled Shaft Inspection	04/27/2017	84	Pass
Earthwork Construction Inspection - Level 1 Proficiency Exam	Earthwork Construction Inspection - Level 1	10/31/2008	100	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 2	Earthwork Construction Inspection - Level 1	10/30/2008	88	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	10/23/2013	82	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 2	10/16/2009	76	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 5	Earthwork Construction Inspection - Level 2	10/09/2014	84	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.3	FDOT Concrete Field Inspector Spec	12/16/2008	42	Fail
FDOT Concrete Field Inspector Spec Written Exam - Rel.3	FDOT Concrete Field Inspector Spec	06/24/2009	84	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.4	FDOT Concrete Field Inspector Spec	06/26/2014	68	Fail
FDOT Concrete Field Inspector Spec Written Exam - Rel.4	FDOT Concrete Field Inspector Spec	02/20/2015	82	Pass
Final Estimates - Level 1 Written Exam - Rel.5	Final Estimates - Level 1	04/04/2012	90	Pass
Final Estimates - Level 2 Written Exam - Rel. 11	Final Estimates - Level 2	04/27/2018	80	Pass
Final Estimates - Level 2 Written Exam - Rel. 6	Final Estimates - Level 2	04/30/2013	80	Pass
Monitored 10 Shafts, at least 5 Shafts constructed with wet method			100	Met
Monitored 15 Driven Piles, at least 10 Piles driven with Open Diesel Hammers			100	Met
Nuclear Safety Certification			100	Met
Pile Driving Inspection Written Exam - Rel.6	Pile Driving Inspection 1	02/16/2013	76	Pass
Pile Driving Inspection Written Exam - Rel.8	Pile Driving Inspection 1	05/04/2018	82	Pass

Abadallah "Abi" Asaseh

Senior Inspector

TECHNICAL EXPERTISE

Construction Engineering Inspection

YEARS OF EXPERIENCE

25 Years

CERTIFICATIONS

- CTQP Asphalt Paving Level Levels I & II
- CTQP Earthwork Level 1
- CTQP Drilled Shaft Inspection S
- CTQP Final Estimates Levels I & II
- CTQP Concrete Field Level 1
- CTQP QC Manager
- IMSA Traffic Signal Inspector
- IMSA Traffic Signal Construction Technician (pending)
- ACI Concrete Level 1
- Troxler Hazmat
- Florida Stormwater and Erosion Control
- Critical Structures in Construction
- ATSSA MOT Intermediate
- MSE Wall Inspection
- OSHA 10 HOUR Occupational Safety & Health
- CSX Railroad Safety

EDUCATION

B.S., Civil Engineering

PROFESSIONAL PROFILE

Mr. Asaseh has more than 25 years construction experience with the last 19 years specifically for FDOT roadway and bridge construction projects in southeast Florida. Mr. Asaseh is knowledgeable in pay item measuring, computations, and accurate site source record documentation. He is an excellent team player and mentors the staff who are new to the industry. He has worked on projects that include signalization, roadway widening, guardrail, drainage, sound walls, bridges, earthwork, concrete, earthwork, ITS, signage and pavement markings, landscaping, and toll facilities.

REPRESENTATIVE PROJECTS

Inspector: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. ADA upgrades at crosswalks, signalization improvements. Provided guidance and resolution on field changes that take place, coordinate the resolution of all contractor's RFIs and shop drawing submittals, submits all reports monitors the budget made the final submittal and closeout of the project. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. *Project Length: Countywide; Budget: $5,000,000*

Fiber Optic Improvements project at Broward Blvd and Oakland Park Blvd, Broward County: CEI services for the Fiber Optic Installation along the corridors, following the Broward County and FDOT Standards & Specifications. Inspection of materials, utility coordination , reviewing and coordination of field adjustments, monitoring the compliance of erosion control and the implementation of MOT devices within the project limits. Perform daily reports of the work performed, verifying quantities and directional bore logs.

Intersection Improvements at NW 31st Ave and NW 26th ST & Martin Luther King Blvd and Blount Rd Broward County: CEI services for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ITS, vehicle detection camera systems. Roadway improvements include widening, pavement, pedestrian facilities and ADA upgrades at crosswalks, signalization improvements. Perform daily reports of the work performed, verifying quantities and directional bore logs, utility coordination , reviewing and coordination of field adjustments.

Everglades Holiday Park Bridge Replacement Project, Broward County: The work included construction of a utility bridge for steel fuel pipe, electrical conduits and DIP force main. The utility bridge consisted of precast concrete piles, reinforced concrete pile caps and pre-casted, pre-stressed concrete deck slab units. The work included the replacement of an existing bridge that was comprised of concrete piling, pile caps, steel girder beams and reinforced concrete deck slab. The new bridge was constructed with pre-stressed concrete piles, reinforced concrete pile caps and pre-stressed longitudinal deck beams. The new bridge deck consisted of fiber reinforced concrete. The work also included the construction of a separate utility bridge to carry a fuel supply line, electrical conduits and sanitary sewer force main. The new utility bridge was constructed similarly to the main bridge. The construction project was phased to provide continuous maintenance of traffic to and from Everglades Holiday Park. Therefore half the new bridge was constructed while traffic was maintained on the old bridge. Then two way traffic was shifted to the half the new bridge while the old bridge was demolished. Then the remaining half of the new bridge was constructed behind concrete bridge barrier wall.

Abadallah "Abi" Asaseh

Senior Inspector

Florida's Turnpike Enterprise, Port St. Lucie Blvd Interchange Turnpike Improvements (June 2018 to Feb 2019). Mr. Asaseh served as a Senior Inspector for improvements under this Contract that consisted of the addition of a northbound right turn lane and southbound right turn lane at the SW Bayshore Blvd. / Port St. Lucie Blvd. intersection. The project also included minor widening on both sides of the existing roadway and a shift in the location of the concrete traffic separators. Jobsite Responsibilities: Monitoring the Contractor's onsite construction activities and inspecting materials entering into the work in accordance with the plans, specifications, and special provisions for the Construction Contract to determine that the projects are constructed in reasonable conformity with such documents. Maintain detailed accurate records of the Contractor's daily operations and of significant events that affect the work. Reference: CPM Roxanne Riggs (954)934-1296

FDOT D4, I-75 Express Lanes Segment D, Design-Build (May 2015 to May 2018) Mr. Asaseh served as a Senior Inspector for this Design-Build project for the I-75 Express Lanes which extends 3.7 miles along I75 from south of Sheridan Street to north of Griffin Rd. The improvements within the existing I-75 median consist of a barrier wall divided 4-lane tolled roadway, with 6-foot paved inside shoulders, and 12-foot (10 feet paved) outside shoulders. The project also includes the reconstruction of the Sheridan Street Interchange, widening of the existing Sheridan Street Overpass Bridge including complete deck replacement; a new Express Lanes bridge over the C-11 Canal, milling and resurfacing of the I-75 General Purpose Lanes; temporary and permanent retaining walls; drainage; 23,580 LF of sound walls; tolling gantries and associated infrastructure including buildings; Intelligent Transportation System (ITS); signing and pavement markings; signalization; lighting; and landscaping. Estimated Construction Cost: $80 million. Jobsite Responsibilities: Monitoring the Contractor's on-site construction activities and inspecting materials entering into the work in accordance with the plans, specifications, and special provisions for the Construction Contract to determine that the projects are constructed in reasonable conformity with such documents. Maintain detailed accurate records of the Contractor's daily operations and of significant events that affect the work. Reference: CPM Antonio Castro 954- 958-7671.

Florida's Turnpike Enterprise, Sawgrass Expressway All Electronic Tolling (Oct 2013 to May 2015) Mr. Asaseh served as a Senior Inspector for this mainline toll plaza conversion. All cash lanes removed from the Sunrise and Deerfield toll plazas. The project also included widening the northbound exit ramp to Sunrise Boulevard and adding one right-turn lane, signalized, adding a tolling gantry at the southbound entrance ramp from Pat Salerno Drive, and widening the southbound Turnpike exit to the Sawgrass Expressway from one to two lanes. Project Responsibilities: Jobsite responsibilities included; monitoring erosion control and NPDES compliance, maintenance of traffic, earthwork operations, subgrade and base operations, drilled shaft installations, gantry support structure, signalized interchange inspections, structural asphalt and friction course inspection, toll plaza reconstruction, buried electrical, lighting, signalization, toll plaza concrete pavements, pavement marking inspections, highway signs and landscaping. Reference: CPM Pacifico Castillo, P.E., 954-444-8050.

Florida's Turnpike Enterprise, Turnpike PGA Boulevard NB Exit/Entrance Ramp Bridge Replacement (Oct 2012 to Oct 2013) Mr. Asaseh served as an Inspector for this project replacing the Turnpike's PGA Boulevard ramp bridge with a new higher bridge to provide additional clearance for taller vehicles. The new bridge has three lanes – one eastbound lane for the northbound on-ramp and two westbound lanes for the northbound off-ramp. Project Responsibilities: Jobsite responsibilities included insuring the proper set up and maintenance of contractor's MOT, overseeing paving and milling operations to include the recording and reporting of cross slope measurements, the verification of asphalt temperatures and spread rates, performing the layout of QC and IV cores and observing and documenting rolling straight edge deficiencies, ensuring proper layout and application of pavement markings, ensuring the contractor complied with the approved CQC plans and specifications, Also, performed inspections on embankment, MSE wall, drainage, subgrade, and base compaction and VT nuclear density testing, various material sampling and testing, guardrail installations, highway sign installations. Documented pay quantity measurements and computations in appropriate site source record(s). Reference: CPM Ken Hudson 954-934-1134.

FDOT D4, SR-7 Bridge Widening over the C-51 Canal Inspector (Jul 2012 to Oct 2012) Mr. Asaseh served as an Inspector for this project which consisted of the widening of the SR-7 Bridge over the C-51 canal. Project Responsibilities: Jobsite responsibilities included monitoring of the contractor's maintenance of traffic, inspection and documentation of contractor's activities, pile driving operations, bridge sub-structure and super-structure steel and cast-in-place (CIP) concrete placement, roadway widening, curb and gutters, sidewalks, structural asphalt and friction courses. Reference: Special Projects Manager David Young, P.E., 561-684-4000.

FDOT D4, SR-823 (Flamingo Road) Reconstruction from Pines Blvd. to Griffin Road (Feb 2011 to June 2012) Mr. Asaseh served as an Inspector for these concurrent projects which consisted of the reconstruction of 3.8 miles of Flamingo Road and misc. widening and resurfacing of University Drive. Project Responsibilities: Jobsite responsibilities for these projects included roadway widening, drainage installations, milling and resurfacing, pavement markings, signalization, pedestrian sidewalk, crosswalk and traffic loops. **Ref: E "J" Jalali, PE, 954**-958-7641.

Technician CTQP Qualification Report

Date Ran: 9/6/2019 1:46:57 PM

Technician Name: Abadallah Asaseh

Qualification Area	Qualification Status Code	Qualification Date	Expiration Date
99997 - FINAL ESTIMATES LEVEL 1			
	SUPERSEDED	6/28/2005	6/28/2010
	VALID	10/22/2013	10/22/2018
	VALID	9/27/2018	10/23/2023
99999 - FINAL ESTIMATES LEVEL 2			
	SUPERSEDED	10/22/2013	10/22/2018
	VALID	9/27/2018	10/23/2023
QC9999 - QC MANAGER			
	VALID	9/19/2013	1/1/2099
QQ060101 - ASPHALT PAVING TECHNICIAN - LEVEL 1			
	VALID	10/9/2014	10/9/2024
QQ060104 - ASPHALT PAVING LEVEL 2			
	SUPERSEDED	4/30/2003	4/30/2008
	SUPERSEDED	11/10/2009	11/10/2014
	VALID	10/9/2014	10/9/2024
QQ060204 - CONCRETE FIELD TECHNICIAN - LEVEL 1			
	SUPERSEDED	2/13/2003	7/24/2004
	SUPERSEDED	7/14/2006	5/21/2011
	VALID	7/8/2011	7/8/2016
	VALID	11/11/2016	11/11/2021
QQ060301 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 1			
	SUPERSEDED	10/23/2002	10/23/2007
	SUPERSEDED	10/11/2007	10/11/2012
	VALID	8/20/2013	8/20/2018
QQ060304 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 2			
	SUPERSEDED	5/29/2003	5/29/2008
	SUPERSEDED	6/20/2008	6/20/2013
	VALID	5/23/2013	5/23/2018
	VALID	3/28/2018	5/24/2023
QQ060305 - PILE DRIVING INSPECTION			
	VALID	5/29/2003	5/29/2008
QQXX8888 - DRILLED SHAFT INSPECTION			
	SUPERSEDED	5/5/2008	5/5/2013
	VALID	8/23/2013	8/23/2018
	VALID	8/2/2018	8/24/2023

Exam Name	Course Name	Exam Date	Score	Exam Result
3 Months Experience Asphalt Paving Operations or Asphalt Roadway Testing			100	Met
30 Days Experience on a construction project involving earthwork operations			100	Met
ACI Concrete Field Testing Technician Grade 1 Certification			100	Met
Asphalt Paving - Level 1 Proficiency Exam	Asphalt Paving - Level 1	02/17/2000	0	Fail
Asphalt Paving - Level 1 Proficiency Exam	Asphalt Paving - Level 1	03/15/2000	100	Pass
Asphalt Paving - Level 1 Proficiency Exam	Asphalt Paving - Level 1	08/21/2006	100	Pass
Asphalt Paving - Level 1 Written Exam	Asphalt Paving - Level 1	02/17/2000	76	Pass
Asphalt Paving - Level 1 Written Exam - Rel.4	Asphalt Paving - Level 1	08/21/2006	78	Pass
Asphalt Paving - Level 2 Written Exam	Asphalt Paving - Level 2	03/16/2001	66	Fail
Asphalt Paving - Level 2 Written Exam - Rel. 5	Asphalt Paving - Level 2	01/09/2009	54	Fail
Asphalt Paving - Level 2 Written Exam - Rel. 5	Asphalt Paving - Level 2	06/10/2008	54	Fail
Asphalt Paving - Level 2 Written Exam - Rel. 5	Asphalt Paving - Level 2	02/26/2009	66	Fail
Asphalt Paving - Level 2 Written Exam - Rel. 5	Asphalt Paving - Level 2	05/20/2009	66	Fail
Asphalt Paving - Level 2 Written Exam - Rel. 5	Asphalt Paving - Level 2	05/21/2008	68	Fail
Asphalt Paving - Level 2 Written Exam - Rel. 6	Asphalt Paving - Level 2	11/10/2009	72	Pass
Asphalt Paving - Level 2 Written Exam - Rel. 6	Asphalt Paving - Level 2	10/09/2014	74	Pass
Asphalt Paving - Level 2 Written Exam - Rel.3	Asphalt Paving - Level 2	12/09/2002	48	Fail
Asphalt Paving - Level 2 Written Exam - Rel.3	Asphalt Paving - Level 2	04/30/2003	80	Pass
Drilled Shaft Inspection Proficiency Exam - Rel.4	Drilled Shaft Inspection	08/23/2013	100	Pass
Drilled Shaft Inspection Written Exam - Rel.3	Pile Driving Inspection 1	04/18/2008	52	Fail
Drilled Shaft Inspection Written Exam - Rel.3	Pile Driving Inspection 1	05/05/2008	72	Pass
Drilled Shaft Inspection Written Exam - Rel.5	Drilled Shaft Inspection	04/30/2013	68	Fail
Drilled Shaft Inspection Written Exam - Rel.5	Drilled Shaft Inspection	08/23/2013	76	Pass
Drilled Shaft Inspection Written Exam - Rel.7	Drilled Shaft Inspection	07/18/2018	66	Fail
Drilled Shaft Inspection Written Exam - Rel.7	Drilled Shaft Inspection	08/02/2018	90	Pass
Earthwork Construction Inspection - Level 1 Proficiency Exam	Earthwork Construction Inspection - Level 1	10/22/2002	100	Pass
Earthwork Construction Inspection - Level 1 Proficiency Exam - Rel. 3	Earthwork Construction Inspection - Level 1	08/20/2013	100	Pass
Earthwork Construction Inspection - Level 1 Written Exam	Earthwork Construction Inspection - Level 1	10/23/2002	72	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 2	Earthwork Construction Inspection - Level 1	10/01/2007	66	Fail

Earthwork Construction Inspection - Level 1 Written Exam - Rel. 2	Earthwork Construction Inspection - Level 1	10/11/2007	80	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	08/20/2013	98	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 2	Earthwork Construction Inspection - Level 2	10/25/2002	62	Fail
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 2	Earthwork Construction Inspection - Level 2	05/29/2003	78	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 2	06/20/2008	86	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 5	Earthwork Construction Inspection - Level 2	03/07/2013	58	Fail
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 5	Earthwork Construction Inspection - Level 2	05/23/2013	74	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 6	Earthwork Construction Inspection - Level 2	03/28/2018	90	Pass
FDOT Concrete Field Inspector Spec Written Exam	FDOT Concrete Field Inspector Spec	07/14/2006	70	Pass
FDOT Concrete Field Inspector Spec Written Exam	FDOT Concrete Field Inspector Spec	02/13/2003	74	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.4	FDOT Concrete Field Inspector Spec	06/22/2011	70	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.4	FDOT Concrete Field Inspector Spec	07/08/2011	80	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.4	FDOT Concrete Field Inspector Spec	11/11/2016	80	Pass
Final Estimates - Level 1 Written Exam	Final Estimates - Level 1	05/28/2010	86	Pass
Final Estimates - Level 2 Written Exam - Rel. 11	Final Estimates - Level 2	09/27/2018	90	Pass
Final Estimates - Level 2 Written Exam - Rel. 6	Final Estimates - Level 2	10/22/2013	80	Pass
Monitored 10 Shafts, at least 5 Shafts constructed with wet method			100	Met
Nuclear Safety Certification			100	Met
QC Manager Written Exam - Rel.9	QC Manager	09/19/2013	92	Pass

MAHMOOD ESLAMIFAR

Inspector

TECHNICAL EXPERTISE

Construction Engineering Inspection

YEARS OF EXPERIENCE

5 Years

CERTIFICATIONS

- CTQP Earthwork Level 1 & 2
- CTQP Asphalt Paving Level 1
- CTQP Concrete Field Level 1
- CTQP QC Manager
- IMSA Traffic Signal Inspector Level 1 #SI_109498
- IMSA Traffic Signal Construction Technician (pending)
- MOT Intermediate ID#31392
- Troxler Nuclear Gauge/Hazmat ID#LEF8H8L88J9_44296
- ACI Concrete Field-Testing Technician Level 1 ID#01307271
- DEP - Stormwater Management Inspector ID#30159
- Storm Water, Erosion, and Sedimentation Control ID#SI_109498
- FDOT Auger Cast Pile
- FDOT MSE Wall
- FEMA Intro to Incident Command Sys. ID# ICS-100, IS-00100.b

EDUCATION

B.S., Business Administration, Fort Lauderdale College

PROFESSIONAL PROFILE

Mr. Eslamifar has been responsible for the inspection and supervision of construction activities such as signalization, asphalt, earthwork, and MOT. A major part of his responsibilities is to ensure that these activities are constructed in accordance with FDOT Standards, Specifications, and Plans. He has experience with preparing monthly and final estimates packages.

REPRESENTATIVE PROJECTS

Inspector: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. ADA upgrades at crosswalks, signalization improvements. Provided guidance and resolution on field changes that take place, coordinate the resolution of all contractor's RFIs and shop drawing submittals, submits all reports monitors the budget made the final submittal and closeout of the project. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services. *Project Length: Countywide; Budget: $5,000,000*

Fiber Optic Improvements project at Broward Blvd and Oakland Park Blvd, Broward County: CEI services for the Fiber Optic Installation along the corridors, following the Broward County and FDOT Standards & Specifications. Inspection of materials, utility coordination , reviewing and coordination of field adjustments, monitoring the compliance of erosion control and the implementation of MOT devices within the project limits. Perform daily reports of the work performed, verifying quantities and directional bore logs.

Intersection Improvements at NW 31st Ave and NW 26th ST & Martin Luther King Blvd and Blount Rd Broward County: CEI services for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ITS, vehicle detection camera systems. Roadway improvements include widening, pavement, pedestrian facilities and ADA upgrades at crosswalks, signalization improvements. Perform daily reports of the work performed, verifying quantities and directional bore logs, utility coordination , reviewing and coordination of field adjustments.

Everglades Holiday Park Bridge Replacement Project, Broward County: The work included construction of a utility bridge for steel fuel pipe, electrical conduits and DIP force main. The utility bridge consisted of precast concrete piles, reinforced concrete pile caps and pre-casted, pre-stressed concrete deck slab units. The work included the replacement of an existing bridge that was comprised of concrete piling, pile caps, steel girder beams and reinforced concrete deck slab. The new bridge was constructed with pre-stressed concrete piles, reinforced concrete pile caps and pre-stressed longitudinal deck beams. The new bridge deck consisted of fiber reinforced concrete. The work also included the construction of a separate utility bridge to carry a fuel supply line, electrical conduits and sanitary sewer force main. The new utility bridge was constructed similarly to the main bridge. The construction project was phased to provide continuous maintenance of traffic to and from Everglades Holiday Park. Therefore half the new bridge was constructed while traffic was maintained on the old bridge. Then two way traffic was shifted to the half the new bridge while the old bridge was demolished. Then the remaining half of the new bridge was constructed behind concrete bridge barrier wall.

MAHMOOD ESLAMIFAR

Inspector

Miami-Dade County, Various Projects for the Department of Transportation and Public Works (April 2017 to Mar 2019). Mr. Eslamifar served as an Inspector for various project throughout Miami-Dade County reporting directly to Miami-Dade County construction management. These projects had elements that included signalization, asphalt, drainage, and utilities. Reference: Alfonso Duarte, 305-877-3202.

FDOT D6, SW 107 Ave. Grouping (Feb 2017 to March 2017) Mr. Eslamifar served as an Inspector on this grouping that includes improvements to 107th Ave. from SW 11th St. to north of Flagler St. Scope includes roadway widening, drainage, lighting, sidewalks/ADA, signalization, bridge replacement, and landscaping. Reference: Emmanuel Espinal P.E., FDOT Project Manager, 305-640-7414.

Miami-Dade County, Various Roadway Paving Projects (Aug 2016 to Feb 2017). Mr. Eslamifar served as an inspector for asphalt paving operations at multiple sites throughout Miami-Dade County. He was tasked with tracking quality, quantity, and contractor's quality control operations, reporting directly to Miami-Dade County construction management.

FDOT D4, CSX Bridge Replacement, (Oct 2013 to Aug 2016). Mr. Eslamifar is served as an Inspector for the replacement of the existing SFRC CSX Railroad Rolling Lift Bridge parallel to, and west of SR-9/I-95 over the South Fork of the New River. A new rolling lift bridge was installed approximately 35 feet west of the existing bridge, along with the realignment of the railroad tracks. Mr. Eslamifar was responsible for documenting contractor's daily activities, monitoring stormwater management controls and keeping log of CSX train activities. Reference: Hewrald Humes, P.E. Project Manager, 954-776-4300

FDOT D4, Pines Blvd RRR Grouping (Jan 2012 to Jul 2012). Mr. Eslamifar served as an Inspector for milling and resurfacing Pines Blvd from US 27 to NW 64 Way. The project scope included the installation of new signalization, lighting, and landscaping. Reference: Eghbal Jalali, Broward Operations Area Engineer, 954-776-4300

FDOT D4, SR-25/US 27 Milling and Resurfacing (Sep 2002 to Feb 2003). Mr. Eslamifar served as an Inspector for the roadway widening, and milling and resurfacing of US 27 from the Miami Dade County Line to Griffin Road. Reference: Eghbal Jalali, Broward Operations Area Engineer, 954-776-4300

Technician CTQP Qualification Report

Date Ran: 9/6/2019 1:34:29 PM

Technician Name: Mahmood Eslamifar

Qualification Area	Qualification Status Code	Qualification Date	Expiration Date
QC9999 - QC MANAGER			
	VALID	10/18/2013	1/1/2099
QQ060101 - ASPHALT PAVING TECHNICIAN - LEVEL 1			
	SUPERSEDED	8/21/2013	8/21/2018
	VALID	2/18/2019	2/18/2024
QQ060104 - ASPHALT PAVING LEVEL 2			
	VALID	8/21/2013	8/21/2018
QQ060204 - CONCRETE FIELD TECHNICIAN - LEVEL 1			
	VALID	4/16/2014	4/16/2019
QQ060301 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 1			
	SUPERSEDED	1/27/2012	1/27/2017
	VALID	6/16/2017	6/16/2022
QQ060304 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 2			
	SUPERSEDED	8/1/2013	8/1/2018
	VALID	7/27/2018	8/2/2023

Exam Name	Course Name	Exam Date	Score	Exam Result
3 Months Experience Asphalt Paving Operations or Asphalt Roadway Testing			100	Met
30 Days Experience on a construction project involving earthwork operations			100	Met
ACI Concrete Field Testing Technician Grade 1 Certification			100	Met
Asphalt Paving - Level 1 Proficiency Exam - Rel.5	Asphalt Paving - Level 1	03/13/2012	100	Pass
Asphalt Paving - Level 1 Proficiency Exam - Rel.7	Asphalt Paving - Level 1	11/13/2018	100	Pass
Asphalt Paving - Level 1 Written Exam - Rel.5	Asphalt Paving - Level 1	03/13/2012	44	Fail
Asphalt Paving - Level 1 Written Exam - Rel.5	Asphalt Paving - Level 1	04/19/2012	91	Pass
Asphalt Paving - Level 1 Written Exam - Rel.7	Asphalt Paving - Level 1	11/13/2018	44	Fail
Asphalt Paving - Level 1 Written Exam - Rel.7	Asphalt Paving - Level 1	02/18/2019	78	Pass
Asphalt Paving - Level 2 Written Exam - Rel. 10	Asphalt Paving - Level 2	08/16/2018	58	Fail
Asphalt Paving - Level 2 Written Exam - Rel. 6	Asphalt Paving - Level 2	08/21/2013	84	Pass
Drilled Shaft Inspection Proficiency Exam - Rel.7	Drilled Shaft Inspection	06/21/2019	100	Pass
Drilled Shaft Inspection Written Exam - Rel.7	Drilled Shaft Inspection	06/21/2019	42	Fail
Earthwork Construction Inspection - Level 1 Proficiency Exam - Rel. 3	Earthwork Construction Inspection - Level 1	01/27/2012	100	Pass

Earthwork Construction Inspection - Level 1 Proficiency Exam - Rel. 3	Earthwork Construction Inspection - Level 1	05/26/2017	100	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	05/26/2017	56	Fail
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	01/27/2012	78	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	06/16/2017	94	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 5	Earthwork Construction Inspection - Level 2	08/01/2013	90	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 6	Earthwork Construction Inspection - Level 2	07/27/2018	90	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.4	FDOT Concrete Field Inspector Spec	04/16/2014	70	Pass
Monitored 10 Shafts, at least 5 Shafts constructed with wet method			100	Met
Nuclear Safety Certification			100	Met
QC Manager Written Exam - Rel.9	QC Manager	10/18/2013	84	Pass

METRIC ENGINEERING

MARGARET "MAGGIE" MAHER

Engineer Intern (In-House Support)

TECHNICAL EXPERTISE

Roadway Design
Traffic Operations
Traffic Modeling
Administration

YEARS OF EXPERIENCE

4 Years

SKILLS

- MicroStation
- Inroads
- AutoTURN
- Civil 3D
- VISSIM
- Highway Capacity Software (HCS)
- Synchro

EDUCATION

B.S., Civil Engineering, Rowan University (2017)

PROFESSIONAL PROFILE

Ms. Maher has proven transportation engineering and design experience, including site design, ADA curb ramps, guide rail, and typical roadway sections. She currently provides a multiride of in-house support services for Broward County such as plan preparation, cost estimation, site reviews, MOT design, QC checks, presentation prep, comment resolution for roadway, sidewalk, drainage, and traffic projects.

REPRESENTATIVE PROJECTS

Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services, Broward County: Services for the design, plan preparation, implementation, and construction engineering and inspection of various types of construction improvement projects that fall under an estimated construction cost of two million dollars. Work includes traffic signalization intersection improvements for new mast arm supported traffic signals and for traffic signal conversions from span-wire to structural mast arms and improvements involving ATMS, ITS, vehicle detection camera systems and Complete Streets. Other services include traffic signal engineering and communications system technology improvements including installation of fiber optic, Ethernet-over-copper, and cellular equipment and infrastructure. Roadway improvements include widening, pavement, pedestrian facilities, bicycle facilities, drainage, water and sewer, lighting, and more. Metric also provides miscellaneous civil engineering, design and related services, as well as Broward County in-house consultant support services.

Ms. Maher performs In-House support services for this contract and has worked on several projects including McNab Road Drainage, Atlantic Trailhead, SE 3rd Avenue Sidewalk Improvements, and NW 136th Avenue Sidewalk Improvements.

PRIOR WORK EXPERIENCE

11/2016 – 08/2018: Civil/Highway Design Engineer: Gannett Fleming (Marlton, NJ): Ms. Maher served as a design engineer with this firm, performing design tasks for roadway projects such as grading pavement and landscape, site design, horizontal and vertical geometry, guide rail, ADA curb ramps, MPT, sight distance calculations, and typical roadway sections. She drafted concept development, preliminary design, and final reports for resurfacing and bridge replacement jobs; determined quantity calculations and project cost estimates; researched standards and specifications while working with state and federal manuals; and conducted traffic safety evaluation reports providing recommendations for 69-kV transmission line utility poles upon investigating the geometry of the road, crash data and clear zone impacts.

12/2015 – 08/2016: Traffic Engineering Intern: Maser Consulting (Hamilton, NJ): As a Traffic Engineering Intern, Ms. Maher drafted construction zones, calculated grading and corrected existing intersection projects; conducted QA/QC intersection check lists and traffic signal clearances; corrected proposals, researched material specifications, and located 400 trailblazer signs to be removed; and investigated Crash Counter Measures on George Washington Bridge and submitted recommended solutions.

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Broward County Board of
County Commissioners

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BidSync

9/23/2019

Certificate of Completion

Margaret K. Maher

Has Completed a Florida Department of Transportation Approved Temporary Traffic Control (TTC) Advanced Course.

05/07/2023	134	Ronald C. Appel	51017
Date Expires	FDOT Provider #	Instructor	Certificate #

A&SW Consultants, Inc.
5545 Benchmark Lane
Sanford, FL 32773
www.FloridaMOT.com
nicolle@aswconsultants.com

For more information about Temporary Traffic Control (TTC) or to verify this certificate

www.motadmin.com

Joseph Chan, P.E. – Senior Project Mgr.

Education

B.S Civil Engineering

Iowa State University, Iowa 1981

Additional Training/Continuing Education

Underground Utility & Excavator Contractor License, Florida

Advanced Work Zone Traffic Control Certification

Registrations/Certifications

Professional Engineer, FL
Professional Engineer, TX
Professional Engineer, MA
General Contractor License, Florida

Qualifications Overview

Mr. Chan has over thirty-seven (37) years of responsible and diversified engineering experience in the design and construction management, construction inspection of highway projects. He has demonstrated expertise in management, establishing and maintaining client relationships, solving technical problems, quality control, meeting tight project schedules/budgets, teamwork, and coordination in multi-disciplinary service environments. Mr. Chan has overseen all aspects of planning, production, scheduling, quality control, coordination, invoicing, and client relations.

Relevant Sample Projects

Highway Design, etc.

- **Senior Engineer/DPM: Construction Engineering and Inspection Services (E05-OCI-02, C), Miami-Dade County, Florida -** EBS staff provided construction engineering and inspection (CEI) services for various drainage improvement/roadway reconstruction, canal dredging/ restoration, and drain cleaning projects throughout the county with total construction budget exceeding $20 million. He performed periodic and random site visits to ensure the inspectors were performing as expected. EBS personnel included construction managers, office engineers to administer the construction, and senior inspectors and inspectors to observe the construction activities, checking for compliance, supervising on-site tests, checking on public complaints, resolving conflicts, and preparing daily report with quantities of materials used for construction or hauled for disposal. (06/2006 - 10/2009).
- **Senior Project Manager – NE 133 Street, North Miami, FL:** Design and construction engineering inspection services for roadway improvements of NE 133 Street from W. Dixie Highway to NE 11 Avenue. He oversaw the design providing QA/QC reviews and cost estimates. Project tasks included coordination with the surveyor and geotechnical subs, and for existing utilities location, pavement design, pavement markings and signing, lighting, drainage systems, traffic controls plans, permits, construction details, cost estimates, specifications/plans production, bidding assistance, response to RFIs, construction engineering inspection, etc. (05/17 – 09/18).
- **Senior Project Engineer – Right-of-Way Condition Survey (ROWCS), North Miami, FL:** City of North Miami contracted EBS as the prime consultant to conduct a visual inspection of its roadway and to develop a management program that prioritizes repairs, replacement and improvements. The work included conducting a right-of-way condition survey (ROWCS) for all roadways within its boundaries. The main tasks were field data collection, creation of data spreadsheet and preparation of report including cost estimates for addressing the documented issues. Mr. Chan provided QA/QC review for the project including the estimated cost of needed maintenance and improvements (10/16 – 05/17).
- **Senior Engineer/DPM - Construction Management and Inspection Services (E01-DERM-05, E), Miami-Dade County, Florida:** EBS staff provided construction engineering and inspection (CEI) services for various drainage improvement/roadway reconstruction, canal dredging/ restoration, and drain cleaning projects throughout the county with total construction budget exceeding $50 million. He conducted random site visits to all EBS personnel included construction managers, office engineers, senior inspectors and inspectors to ensure in-house QA/QC

compliance and contractual obligations conformance (05/2002 – 05/2006).

- **Senior Project Manager – NW 130 Street, North Miami, FL:** engineering inspection services for roadway improvements of NW 130 Street from NW 10 Avenue to NW 12 Avenue. He oversaw the design providing QA/QC reviews and cost estimates. Project tasks included coordination with the surveyor and geotechnical subs, and for existing utilities location, pavement design, pavement markings and signing, lighting, drainage systems, traffic controls plans, permits, construction details, cost estimates, specifications/plans production, bidding assistance, response to RFIs, construction engineering inspection, etc. (05/17 – 08/18).
- **Senior Project Engineer - Design-Build Services for NW 128 Street Roadway in the City of Opa Locka, FL:** As the Senior Project Engineer for milling and resurfacing of the about 1-mile roadway, he performed QA/QC reviews of the signing and marking plans, typical section package, pavement design package, 3-R report, drainage plans, roadway plans, traffic controls plans, signalization plans, construction details, cost estimates, specifications, and plans production. Also included utility coordination and post design inspection (03/13 – 05/13).
- **Senior Project Engineer - SR-112/Arthur Godfrey Road from MP 0.010 to MP 0.804 in Miami Dade County, FL:** As the Senior Project Engineer for milling and resurfacing of the urban roadway, he performed plans reviews of the typical section package, pavement design package, 3-R report, design variation and exception, roadway plans, signing and pavement marking plans, traffic controls plans, signalization plans, construction details, cost estimates, specifications, and plans production. (10/09 – 01/13).
- **Senior Project Engineer - SR-710/Beeline Highway from MP 1.58 to MP 5.00 in Palm Beach County, FL:** As the Senior Project Engineer for milling and resurfacing of the 3.5-mile roadway, he performed plans reviews of the signing and marking plans, typical section package, pavement design package, 3-R report, drainage mini-drip report, roadway plans, traffic controls plans, signalization plans, construction details, cost estimates, specifications, and plans production. Project also included utility coordination, environmental review, miscellaneous landscaping plans, and post design services (03/209 – 12/2012).
- **Senior Project Engineer - Miami-Dade County Public Work, NE 2nd Avenue, Miami, FL:** As the Senior Project Engineer for the 0.5-mile urban roadway reconstruction design and replacement of Little River canal bridge design, he performed plans QA/QC reviews. Project tasks included master planning, public involvement/ outreach and public presentation, coordination of relocation existing utilities, pavement design, pavement markings and signing, signalization, lighting, drainage systems, traffic controls plans, permits, construction details, cost estimates, specifications / plans production (1/05–12/10).

General Civil, Water and Sewer /Drainage, etc.

- **Senior Project Manager - Commercial Property, 5941 Biscayne Boulevard, Miami, Florida:** General civil engineering design services including water and irrigation line service. Design of 460 linear feet of 8-inch water force main with a fire hydrant; site grading, roadway, pavement markings, signing and drainage systems. Additional tasks also included bid plans + permitting, cost estimates and inspections during construction. (04/14 – 01/15).
- **Senior Project Engineer - Sanitary Sewer Pump Station 10 Rehabilitation, City of Opa Locka, FL:** The rehabilitation included design and construction of a modern submersible pump station along with about **2,500** linear feet of new force main installation connecting an existing 12" force main along Perviz Ave in the City of Opa-Locka. Helped the city release station 10 from absolute moratorium on this station (2011 – 2014).
- **Senior Project Manager - Oak Hammock Townhouses, SW 120 Ave/224 Street, Miami, Florida:** Design of sanitary sewer collection systems. Design of on-site domestic water and fire line service. Design of design of 1,030 linear feet of 8-inch water main and 920 linear feet of 8-inch gravity sewer line with 16 manholes - with sewer laterals and water services. Additional tasks also included bid plans, permitting,

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STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

CHAN, JOSEPH CHOPIU

12000 SW 92ND ST
MIAMI FL 33186-2018

LICENSE NUMBER: PE40587

EXPIRATION DATE: FEBRUARY 28, 2021

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Broward County Board of County Commissioners

PNC2119168P1

EBS ENGINEERING, INC.

Benjamin S. Essien, P.E. – Principal Engineer

Education

BS, Mechanical Engineering

University of Benin, Benin City, Nigeria 1980

Professional Affiliations / Registrations

American Society of Mechanical Engineers

American Society of Civil Engineers

Professional Engineer, Florida

Asbestos Consultant, Florida

Licensed Mold Assessor, Florida

Additional Training/Continuing Education

EPA Asbestos Building Inspector & Mgmt. Planner

EPA Asbestos Contractor/Supervisor

40-Hour HazMat OSHA 29 CFR 1910

8-Hour HazMat Supervisor

EPA Lead-based Paint Risk Assessor & Inspector

AHERA Project Designer

Qualifications Overview

Mr. Essien, a registered Professional Engineer in the State of Florida has over 36 years of experience of engineering design, project management, environmental consulting and construction. He has served as project manager and/or principal-in-charge for numerous projects including design, construction and inspection of major industrial and public facilities. He is also a licensed Florida asbestos consultant, certified lead-based paint risk assessor and radon measurement specialist with extensive experience in handling all asbestos, lead-based paint, radon and other indoor air quality testing/consulting issues and remediation.

He is an effective and perceptive program/project manager who has won acclaims for both services and professionalism to many clients. With extensive contract administration and quality assurance/quality control (QA/QC) experience, he has administered hundreds of projects including multi-site/task design, construction inspections, contamination assessments, hazardous materials cleanup, etc.

Sample Projects

- **Project Principal – Right-of-Way Condition Survey (ROWCS), North Miami, FL:** City of North Miami contracted EBS as the prime consultant to conduct a visual survey of its roadway and to develop a management program that prioritizes repairs, replacement and improvements. The work included conducting a right-of-way condition survey (ROWCS) for all roadways within its boundaries. The main tasks were field data collection, creation of data spreadsheet and preparation of report including cost estimates for addressing the documented issues. He provided QA/QC review for the report, the presentation to the City Council and cost estimates (10/16 – 05/17).
- **Project Principal – NW 130 Street, North Miami, FL:** inspection services for roadway improvements of NW 130 Street from NW 10 Avenue to NW 12 Avenue. He provided QA/QC reviews, client consulting and coordination. Project tasks included coordination with the surveyor and geotechnical subs, and for existing utilities location, pavement design, pavement markings and signing, lighting, drainage systems, traffic controls plans, permits, construction details, cost estimates, specifications/plans production, bidding assistance, response to RFIs, construction inspection, etc. (05/17 – 08/18).
- **Project Principal: Zoo Miami (HWR-802/File-11706), 12400 SW 152 Street, Miami, Florida -** EBS performed Contaminated Site Assessments for three previously assessed areas at Zoo Miami facility located at 12400 SW 152 Street in Miami. Our task was to delineate the extent of the previously identified soil contamination, and surficial and/or subsurface solid waste in the three identified areas: Monkey Meadow Field, Anteater Holding Area and Orangutan Service Road of the subject site. Project tasks included review of previous reports/data, soil sampling, laboratory analysis, data evaluation, report with recommendations for RER review and approval (2017).
- **Project Principal – NE 133 Street, North Miami, FL:** Design and construction engineering inspection services for roadway improvements of NE 133 Street from Dixie Highway to NE 11 Avenue. He provided QA/QC reviews, client consulting and coordination. Project tasks

included coordination with the surveyor and geotechnical subs, and for existing utilities location, pavement design, pavement markings and signing, lighting, drainage systems, traffic controls plans, permits, construction details, cost estimates, specifications/plans production, bidding assistance, response to RFIs, construction inspection, etc. (05/17 – 08/18).

- **Principal/QA/QC Engineer: SR-710/Beeline Highway from MP 1.58 to MP 5.00 in Palm Beach County, FL -** for milling and resurfacing of the 3.5-mile roadway including signing and marking plans. EBS prepared typical section package, pavement design package, 3-R report, drainage mini-drip report, roadway plans, signing and pavement markings, and traffic controls plans, construction details, cost estimates, specifications and plans production. The project was completed ahead of FDOT's approved schedule.
- **Project Principal - Design-Build Services for NW 128 Street Roadway in the City of Opa Locka, FL:** As the Project Principal for milling and resurfacing/drainage improvement of the about 1-mile roadway, he provided overview and QA/QC reviews of the signing and marking plans, typical section package, pavement design package, 3-R report, drainage plans, roadway plans, traffic controls plans, construction details, specifications, cost estimates, and plans production. Project also included utility coordination and post design inspection (03/2013 - 06/2013).
- **Project Principal - SR-112/Arthur Godfrey Road from MP 0.010 to MP 0.804 in Miami Dade County, FL:** As the Project Principal for milling and resurfacing of the urban roadway, he provided overview and QA/QC reviews of the typical section package, pavement design package, 3-R report, design variation and exception, roadway plans, signing and pavement marking plans, traffic controls plans, signalization plans, drainage, construction details, cost estimates, specifications, and plans production. Project also included utility coordination, public awareness/involvement meetings, miscellaneous structures plans, and post design services (10/09 – 01/13).
- **Principal/QA/QC Engineer: Miami-Dade County Public Work – NE 2nd Avenue, Miami, FL** - for the 0.5-mile urban roadway reconstruction design and replacement of Little River canal bridge design. Project tasks included master planning, public involvement/ outreach and public presentation, coordination of relocation existing utilities, pavement design, pavement markings and signing, signalization, lighting, drainage systems, traffic controls plans, permits, construction details, cost estimates, specifications and plans production. Also post design services including response to RFIs, review and/or modifications based on site conditions (1/2005 – 08/2009).
- **Project Principal: SW 56 Avenue (Dr. Martin Luther King Jr. Blvd.) from SW 41 Street/ County Line Road to SR 824/Pembroke Road, West Park, Florida:** EBS provided construction engineering inspection (CEI) for this roadway reconstruction and drainage improvement project. EBS inspector documented daily construction activities, ensuring the contractor was utilizing MOT and controlling dust, dirt and debris. Other tasks included documentation of any significant field changes, observation of materials testing where applicable, photo or video documentation, etc. (04/2013 – 05/2014).
- **Project Manager/Principal: Construction Engineering and Inspection Services (E05-OCI-02, C), Miami-Dade County, Florida -** EBS staff provided construction engineering and inspection (CEI) services for various drainage improvement/roadway reconstruction, canal dredging/ restoration, and drain cleaning projects throughout the county with total construction budget exceeding $20 million. Mr. Essien performed periodic site visits and coordination with DERM and Public Works personnel. EBS personnel included construction managers, office engineers, and senior inspectors and inspectors to observe the construction activities, checking for compliance, supervising on-site tests, checking on public complaints, resolving conflicts, and preparing daily report with quantities of materials used for construction or hauled for disposal.
- **Project Principal: Vacant Lot - North of SW 40 St. between SW 89 Ave & SW 89 Ct, Miami, Florida -** EBS performed Phase I & II Environmental Site Assessments for the site. Tasks for Phase I as per ASTM Standard Practice E 1527-13, included investigating the

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ESSIEN, BENJAMIN SAM

7944 NW 163 TERRACE
MIAMI LAKES FL 33016

LICENSE NUMBER: PE47176

EXPIRATION DATE: FEBRUARY 28, 2021

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Maqsood M. Nasir, P.E. – Snr. Project Engineer

Education

Master of Engineering in Civil Engineering, Lamar University, Texas, 2001

Bachelor of Science in Civil Engineering, BUET Dhaka, Bangladesh, 1998

Professional/ Afiliations/ Continuing Education

FDEP Stormwater, Erosion & Sedimentation Control Inspector (Inspector #25835).

Benefit Cost Analysis Training by Florida Division of Emergency Management.

IS-100 Introduction to Incident Command

ICPR Software Training

Professional Liability Training

Registrations/Certifications

Professional Engineer Florida, No. 63916

Professional Engineer Texas, No. 97194

Qualifications Overview

Mr. Nasir has more than 18 years of professional experience in civil/municipal engineering, management, administration and procurement. Project experience includes water distribution and sewer collection system design, maintenance and operations; pavement management/roadway and drainage system design; flood management, pump station system planning, design and management; floodplain management, hydraulic and hydrologic modeling; water, sewer, stormwater and roadway master plan development; public outreach and projects coordination. He has exceptional experience in municipal infrastructure improvements and municipal administration of capital improvement projects, project execution plan development and implementation. He has served as both Director of Capital Improvement and Director of Public Works & Utilities departments, and has proven to be an effective and persuasive leader/administrator.

Relevant Sample Projects

Civil/Roadway/Drainage, Etc.

- **Project Manager - Citywide Stormwater and Drainage Improvements, City of Opa Locka, FL:** The city of Opa-locka existing storm water system consists of a number of independently built facilities rather than an integrated network and do not provide the interdependency as well as an outlet feature to facilitate discharge to local canals system(s). The citywide drainage improvements projects included interconnecting the roadway network system to function as single contributory basin allowing for each of the corridors to efficiently distribute the storm runoff basin wide. The projects also included incorporating the canal systems into the overall drainage & stormwater infrastructure to provide the required quality with approved hydrodynamic separator unit that will be responsible for extended nutrient removals in the storm water runoff before outfall discharges. (2011 – 2015).
- **Project Manager/Director of Capital Improvements - Design-Build Services for NW 128 Street Roadway in the City of Opa Locka, FL:** for milling and resurfacing/ drainage improvement of the about 1-mile roadway. He reviewed and approved the work - including signing and marking plans, typical section package, pavement design package, 3-R report, drainage plans, roadway plans, traffic controls plans, construction details, specifications, cost estimates, etc. The project also included utility coordination and post design inspection (03/2013 - 06/2013).
- **Project Manager – Weston Master Drainage System Evaluation, Improvements, Recommendations and Design, Weston, FL:** Studied and evaluated the city of Weston Drainage System for hydraulic deficiencies in context of changed hydrology and hydraulic balances and recommended improvement requirements with design and operation control mechanism. The project consisted of the master drainage system for the 12+/-

square miles city area connected to the South Florida Water Management District (SFWMD) Canals through drainage pump stations discharge control (2008-2011).

- **Lead Designer – SR 997/Krome Ave Drainage Improvements, Miami, FL:** SR 997 (SW 177th" Avenue), also known as Krome Avenue, from US 1 (Dixie Highway) to US 27 (Okeechobee Road) is predominantly a two-lane undivided roadway located in rural and suburban areas of the Miami-Dade County. The roadway improvements included widening of the existing two -lane undivided roadway to a four -lane divided highway, with some turn lanes and driveway access. Worked as the lead drainage engineer, and conducted the drainage modeling and analysis, and formulated the drainage concept to accommodate the proposed approximately 5.8 miles roadway improvements for Krome Avenue (2007-2008).
- **Lead Designer – Westview Development, Miramar, FL:** The project site encompassed 133.0± acres area, previously used as a golf course facility, featuring berms, fairways and various existing lakes and falls within the South Broward Drainage District (SBDD) Basin S-2, which is hydraulically connected to SBDD Basins S-7 and S-13. As lead drainage engineer, evaluated the impact of the proposed Waterview development on Basin S-2 hydraulic performance, and prepared modification, recommendations utilizing using the entire SBDD Basin S-2, S-7, and S-13 AdICPR Model (2008-2011).

Civil/Water/Sanitary Sewer Design, Etc.

- **Project manager - Sanitary Sewer Pump Station 10 Rehabilitation, City of Opa Locka, FL:** Project manager and engineer of record for the pump station rehabilitation. The rehabilitation included design and construction of a modern submersible pump station along with about **2,500** linear feet of new force main installation connecting an existing 12” force main along Perviz Ave in the City of Opa-locka. Helped the city release station 10 from absolute moratorium on this station (2011 – 2014).
- **Project Manager - Citywide Water Distribution and Sanitary Sewer Collection Systems Rehabilitation, City of Opa Locka, FL:** The City of Opa Locka owned and maintained wastewater system consists of a gravity collection system combined with a transmission system that discharges into to WASD wastewater treatment system. The system comprises of approximately 183,000 linear feet of gravity collection piping with maintenance access manholes structures interspaced along the length of the system. The transmission infrastructure comprises approximately 42,300 linear feet of piping and 20 lift stations. The project included planning, design and plans review to replace all segments of the existing collection system network comprising of vitrified clay (VCP) pipe material with polyvinyl chloride (PVC) C-900 pipe material. The project scope also includes the city’s priority to extend the infrastructure to the un-served portions of the city by implementing a collection network, new maintenance access structures rated for heavy traffic loads, a lift station (equipped with dual pumps, alternative power/SCADA telemetry) and a transmission pipeline connection downstream to the existing system (02/2011 – 07/2015).
- **Project manager - Sanitary Sewer Pump Station 8 Rehabilitation, City of Opa Locka, FL:** Project manager and engineer of record for the pump station rehabilitation. The rehabilitation included design and construction of a modern submersible pump station along with about **1,500** linear feet of new 8” force main installation along Sharar Avenue in the City of Opa-locka. Helped the city release station 10 from conditional moratorium on this station (2009 – 2012).
- **Project manager - Sanitary Sewer Pump Station 11A, City of Opa Locka, FL:** Project Manager and engineer of record for the City of Opa-locka Pump Station 11A design and construction of a modern submersible pump station. Responsibilities included overall project management, scheduling, data analysis, design concept development, design team lead, permitting,

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NASIR, MAQSOOD MOHAMMAD

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Ricardo Martinez – Construction Manager

Education

B.S. Engineering
Brigham Young University, 1974
MBA, California State University, Dominguez Hills, CA

Registrations/Certifications

Professional Engineer Florida ***(Inactive)***
Certified General Contractor, Florida ***(Inactive)***

Qualifications Overview

Mr. Martinez is a Construction Manager with over 41 years of extensive engineering design and construction management experience with increasing responsibilities of airports, industrial and municipal facilities. He was formerly a Registered Professional Engineer and Licensed General Contractor in Florida.

Mr. Martinez is proficient in contract administration, coordination and expedition of construction contracts for new and existing facilities. Mr. Martinez has expertise in developing Process Flow Diagrams and P&ID's, equipment specifications, cost estimates and cost control, and environmental permitting. Competent in preparation of appropriation requests, preparation of facility design, supervision of construction activities and coordination of start-up activities. He is very familiar with South Florida building codes, building laws and procurement process.

Sample Projects

- **Project Manager: Miami International Airport, Concourse "C", Miami, Florida –** Responsible for the engineering design and project management of remediation systems for groundwater at Miami airport. Short term action plans were drafted for the removal of gasoline dissolved contaminants from groundwater and vadose zone. Performed hydro geological modeling for the groundwater flow and formulated state of the art processes for the removal of free product through horizontal wells, soil venting systems, air sparging, and groundwater treatment systems. Projects included underground utility relocations, drainage, area traffic security control, asphalt and concrete pavement restoration, and drainage system. Coordinated activities of technical personnel, interacting with regulatory agencies to obtain required permits.
- **Project Manager: Concourse "J" at Miami International Airport, Miami, Florida –** Provided project management services for the construction of new concourse. Responsibilities include: Addressing field coordination and necessary design adjustments to maintain construction progress of project; providing assistance to expedite RFI answers; verifying in place scope quantities; reviewing trade contractors pay requests; verifying compliance with the construction documents; assisting in the review and processing of proposed work orders, including estimating; performing punch list reports; reviewing and coordinating progress schedules; reviewing project's monthly progress reports; assisting the Owner in the evaluation of claims; attending trade contractors' meetings.
- **Construction Engineer: Northside Utilities, Miami International Airport, Miami, Florida–** Resident construction engineer assured the completion of the Northside Utilities and Drainage program to provide the necessary underground utility infrastructure for the development of Miami International Airport northside area included new runway and enabled the upgrade of existing facilities to meet code requirements. Work included construction of 5000 lineal feet of utility corridors consisting of water mains, force mains, electrical and communication ductbanks and primary storm drainage. Work completed within schedule.
- **Project Engineer: South Salt Lake City Wastewater Treatment Plant, Murray, Utah, Daniel, Mann, Johnson & Mendenhall —**

Coordinated efforts for the design and construction of new 100 MGD municipal wastewater treatment facility (200 MGD ultimate). Responsible for process and instrumentation diagrams, architectural, structural, mechanical, heating and ventilation, electrical and instrumentation systems. Developed hydraulic profile evaluation for this secondary treatment process and disinfection-dechlorination-post aeration system. Approved paving and grading plan. Evaluated contractor requests for design alternatives, compatibility and cost effects; interfaced with clients and vendors; supervised work of drafting (CADD) and trained other technical operating personnel. Responsible units included five story high pump stations, sludge dewatering, aeration tanks, primary sedimentation, roughing filters, anaerobic digesters, five story power generation building, belt filter presses and flaring.

- **Project Engineer: Autoridad para el Financiamento de la Infrastrucutra de Puerto Rico, Immediate Action Projects, San Juan –** Project Engineer responsible for water and wastewater systems for Puerto Rico committed to a capital investment program in excess of $1 billion. Pump stations sizes range from small 500 gpm sewerage stations to large 120 mgd water pump stations. Projects include potable water systems and wastewater treatment plants for communities; bridges and infrastructures. Responsibilities include preparation of preliminary studies, conceptual designs, detail cost estimating, detail designs along with construction bidding documents, including plans and specifications.
- **Project Manager: Portable Water for Caracas, Venezuela, Gauff Engineering, Frankfurt -** Provided field construction engineering and project management for the installation of two pump stations and one treatment plant for a total rated flow rate of 24 cubic meters per second and for a pipeline network of 118 inches in diameter. System to provide potable water to the city of Caracas, Venezuela.
- **Project Engineer: Portable Water Storage and Distribution Systems for communities in Dominican Republic, BID grants —** Performed hydraulic design of transmission and distribution systems - pipelines, pump stations, wells, reservoirs and storage tanks for potable water distribution network to several small communities in the Dominican Republic. Developed performance specifications for the purchase of new pumping equipment and selected equipment.
- **Project Manager: Concourse "H" at Miami International Airport, Miami, Florida –** Project Manager for the preparation of drawings and specifications of construction of new: Dual taxiway for Airbus 380 plane, system control valve pit and fuel pipe lines, drainage system, airport taxiway lighting and striping and construction of bituminous and Portland cement concrete taxiway pavements. Demolition of existing: valve pit, bituminous and Portland cement concrete pavements, fuel pipe lines, fuel hydrants, light poles, foundations, drainage and pollution control structures. Removal and relocation of passenger loading bridges.
- **Project Engineer: Miami Dade Water and Sewer Department, Maintenance Division; Miami, Florida –** Prepared emergency plans for any sewer spill emergencies within Dade County. Prepared schematics and assigned teams according to areas of responsibilities.
- **Project Engineer: Miami Dade Water and Sewer Department, Miami, Florida –** Project Engineer for MDWASAD, reviewed, evaluated and approved mechanical, electrical and civil works for the construction of all new and upgrades of pump stations and force main sewer lines throughout Dade County. Transmission system with over 900 pumps, lift and booster pump stations, with up to 600 HP drivers. Reviewed consultant's designs for constructability and conformance to Department standards. The primary objective was to expedite the process of bringing the high priority pump stations into compliance with the regulatory criteria.

EBS ENGINEERING, INC.

O. Sylvester Okah – Project Engineer/ Inspector

Education

BS, Civil Engineering
University of Benin, Nigeria 2010

MS, Mechanical Engineering
University of Hertfordshire, United Kingdom 2014

Continuing Education/Certifications

Risk Management and Communication

AutoCAD Software

Operation Management

Quality and Cost control

Forecasting Using MRP/ERP Software

Quantitative assessment of safety systems

Qualifications Overview

Mr. Okah has over 5 years' experience in Civil Engineering. He has substantial experience in both design and project management including site inspection of civil works, structural and drainage work to ensure compliance with the project plans and specifications. He has reviewed and recommended approval of cost estimates, change orders, monitored and observed construction progress ensuring that the project milestones are met and all construction activities are in compliance with plans and specifications. Mr. Okah also has excellent communication skill that enabled him to manage, supervise, and coordinate various construction works from conceptual development through construction to final commissioning.

Relevant Sample Experience

Project Engineer/Inspector – Miscellaneous Projects, EBS Engineering, Inc. (1/2017 - Present): Project management; site inspection of construction, supervision of construction/ related activities, coordination with subcontractors, owner's representatives and governmental agencies. Other responsibilities include daily onsite observation of construction activities, checking for compliance, supervising on-site tests, checking on public complaints, resolving conflicts, and preparing daily report showing productivity, quantities of materials and labor used.

- **Project Engineer: Tamfukal Nigeria Ltd, Port Harcourt, Nigeria (2015 – 2016)** - Quality Control review of the structural design for compliance with the standards, specifications, requirements and procedures. Supervision of structural plans layout and inspection of safety assessments on the site to identify and mitigate any hazards on the ongoing project. Assisted with maintaining good client relationships, biding for upcoming projects and monitoring the project cost and schedule.
- **Project Engineer: Bams Nigeria Ltd, Port Harcourt, Nigeria (2011 – 2013)** - Supervised all ongoing projects within the company. Site inspection of civil works, which included structural and finishing work and ensure that the work was as per the specifications and prepared as-built construction drawings/ final approved drawings from government authorities. Checked and reviewed plans and specifications for the proper construction and quality implementation at job site.
- **Engineering Assistant: O.K ISOKARIARI &SONS Nigeria Ltd, Benin, Nigeria (2008 – 2009)** – Supervision of the building of a new shopping mall project from the foundation to completion. Also worked with the Civil Engineering department in the construction of blocks of apartments for the State Government of Nigeria. Assigned to head the steel reinforcement department which was responsible for bending and cutting steel work according to specifications - including columns base, columns, beams, basket mat for the reinforce slap and other steel work for the entitle project. Also worked on budgeting and scheduling to ensure the project was delivered on time and under budget.

KEITH

LISA BERNSTEIN, PE

Director of Traffic Engineering

Ms. Lisa Bernstein, PE, is an accomplished transportation engineer with over 30+ years of experience in both the public and private sector. She has reviewed and managed projects from roadway construction to traffic impact studies. She is proficient in plan design and review including site plans, signing and marking, signalization, traffic control agreements, permit review and submittals. She has prepared and reviewed trip generation reports, traffic impact studies, signal warrant analyses, parking studies, roadway compliance reports, crash analyses and land use amendments. Ms. Bernstein interacts well with clients and government staff to produce positive results that benefit the project. KEITH is certified with the Florida Department of Transportation for the following Group 6 and 7 Traffic Engineering services: 6.1 Traffic Engineering Studies, 6.2 Traffic Signal Timing, 7.1 Signing, Pavement Marking and Channelization, 7.2 Lighting, 7.3 Signalization.

Years of Experience
34

Education
B.S. Civil Engineering, University of Central Florida, 1995

Professional Registrations
State of Florida Professional Engineer, #55470 (1999)

Professional Certifications
FDOT Advanced Maintenance of Traffic

Professional Affiliations
Fellow, Institute of Transportation Engineers
Member, Florida Section

RELEVANT PROJECT EXPERIENCE

Signalization and Pavement Marking Improvements along MLK Boulevard at Intersections with Blount Road and NW 31st Avenue, Pompano Beach, FL: KEITH is currently providing professional services for the signalization and pavement marking improvements along MLK Boulevard at the Blount Road and NW 31st Avenue intersections. The new signalization to the Blount Road intersection will facilitate safe and reasonable access for southbound traffic on Blount Road to access MLK Boulevard and will properly sequence with the existing signal at NW 31st Avenue. The design plans provided by KEITH include pavement markings, paving, curbing, signage, conduit trenching, grading and sodding, including a complete set of traffic signal design plans to construct a new mast arm assembly at the intersection of Blount Road and MLK Boulevard.

East Sunrise Blvd Traffic Signal and Lighting Design: Middle River Drive to NE 26 Ave, Sunrise, FL: Ms. Bernstein provided professional traffic signal design services, as the Engineer of Record, for three (3) intersections along with corridor lighting for East Sunrise Blvd from Middle River Drive to NE 26 Ave. The project included full signal plan at three (3) intersections that were being converted from span wire to mast arms and high mast lighting. Ms. Bernstein prepared the signal plans, including underground utility locations, signal interconnect, mast arm design, traffic signal timing and pavement markings. The lighting plans included circuit runs, power service required, pole design, using concrete spun poles, and roadway lighting placement design. The mast arm tabulation included signal head location, arm lengths and pole types. New interconnect was provided as part of the upgrade.

Colonial Drive Traffic Calming, Margate, FL: Ms. Bernstein performed Traffic Data Analysis along Colonial Drive, just west of SR 7 in Margate, Florida. The data was used for the implementation of a proposed pedestrian crossing for the Northwest Regional Hospital.

Winfield Drive Traffic Calming, Margate, FL: Ms. Bernstein performed Traffic Data Analysis along Winfield Drive, just west of SR 7 in Margate, Florida. The data was used for the implementation of proposed traffic calming improvements for the roadway corridor.

Transportation Study SR-A1A Hillsborough Beach Boulevard to Boca Raton City Limits, Deerfield Beach, FL: Ms. Bernstein served as project manager for this transportation study consisting of traffic counts, pedestrian counts, conceptual roadway alignment designs and parking evaluations.

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BERNSTEIN, LISA SUSAN

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KEITH

Lori Treviranus, PE

Vice President of Transportation

Ms. Lori Treviranus has over 18 years of experience in civil engineering, providing the highest quality infrastructure and facility solutions to transportation agencies, local governments, private developers and institutional clients. She is experienced in roadway design, intersection development, super-elevation transitions, roadway modeling, cross-sections, pedestrian/bike paths, master planning, hydrology/hydraulic studies, cost estimation, stormwater control plans preparation, drainage and utility design, NPDES permitting and SWPPP preparation and implementation. In addition, she is familiar with the surveying aspect of civil engineering and has experience working with sustainable designs. Typical scopes of work she has been responsible for include acquisition and due diligence tasks, creation of conceptual plans and assistance with funding throughout the project phases and public outreach activities.

Years of Experience
18

Education
B.S. Civil Engineering, University of Florida, 2000

Professional Registrations
State of Florida Professional Engineer, #73684 (2011)

Professional Certifications
Qualified SWPPP Developmen/ Practitioner, California #66408

Professional Affiliations
American Society of Civil Engineers (ASCE)

American Society of Highway Engineers (ASCE) Central Florida Chapter Member

Women's Transportation Seminar (WTS) Central Florida Chapter Member

RELEVANT PROJECT EXPERIENCE

FDOT District 4 Design Services for Washington Street and 72nd Avenue Mobility Improvements, Hollywood, FL: This project will widen existing portions of Washington Street and 72nd Avenue to accommodate installation of bike lanes, while performing ADA upgrades and drainage improvements as needed. This project's stakeholders include FDOT, the City of Hollywood and the Broward County Metropolitan Planning Organization (MPO). Ms. Treviranus is responsible for coordinating with these agencies, while leading the design team.

FDOT District 4 SW 56th Avenue from Pembroke Road to Stirling Road, Broward County, FL; Ms. Treviranus served as the Project Manager for this complete street mobility project which includes the widening, milling and resurfacing of SW 56th Avenue to add 7-foot buffered bicycle lanes for the length of the project. ADA ramps improvements, signing and pavement markings and replacement/installation of new signage as necessary to conform to MUTCD and current Greenbook Design Standards is included in the contract. The key issue of this project is coordination; we are coordinating with the City of Fort Lauderdale and Broward County for their preferences and standards, Broward County Metropolitan Planning Organization (MPO) since they are funding a portion of the project and FDOT District 4 as the client and project facilitator.

Florida's Turnpike Enterprise (FTE), SR 91 (Turnpike Mainline) from MP 106.10 to MP 111.70, Palm Beach County, FL: This project included development of an Existing Roadway Conditions Assessment Report (ERCAR), a detailed analysis of the existing conditions of the Turnpike Mainline and one interchange with respect to design standards and safety of the roadway, bridges, drainage, signs and miscellaneous project components. The ERCAR documented deficiencies, recommended solutions and identified associated costs. The project limits also included two interchanges, one at MP 107, SR 710/Beeline Highway and one at MP 109, PGA Boulevard/Palm Beach Gardens. We reviewed all ramps and the signalized intersections at SR 710/Beeline Highway. The signals at the PGA Boulevard/Palm Beach Gardens intersections were covered under another project.

Florida's Turnpike Enterprise (FTE), SR 91 (Turnpike Mainline) Okeechobee Boulevard Interchange, Palm Beach County, FL: Ms. Treviranus served as utility coordinator for this interchange ramp realignment project. The purpose of this project was to evaluate and redesign the existing ramp geometry, signing and lighting to address run-off-the-road crashes at the southbound exit ramp. Project elements included milling and resurfacing, widening, cross slope correction, minor drainage, stormwater pollution prevention plan (SWPPP), utility coordination, signing and marking, lighting, ITS and temporary traffic control plan (TTCP).

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Halsey Beshears, Secretary

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KEITH

Years of Experience
38

Education
B.S. Civil Engineering, University of Miami, 1978

Professional Registrations
Professional Engineer, State of Florida, #33256 (1983)

Professional Certifications
FLL Airport Employee Emergency Training (AEET) 2018

RELEVANT PROJECT EXPERIENCE

Deerfield ADA Sidewalk Assessments, Deerfield Beach, FL: This project required an assessment and design study of existing public sidewalks in the City owned right-of-way within the limits of the Community Redevelopment Agency district boundaries. This task was specifically to review, evaluate and prepare an assessment report of the existing pedestrian traffic areas to determine if the current conditions do or do not meet the American Disabilities Act (ADA) accessibility requirements. KEITH created the final assessment report for presentation to the City CRA and Engineer. Upon completion of their review and evaluation, the City identified the areas of greatest need and directed KEITH to commence the design associated with making all areas ADA compliant. The firm also developed a Capital Improvements Project (CIP) budget to implement the future design and construction of the sidewalks within the CRA to meet ADA standards.

Holmberg Roadway Improvements, Parkland, FL: KEITH Inc. was selected to provide professional engineering design and related services to the City of Parkland for roadway improvements along Holmberg Road between Pine Island Road to the west and University Drive to the east. Phase II of the project included the addition of Roadside Flashing Beacons (RRFBs) at the intersection of Holmberg Rd. and NW 87th Ave. The roadway improvements included incorporating new dedicated bicycle lanes and roadside swales along both sides of the roadway, roadway milling and resurfacing (with some widening), miscellaneous safety improvements, landscape adjustments, overall drainage and roadway improvements. The scope of services for this project includes: Surveying, Utility Locating Subsurface Utility Engineering (SUE), Engineering, Permitting and complete Construction Administration.

City of Pompano Beach & CRA Miscellaneous Engineering Services Contract, Pompano Beach, FL: KEITH has served as the General Engineering Consultant for the City of Pompano Beach for over twelve (12) years. Mr. Thiele serves as Senior Engineering Manager for many of the project assignments that have been in the redevelopment of roadways, parking facilities and utility infrastructure design. All service of the firm are utilized including planning, civil engineering, surveying, subsurface utility engineering, and landscape architecture.

Pompano Beach Boulevard Streetscape, Pompano Beach, Florida: KEITH prepared drainage, water distribution and pavement design for this roadway/streetscape overhaul project. The improvements provided for a more modern beach-front access way with improved parking and pedestrian walkways. Mr. Thiele performed quality control and quality assurance reviews on the design and supervised the construction phase of the project. KEITH performed construction inspection duties in order to prepare and submit the construction certification of completion to all governing permitting agencies.

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

Florida dbpr

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Broward County Board of County Commissioners
9/23/2019

ALEX LAZOWICK, PE, PMP

Civil Engineer

Mr. Lazowick was introduced to civil engineering and construction by his grandfather, Mr. Bill Keith, founder of the firm. He is eager for the challenge to be the third family generation professional working to provide quality developments within the South Florida community.

Project Manager: Mr. Lazowick has gained experience in civil engineering design projects including water, sewer and drainage systems, roadway design, permitting, and construction administration services. He understands the importance of working together as a team to quickly identify and establish project goals and achieve successful results in the most expedient and cost effective manner. His qualifications include knowledge with AutoCAD Civil 3D, Navisworks, Revit, BIM, Microsoft Office, computer networking, and he possesses excellent communication skills.

BIM Manager: Mr. Lazowick, as the firms BIM Manager, oversees all 3D oriented projects. From Laser Scanning to 3D GIS, Mr. Lazowick is tasked with getting the job done. He manages the client relationship and QC's all 3D deliverables. He is always eager to try new software and find new workflows to help save our clients time and money. He is Autodesk Certified and well qualified with all Autodesk, ESRI and Lecia software. He trains all new employee on the needed software. He is also tasked with assembling new computers to handle the ever growing file sizes.

RELEVANT PROJECT EXPERIENCE

City of Pompano Beach Miscellaneous Civil Engineering Services, Pompano Beach, FL: KEITH has served as the General Engineering Consultant for the City of Pompano Beach for over 16 years on an as needed basis. All services of the firm are utilized including planning, civil engineering, surveying, subsurface utility engineering, and landscape architecture.

City of Pompano B**each Design/Build Pier Beach Parking Garage, Pompano Beach, FL:** The new Pompano Beach Pier/Beach Parking Garage is located at the southeast corner of North Ocean Blvd. (S.R A1A) and NE 3rd Street on a 3.5-acre site. The new parking garage includes five stories, 625 parking spaces, speed ramp to facilitate access to higher levels of the garage and some retail space on the ground level fronting NE 3rd Street and the new Pier Street. As part of the design-build team, led by Kaufman Lynn Construction, KEITH was responsible for Planning, Surveying, Utility Coordination/Investigation, Civil Engineering, Landscape Design, Permitting and Construction Inspection of the project.

Hallandale Beach Fire Station 7 and Emergency Management Facility, Hallandale Beach, FL: The building program and design for the City's new main fire rescue headquarters and emergency management facility were developed to achieve LEED Silver Certification and include a 25,000 SF, two-story complex with four apparatus bays and living quarters for up to 16 firefighters. KEITH is providing Civil Engineering, Landscape Architecture and SUE services.

Santa Barbara Shores / SE 8th Court Bridge Replacement, Pompano Beach, FL: Mr. Lazowick provided construction engineering inspections for the bridge crossings over a leg of the Lake Santa Barbara waterway within the Santa Barbara Shores subdivision in the City of Pompano Beach. The project included construction inspection for phased bridge and bulkhead rehabilitation/ replacement. This bridge serves as the only means of access to the island and required extensive coordination to ensure uninterrupted access and utility service throughout the construction. Creation and implementations of a succinct phasing and detailed maintenance of traffic (MOT) plan, as well as significant coordination efforts with the contractor, City and the residents of the island were required.

Years of Experience
10

Education
B.S. Civil Engineering, University of North Florida, 2010

Professional Registrations
Professional Engineer, State of Florida, #78625 (2015)

Project Management Professional Certification No. 2554175 (2019)

Professional Affiliations
ASCE Member

FES Member

BIM Smart Foundation Member

BuildingSMART Foundation Member

Professional Certifications
Troxler Nuclear Gauge

FDOT Workzone Traffic Control Intermediate Level MOT

30 Hour OSHA General Industry safety and health hazard recognition and prevention

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LAZOWICK, ALEXANDER SCOTT

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MARK MITCHELL

Senior Utility Coordinator

Years of Experience
20

As a Subsurface Utility Engineering Senior Project Manager for KEITH's Utilities Division, Mr. Mark Mitchell is responsible for scheduling and supervising field crews, conducting utility field meetings, utility records research, conflict analysis and determining if additional utility investigation is needed for assigned projects in South Florida. He completed projects from beginning phases to final delivery; which included preparing and submitting fee proposals, coordinating with clients, being able to setup projects for field crews and conducting field visits when trouble shooting is required; download and process collected data; performed quality control and finalize for delivery while keeping clients informed on a daily basis. His experience also includes creating DTM's, Topo's, Tin Models, PNC's and Test Hole summary spread sheets. Mr. Mitchell provides a liaison between designers, utility agencies and owners on behalf of clients to provide utility coordination services, providing documentation, inter-coordination and maintenance of files of all activities for each utility agency.

RELEVANT PROJECT EXPERIENCE

FDOT District 4 Dixie Highway Flyover Design-Build, Broward County, FL: Originally this project was expected to follow the traditional Design, Bid, Build process, but was converted to a Design-Build. In order to meet the Department's aggressive schedule for advertisement, the bid package creation was placed on a fast track. Being part of the original design team providing Subsurface Utility Engineering and design survey services, Mr. Mitchell was contracted to provide additional Subsurface Utility Engineering and survey services required to help finalize the bid plans. It was his past experience and vast available resources that made it possible to meet the designer's needs and schedule and ultimately those of the Department.

Design Engineering Services for SR 874 (Don Shula Expressway) Roadway Modification / Miami-Dade Expressway Authority / Miami-Dade County, FL: Mr. Mitchell provided designating (ASCE Quality Level B) and locating (ASCE Quality Level A) Subsurface Utility Engineering services to map the vertical and horizontal position of underground utilities within project limits of the proposed expressway modification from Southwest 88th Street (Kendall Drive) to South of State Road 826 (Palmetto Expressway)/ State Road 874 Interchange.

Briny Avenue Streetscape Improvements, Pompano Beach, FL: This project involved the reconstruction of East Atlantic Boulevard from A1A to Pompano Beach Boulevard/Briny Avenue including wider sidewalks, revised parking configurations and lanes. KEITH provided professional services for a design survey as well as the designation and location of subsurface utilities along Briny Avenue from the south right-of-way line of Atlantic Boulevard to the south end of Briny Avenue.

All Aboard Florida Miami Grand Central Station, Miami-Dade County, FL: KEITH was tasked with providing Subsurface Utility Engineering (SUE) Quality Level (B) utility designation services along 7,840' linear feet generally between NW 1st Avenue from NW 1st Street to north of NW 8th Street for the proposed All Aboard Florida Miami Grand Central station. The utility investigation consisted of passive/active designation methods and Ground Penetrating Radar. All tone able and non-tone able utilities were identified to help the design team identify potential conflicts with existing utilities.

Martin Luther King Jr. Boulevard, Pompano Beach, FL: As the field supervisor, Mr. Mitchell was tasked with providing ASCE Standard Quality Level B (Designating) and Quality Level A (Locating) Subsurface Utility Engineering services to assist the design engineer on accurately identifying the existing utilities in order to mitigate conflicts with the proposed design.

REBECCA GREEN

Utility Coordinator

Ms. Rebecca Green has developed a comprehensive understanding of the processes involved in utility coordination as well as subsurface utility engineering since starting with KEITH in 2016. She is familiar with FDOT utility procedures in accordance with the Utility Accommodation Manual and has worked to develop relationships with UAOs statewide. Ms. Green is actively furthering her professional studies, pursuing a Bachelor's degree in construction management.

Years of Experience
3

Education
Associates in Arts (A.A.) in General Studies, 2015

RELEVANT PROJECT EXPERIENCE

FDOT D6 Districtwide Utility Coordination Services, Miami-Dade County, Florida: As a Prime consultant, KEITH is providing utility coordination services to FDOT District 6 for contract FM #250723-3-32-01. The services provided under this task work order contract include initial contact, pre-design, contact, final design contact, utility clear package, utility project file & documents and project status report.

The Wave, Fort Lauderdale, FL: Ms. Green coordinated with public and private utility agencies to create Utility Work Schedules in order to appropriately relocate/adjust/protect their facilities and to ensure compliance between the utility agency and awarded Design-Build Firm. She has been involved throughout the bidding process from rating proposals to creating the presentation for the Utility Pre-Proposal Meeting.

Northern Layover and Light Maintenance Facility, Riviera Beach, FL: Working closely with the client, Ms. Green fulfilled Client requests for information regarding the public and private utility agencies including the compilation of a list of contacts and identification of potential project conflicts. She coordinated with the involved agencies to determine the exact location and/or depths of their facilities and attended multiple utility meetings with the client. Ms. Green also assisted in the collection and organization of field data gathered by the Subsurface Utility Engineering field crew and properly communicated this data to both the clients and the utility agencies. Ms. Green has assisted in the development of all schedules related to utility relocations and continues to attend progress and coordination meetings.

I-95 and 45th Street, West Palm Beach, FL: Ms. Green coordinated between project parties and introduced each utility agency to the concept plans and project overview. Currently, Ms. Green is drafting a write-up based on the information provided by the utility agencies for the PD&E study to assist in determining the most cost-effective and least impactful roadway design in regard to utilities.

I-95 Express Lanes Phase 3C: Ms. Green has been involved with interpreting Subsurface Utility Engineering and Survey data to create a utility base map on MicroStation representing quality level "B" locates and test hole data. This information has been used to identify utility conflicts. Ms. Green is also involved in the bidding process as a reviewer for the Letters of Interest.

Pembroke Road, Miramar, FL: Ms. Green organized and analyzed data from the Subsurface Utility Engineering field crew to begin creating a verified utilities report following Broward County standards. She worked closely with KEITH's survey department to ensure the accuracy and quality of reports and client communication moving forward.

KEITH

DWAYNE VAUGHN, PE

Vice President of Construction Management

Mr. Dwayne Vaughn is a results-oriented professional offering over 33 years of broad technical experience in the areas of aviation, rail transit, and roadway transportation programs with the last 17 years focused on program management, design management and construction management. He has extensive experience in management of governmental contracts acting in an owner's rep, construction manager and/or program manager capacity. During his career, Mr. Vaughn also provided preliminary engineering services on several large rail transit projects both nationally and internationally. He also assisted in the management of Intermodal program developments both in Broward and Dade counties in Florida. Mr. Vaughn also has General Engineering Consulting experience on FDOT programs. As a Registered Professional in the states of Florida and Hawaii, and with a Bachelor of Engineering degree in Civil Engineering, Mr. Vaughn is driven by new challenges and a desire to be successful through a hands-on, team-building management approach. He has extensive management experience on large governmental programs and understands the importance of meeting the needs of the owner from concept through implementation

Years of Experience
17

Education
B.S. Civil Engineering, Auburn University, Alabama, 1985

Professional Registrations
Professional Engineer, State of Florida, #47291(1993)

Professional Engineer, State of Hawaii, #7595

Professional Affiliations
ASCE Member

Professional Certifications
Project Management Certification (URS Corp.)

Safety Training Certification

RELEVANT PROJECT EXPERIENCE

Miami Intermodal Center Project (MIC), Miami, Florida - $1.3 billion program: Mr. Vaughn provided engineering support during the environmental phase of the MIC Program, and as Deputy Project Manager, later was responsible for assisting in the day-to-day management of the Intermodal Program which included the early design and implementation of parking structures, rail transit facilities, roadway improvements, and right-of-way acquisition components. Mr. Vaughn provided design review input for the rail and roadway component interfaces and station area planning. Close coordination with stakeholders, team members, and Miami International Airport (MIA) staff and consultants was a critical role.

FDOT District 7, District-Wide General Consultant to the Public Transportation Office (PTO), Tampa, Florida: Mr. Vaughn performed as an extension of PTO staff providing assistance to the District Public Transportation Manager (Ms. Debbie Hunt) and to the Aviation and Transit Administrators; conducted and coordinated reviews of state roadway plans for PTO involvement and supported Aviation Administrator reviewing plans, tracking invoices and Joint Project Agreements (JPAs).

FDOT District 7, General Engineering Consultant Services, Tampa, Florida: Mr. Vaughn assisted in the coordination and management of limited access and state roadway projects. As Design Engineer, Mr. Vaughn performed and coordinated phased reviews of roadway plans designed by other consultants. He also monitored design schedules, reviewed invoices, assisted in negotiations for supplemental agreements by consultants, provided level of effort estimates, and assisted the District Utility Engineer negotiating utility agreements, in addition to performing minor design tasks.

I-595 Port Everglades Expressway, Fort Lauderdale, Florida - $1.2 billion program: As an assistant engineer for a General Engineering Consultant contract in Tallahassee, Florida, Mr. Vaughn assisted and coordinated phased reviews of design packages through the FDOT Central office in Tallahassee. He also assisted in the development of coordinate geometry for a section of mainline and ramps for the 2.5-mile, Expressway linking Fort Lauderdale-Hollywood International Airport to Sawgrass Expressway.

Ron DeSantis, Governor

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VAUGHN, DAVID DWAYNE

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CORAL SPRINGS FL 33076

LICENSE NUMBER: PE47291

EXPIRATION DATE: FEBRUARY 28, 2021

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KEITH

JOHN WEYMOUTH, PE

Construction Engineering Inspector

Mr. Jonathan Weymouth has 28 years of experience in the planning, design, permitting and construction of heavy transportation, utility as well as all types of civil and environmental engineering projects. His work involves the supervision of engineering and technical personnel engaged in the design and construction of public and private sector improvements. Past projects include major transportation infrastructure projects such as airports, bridges, highways and roadways. This is in addition to civil land development, recreational facilities and environmental mitigation projects. The design/permitting/construction experience that Mr. Weymouth brings to the team regarding key elements related to the Expansion of Runway 9L-27R Program at FLL will be highly valuable to BCAD. These elements include earthwork and embankments, stormwater management, concrete and asphalt pavements along with communication, potable water distribution and sanitary sewer collection systems. Additionally, he has extensive knowledge and effective experience coordinating with FEC, as well as with permitting and federal agencies such as FDOT and FAA. He is very familiar and fully qualified to implement and control the guidelines and requirements established by these agencies.

Years of Experience
28

Education
B.S. Architectural Engineering, University of Miami, 1990

Professional Registrations
Professional Engineer, State of Florida, #52802 (1998)

Professional Certifications
10-Hour OSHA Safety Certification

Workzone Traffic Control- Advance Level

FDOT Level II Certification - pending

RELEVANT PROJECT EXPERIENCE

Broward County's Wiles Road Extension and Bridge Project: As Construction Project Manager, Mr. Weymouth oversaw the roadway and bridge over the Florida's Turnpike to complete the corridor between Powerline Road and Lyons Road with a construction cost of $21.5 million dollars. This project includes transmission water and sewer along Wiles and the directional bores under the Turnpike. He was responsible for the coordination of construction between the Broward County staff, Florida Power and Light, Southern Bell Communications as well as the two municipalities within the County's right-of-way. This project includes full depth roadway approaches, substructure with bulb-tee beam and stay-in place metal deck superstructure, MSE retaining walls, lighting and signalization improvements, drainage and utility improvements for the City of Deerfield Beach and Broward County. Involvement entailed:

- Coordination of construction between the County staff and their utility department, Florida Power and Light, Southern Bell Communications as well as the two municipalities within the County's right-of-way.
- Provided construction management services to the City of Deerfield Beach and the City of Coconut Creek for the construction of the drainage, roadway and landscaping improvements.
- Duties included coordination of the contractor and inspection staff, geotechnical/ utility testing and project certification as well as approval of contractor pay requests, change orders and contract amendments.

Broward County's Pine Island Roadway Improvement Project: Construction Engineer for a construction contract to extend Pine Island Road between Griffin Road and Stirling Road with a construction cost of 4 million dollars. Involvement entailed:

- Coordination of construction issues with the utility companies and two municipalities within the right-of-way.
- Provided construction management services to the City of Cooper City and the Town of Davie for the construction of the water, sewer, drainage, roadway and landscaping improvements associated with the 1.5 mile extension of Pine Island Road.
- Duties included coordination of the contractor and inspection staff, geotechnical/utility testing and project certification as well as approve contractor pay requests, change orders and contract amendments.

Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
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WEYMOUTH, JONATHAN PATRICK

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EXPIRATION DATE: FEBRUARY 28, 2021

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DANIEL CHECCHIA

Vice President of Location Services

Mr. Checchia has over 21 years of experience in transportation engineering, surveying, civil design and construction related fields, with expertise in Subsurface Utility Engineering (SUE), including Utility Coordination. His duties are to oversee the day-to-day operations of all Subsurface Utility Engineering and Coordination projects for our firm. Mr. Checchia is responsible for assisting clients with utility research, identification, data management and coordination. Besides having developed a strong rapport with local utilities and municipalities, his knowledge and experience in the Subsurface Utility Engineering process allows him to easily recognize utility conflicts during design and construction. He has been involved on a variety of projects such as design, design build and private sector work. Mr. Checchia's understanding of the Quality Levels in the ASCE Guidelines enables him to manage a project from pre-design to post construction, negotiating to minimize utility impacts and suggesting and implementing cost effective timely resolutions for utility conflicts. Mr. Checchia is fully knowledgeable of the FDOT Utility Coordination process, with eight years of involvement working on multiple types of transportation projects.

Years of Experience
21

Education
AS of Applied Science in Construction Technology, Suffolk County Community College, 2008

Professional Affiliations
Founding Board of Director-SUE Association

Transportation & Expressway Authority Membership of Florida (TEAM FL)

Florida Utility Coordination Committee (FUCC)

Certifications
FDOT Maintenance of Traffic

Issues Affecting SUE

Risk Management and Professional Liability in SUE

Rebuilding America's Infrastructure

SAFE PIPES Act and Related Legislation

RELEVANT PROJECT EXPERIENCE

Federal Highway (US-1) Beautification Project, Delray Beach, FL: Mr. Checchia served as the Project Coordinator for this project that includes US-1 (Federal Highway) in Delray Beach from just South of S.E. 10th Street to just North of N.E. 8th Street. This project provides the subsurface utility engineering (SUE) locations to support design services necessary to decrease the current three-lane configuration of US-1 (Federal Highway) through the downtown area to a two-lane roadway with additional parking, walkways and landscaping. This project required utility designation services and over 150 utility test holes throughout the project limits to verify potential conflicts. The firm also conducted a survey of over 220 drainage structures throughout the corridor.

FDOT District 4 I-75, Broward County, FL: During his six years with FDOT D4, Mr. Checchia was a member of the I-75 cross slope analysis comparison team. I-75 was an advanced technical project that involved comprehensive survey knowledge of conventional, road profiling, pavement evaluation, LAMP, fixed wing and global positioning system (GPS) procedures. He worked with other District personnel as well as consultant team members to conduct test and analyze results. He was responsible for research, data acquisition, materials and presentation organization. Mr. Checchia was responsible for training and educating field personnel on equipment and software applications.

FDOT District 4 I-95 Express Phase 3A-2, Broward County, FL: This project from North of Commercial Boulevard to SW 10th Street, is a contribution of the I-95 Express Lanes within Broward County to enable Design/Build firms to have knowledge of identified conflicts within the project limits that must either be adjusted at the Design/Build firm's expense or they must design to avoid impacts. Mr. Checchia participated in the identification of potential impacts and assisted several cities with their understanding of the State's expectation for coordination and relocation.

Design Engineering Services for SR 874 (Don Shula Expressway) Roadway Modification, Miami-Dade Expressway Authority, FL: Mr. Checchia provided designating (ASCE Quality Level B) Mr. Checchia provided designating (ASCE Quality Level B) and locating (ASCE Quality Level A) Subsurface Utility Engineering services to map the vertical and horizontal position of underground utilities within project limits of the proposed expressway modification from Southwest 88th Streets (Kendall Drive) to South of State Road 826 (Palmetto Expressway)/ State Road 874 Interchange. utilities.

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hpconsultantsinc@earthlink.net

Arvind S. Kumbhojkar, Ph.D., PE, F. ASCE
HP Consultants Inc.
Miami, Florida

LICENSURE Professional Engineer, State of Florida 1989

EDUCATION

▪ State University of NY at Buffalo, Buffalo, NY	Ph.D.(Civil Engineering)	1987
▪ Rensselaer Polytechnic Institute, Troy, NY	M.S. (Civil Engineering)	1982
▪ Walchand College of Engineering, Sangli, India	B.E. (Civil Engineering)	1974

HONORS

- Diplomate, Association of Geo-Professionals, Geo Institute, ASCE 2011
- Fellow, American Society of Civil Engineers (ASCE) 2010

CAREER PROFILE

Dr. Kumbhojkar has been providing engineering consulting services under the banner of *HP Consultants Inc*., a consulting firm that he established in 2002. Previously, he was the Vice President of Transportation and Traffic Engineering at Hughes Hughes Inc. in Ft. Lauderdale, FL (2002), Geotechnical Department Manager of *Professional Service Industries (PSI)'*s Miami and Ft. Lauderdale offices (2001-2002), ITS Administrator, and Deputy Traffic Operations Engineer at *FDOT D-6* in Miami (1994-2001), and geotechnical faculty at the *University of Miami* (1986-1994).

Since 2002, Dr. Kumbhojkar has provided services to numerous clients in Florida (See the company profile attached elsewhere) in the areas of Civil, Geotechnical, and Traffic Engineering as well as ITS, Project Management and CEI for more than 500 projects under the banner of *HP Consultants Inc.* He is the lead Geotechnical Engineer for 50+ assignments for the **ongoing Broward County's Solicitation # R1177105P1** titled ***Continuing Engineering Services for Traffic, Roadway, and Civil Engineering Services.***

As the Deputy Traffic Operations Engineer at FDOT D-6, he actively participated in and managed for 7 years the Traffic Operations sections for Plans, permits & traffic study reviews, freeway incident management, RCI database updates and access management. He drafted policy papers, technical memoranda for submitting to the State Transportation Secretaries and FHWA and contributed to in-house feasibility studies and reports. He developed numerous scopes of work for acquiring consultant services as well as, design-build, public-private-partnership and maintenance projects and negotiated contracts to the tune of $75+million. He worked extensively with the Planning Department for work program development and fund allocations. He was an active member of FDOT's statewide Traffic Operations committees. He was instrumental in developing SE. Florida's ITS program, *SunGuide* as the regional ITS Coordinator. He worked closely with Districts IV and Turnpike, Broward, M-Dade and Palm Beach Counties and MDX.

As the Vice President and Engineer of Record for Hughes and Huges Inc. he completed many traffic studies and Maintenance of Traffic projects. Since 2003, he has continued to provide such services. He has excellent knowledge of traffic design (Roadway design and traffic standards, plans preparation manual, access management, Manual Uniform Traffic Control Devices, signal timing design, diversion routes) and public concerns.

As the ITS Administrator at FDOT, Dr. Kumbhojkar helped establish and led the regional ITS program for Miami-Dade, Broward, and Palm Beach counties, now known as SunGuide. In his capacity as the regional coordinator, he worked closely with FDOT District-4 and turnpike district; Miami-Dade, Broward and Palm Beach County MPOs, public works and other departments, Miami-Dade Expressway Authority (MDX), Tri-Rail, and major cities in the tri-county area.

PAST AND PRESENT MEMBERSHIPS

- Member, Technical Committee on Shallow Foundations, Geo Institute, ASCE
- Member, Technical Committee on Earth Retaining Structures, Geo Institute ASCE
- Former Member, LRFD Task Force, ASCE
- Former Member, Technical Committee on Applications of Emerging Technologies, A2F09, NRC/ TRB
- Former Member, Technical Committee on Soil and Rock Instrumentation, A2K01, NRC/ TRB
- Former Member, Water and Sewage Technical Committee on Lifeline Earthquake engineering, ASCE
- Former Member, Federal Highway Administration's ITS Peer-to-Peer committee
- Former Member, Intermodal Task force, ITS America

PROJECT EXPERIENCE

GEOTECHNICAL

- Continuing Traffic, Roadway, & Civil Engineering Services (Metric, Broward County) >40 assignments yet
- Geotechnical Services for Wiles Rd, From Riverside to Rock Island Rd. (Kimley-Horn, Broward County)
- Geotechnical Services for NW 42nd Avenue Bridge Replacement (Metric, City of Miami Gardens)
- Geotechnical Services for Meekins Lake & Behan Lake (City of Pembroke Park)
- Hydrogeological Services for Meekins Lake & Behan Lake (City of Pembroke Park)
- Borings for NW 20 Ct. Cul-De-Sac Reconstruction (City pf Pembroke Pines)
- Geotechnical Services for 8" Water Main for NE 2 Ave and NE 2 Ct (City of Hallandale Beach)
- Geotechnical Services for four Roadways in Hawaiian Gardens (City of Lauderdale Lakes)
- Material testing Services for four landfills (Broward County)
- Geotechnical Services for NW 7th Avenue Reconstruction (Metric, City of Miami Gardens)
- Geotechnical Services for Broward County Rail-Road Crossings ATMS (Cornet, Broward County)
- Engineering Testing Services for Pine Island Blvd, Broward County (Broward County)
- Geotechnical Investigation for the East Re-Development Transmission & Distribution Water Main Improvement Program – Phase III (CES, City of Miramar)
- Geotechnical Services for WWTP Related to OOL Program (CDM, MDWASD) 3 assignments yet, ongoing
- Geotechnical Services for Alexander Orr Water Treatment Plant (HDR, MDWASD) 1 assignment, ongoing
- Geotechnical Services for Alexander Orr Water Treatment Plant (CDM, MDWASD) >10 assignments
- Geotechnical Services for Environmental Clean-up & Compliance Services (AECOM, RER)>50 assignments
- Geotechnical Services for the Parking Garage K, PortMiami, Miami (MD- Port of Miami)
- Geotechnical services for the Hialeah Gardens Library, Hialeah Gardens, Fl. (MD-ISD)
- Geotechnical investigation for replacement of WM in Shenandoah area, Phase-A (EAC, MD-WASD)
- Geotechnical services for the trellis fence at the Cultural Arts Center (MD-ISD)
- Geotechnical Services for the North Corridor Extension, Miami, Fl. (Parsons, MDT)
- Geotechnical Investigation for Port of Miami Sign (MD-Port of Miami)
- Geotechnical Investigation for North Trail Park-Sports Fields and Parking Lot (M-Dade Parks)
- Geotechnical investigation for SW 268/264 St. connector project (MD-PWD)
- Geotechnical Investigation the aquatic facilities at Perrine Park (M-Dade Parks)
- Geotechnical Services for I-75/I-595 Video Monitoring System (FDOT D-4, Vanus Inc.)
- Geotechnical Services for I-95/I-595 Video Monitoring System (FDOT D-4, Cornet Tech./Kimley-Horn)
- Dewatering plan for I-95 box culverts on EPB-10, EPB-8 and Spencer Lake canals (FDOT D-4, AWCL)
- Subsurface Investigation for I-95 Ramp-I &Ramp-L at SR-80 (FDOT D-4, AWCL)
- Value Engineering for SR-80, Palm Beach County (FDOT D-4, AWCL, KMA Engineers)
- Stability Analysis of I-95 MSE walls at SR-80 (FDOT D-4, AWCL, KMA Engineers)
- C-51 Canal Bulkhead VECP (FDOT D-4, AWCL, KMA Engineers)
- Subsurface exploration for SW 127th Ave. bridge end-bents (PWD now PWWMD)
- Subsurface exploration for SW 160th St. between SW 147th & SW 137th Ave (PWD PWWMD)
- Soil Investigation for Pump Station # 617(WASD)
- Subsurface Investigation for Belen Drainage Improvement Project (RER)
- Subsurface exploration for 12" D.I. force main in NW 17th Street (WASD)
- Subsurface exploration for, Bird Lakes, Country Village & Oaks Grove Parks (PROS)
- Geotechnical Investigation for Northeast Regional Library, Aventura (ISD)
- Geotechnical Investigation for the Cuban Memorial at the Tamiami Park (PROS)
- Subsurface exploration for International Park, Miami, Fl. (Parks now PROS)
- Subsurface exploration for NW 87th Ave. bet NW 154th St. & NW 186th St. (PWWMD) 3 projects

- Geotechnical Investigation for North Trail Park-Sports Fields and Parking Lot (Parks now PROS)
- Geotechnical Investigation for Pedestrian Bridges, SW 48 St between SW 107 & 117 Ave (PWWMD)
- Subsurface exploration for SW 26th St bet SW 147th Ave & SE 149th Ave. (PWD now PWWMD)
- Geotechnical Investigation for 24" D. I. Reclaimed water main from MDWWTP to Biscayne Blvd (WASD)
- Geotechnical Services for Haulover marina dock master building complex (PROS) 2 projects
- Geotechnical Investigation for Haulover Park Office Structural Evaluation (PROS)
- Soil borings & percolation tests at NE 91 St. from NE 10 Ct to N. Shore Dr. (PWWMD)
- Percolation tests at 30th Ave. water pump station (WASD)

TRAFFIC ENGINEERING AND STUDIES (AT HPCI AND HHI)

- Traffic Impact study for Dr. Krop SHS, Miami, FL (Silva Architects, LLC, M-Dade Public Schools)
- Traffic design and study for TotalBank at Bird Road (Tsao Design Gr.)
- Traffic design and study for TotalBank in Doral (Tsao Design Gr.)
- Vehicle Evacuation Plan for the Orange Co. Convention Center, Orlando, FL, (Orange Co, ERPM)
- Countywide Vehicle evacuation Plan for the Orange County (Orange County, ERPM)
- VECP/Revised Traffic Control Plan/ SR80, Phase II in Palm Beach Fl., (FDOT D-4, AWCL)
- Traffic Engineering Program management assistance to the Village of Palmetto Bay, Florida
- *i* Florida Daytona Speedway Vulnerability Assessment and Emergency Evacuation Plan (FDOT D-V)
- Traffic design Memo, PD&E study for Indian Street Bridge in Martin Co (FDOT D-4, H.J. Ross)
- Traffic Impact Analysis for Residences at Andalusia, a 10-story residential-commercial development in Coral Gables, Florida (Related Group of Florida)
- Traffic Circulation Analysis for Young's Circle, Hollywood, Florida
- Access Evaluation for Kendallwood Industrial Park, Miami, Florida

INTELLIGNT TRANSPORTATION SYSTEMS (AT HPCI AND FDOT D-6)

- CEI Services for ATMS on SR 112, SR 874, SR 878, SR 924 (MDX, CSA) Design-Build
- Vehicle Evacuation Plan for the Orange County Convention Center (Orange County, ERPM)
- *i* Florida Daytona International Speedway Vulnerability Assessment and Emergency Evacuation Plan (FDOT D-V, Greenhorne &O'Mara)
- Regional Vehicle evacuation Plan for the Orange County (Orange County, ERPM)
- I-75/I-595 Video Monitoring System (FDOT D-4, Vanus Inc.)
- I-95/I-595 Video Monitoring System (FDOT D-4, Cornet Technologies/Kimley-Horn Associates)
- Value Engineering for SR-80, Palm Beach County (FDOT D-4, Archer-Western, KMA Engineers)
- VECP/Revised Traffic Control Plan/ SR80, Phase II in Palm Beach Fl., (FDOT D-4, AWCL)
- VECP/Traffic Control Plan/Detour for Box Culvert Removal along SR 80 (FDOT D-4, AWCL)
- Value Engineering for SW 328 Street (M-Dade County)
- Program Management and Traffic Engineering Assistance to the Village of Palmetto Bay, Fl.
- Expert Witness Services, FDOT Vs. Lake Technology (FDOT)

As the FDOT Program Manager, Dr. Kumbhojkar was personally responsible for initiating project concepts, coordinating construction, CEI and design projects and managing operations and maintenance projects. He was the Project Manager (√**)** and/or Project Administrator (**X**) for the following projects.

√**X** Design of ITS for I-95 in M-Dade County
17.5 Miles of 96-fiber fiber trunk, 27 CCTV cameras, 16 DMSs, 42 trailblazers, 23 locations of Ramp Metering, loops & VIDs, 32000 sq. ft. multi-agency control center, accident investigation sites, etc.

X Construction and CEI for ITS for I-95, Phase-A
17.5 Miles of 96-fiber fiber trunk, 27 CCTV cameras, 16 DMSs,

√**X** Advanced Traffic Information System for M-Dade, Broward and Palm Beach

√**X** ATIS Integrated transit database development & operation For 3 county bus system, Tri-Rail, etc.

√**X** M-Dade County Signal System Upgrade/ ATMS

√**X** Feasibility study for SE Fl. Intelligent Corridor System (Now known as SunGuide Program)

√**X** ATMS for Golden Glades Interchange Federal Demonstration project
Ten DMSs, six CCTV cameras, six VIDs, Magnetic Loops, SS Radio & T-1 lines

√**X** Expansion of GGI CCTV camera system Design-Build: 7 CCCTV cameras and system integration

√**X** Freeway Service patrols (Now known as Road Rangers)

Ron DeSantis, Governor

Halsey Beshears, Secretary

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9/23/2019
Broward County Board of County Commissioners
PNC2119168P1
p. 221

Florida Department of Transportation's
Construction Training Qualification Program

Certification of Qualification

Arvind Kumbhojkar

Has completed the requirements for:

QC Manager

Expiration Date: Does Not Expire*

CTQP
Construction
Training Qualification Program
www.ctqpflorida.com

Melissa Wildermuth
Melisssa Wildermuth
CTQP Program Administrator

*Continued Qualification is subject to FDOT procedure 700-000-01.

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hpconsultantsinc@earthlink.net

John D. Riege, PE, PG

Geotechnical Engineer/Geologist/Well Contractor/Safety Specialist

LICENSURE

- Professional Engineer, State of Florida
- Professional Geologist, State of Florida
- Water well Contractor, State of Florida

CERTIFICATIONS

- OSHA Hazmat Safety training 40 hours, Level B
- OSHA Construction Safety training 10 hours

EDUCATION

▪ University of Miami, RSMS, Florida	M.S., Coastal/Oceans Engineering	1974
▪ U. of Missouri at Rolla, Missouri	B.S., Geological Engineering	1970

EXPERIENCE

Mr. Riege has broad, hands-on experience in geology, civil and geotechnical engineering and well drilling/abandoning for more than 40 years. He is specialized in field work and operations, inspections, field installation quality control, and drilling and construction safety.

He has excellent knowledge of Florida geology. His past work experience includes geological and geotechnical site characterization and assessment, field and construction safety monitoring, drilling safety monitoring, Phase I and phase II environmental studies and audits; design, permitting, construction monitoring and inspection of stormwater systems; design, permitting, construction monitoring and inspection of potable water systems; design, permitting, installation and abandonment of temporary and permanent water and monitoring wells; excavation and foundation inspections, utility clearance, and soil and ground water sampling; project management and field work supervision.

Mr. Riege has been working with HP Consultants Inc. for the last three years wherein he assists Dr. Kumbhojkar in site reconnaissance, geological and geotechnical site characterization, planning and troubleshooting drilling operations, field and construction safety inspections, drilling and well installation safety compliance, permitting, geotechnical plans reviews, review of drilling logs, site supervision, and project management. He has assisted in the following projects:

- Geotechnical Services for WWTP Related to OOL Program (CDM, MDWASD)
- Geotechnical Investigation for 48” water transmission main for Area N (MD-WASD, CDM-Smith)
- Geotechnical Investigation for replacement of water main in Shenandoah area (MD-WASD, EAC)
- Installation of monitoring wells the Snapper Creek Park, Phases I, II and III (M-Dade County PERA, URS)
- Installation and abandonment of monitoring wells at Opa-Locka airport (M-Dade County PERA, URS)
- Soil Sampling at Opa-Locka airport (M-Dade County PERA, URS Corporation)
- Installation of monitoring well clusters in the NW cargo area of Miami Int’l Airport (M-Dade PERA, URS)
- Installation of monitoring wells on NW 20 St, Miami (M-Dade DERM, URS)
- Installation of monitoring wells at Ives Estate park (M-Dade DERM, URS)
- Soil testing for N. Biscayne Bay Wetlands Restoration project (M-Dade County, URS)
- Stockpile/backfill sampling at NW 25th St and NW 67th Ave (M-Dade County, URS)
- Additional monitoring well in Miami Springs for northwest cargo area (M-Dade County)

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STATE OF FLORIDA DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

PE52073 ISSUED: 02/10/2019
PROFESSIONAL ENGINEER
RIEGE, JOHN D.

John D. Riege
Signature

LICENSED UNDER CHAPTER 471, FLORIDA STATUTES
EXPIRATION DATE: FEBRUARY 28, 2021

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL GEOLOGISTS

THE PROFESSIONAL GEOLOGIST HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 492, FLORIDA STATUTES

RIEGE, JOHN D

9280 SW 106 ST
MIAMI FL 331763614

LICENSE NUMBER: PG1101

EXPIRATION DATE: JULY 31, 2020

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

July 23, 2019

John D. Riege, License 1833
Landshark Consulting
9280 SW 106th Street
Miami, FL 33176

Subject: WATER WELL CONTRACTOR LICENSE RENEWAL

Dear John D. Riege:

CONGRATULATIONS, your Water Well Contractor's License has been renewed!

Enclosed, please find your new water well contractor license, which will expire on July 31, 2021.

Please do not hesitate to contact me at wells@sfwmd.gov or (561) 682-6930 if you have any questions.

Sincerely,

Victoria Topper

Victoria Topper
Technical Services Unit
Water Use Bureau

Enclosure

FJ ENGINEERING GROUP

Clifton Chin
CEI Senior Inspector

PPROFESSIONAL PROFLILE

Mr. Chin has more than 33 years of engineering experience on a wide range of construction and engineering projects. He has worked on numerous bridge and roadway reconstruction projects which entailed a wide range of hands-on field experience including bridge foundation, substructure and superstructure. His responsibilities included coordination material delivery, certification and traceable documentation of all precast elements, such as pile foundation certifications, caps and beams. His experience also included inspections on sound/noise wall, retaining wall, jack & bore for large force main pipe, drill shaft, spread footer, box culvert extension and bridge widening. Other work included MOT and all elements of roadway construction.

Years of Experience: 33 years

PROFESSIONAL LICENSES:

Jamaica

EDUCATION:

Indies, 1970

EMPLOYMENT HISTORY:

- March 2012 – Jan 2017:
- June 1999 – Feb 2000:
- 1997– 1999:
- 1970– 1978:
- Drilled Shaft
- Final Estimates Level I
- A.C.I. CTCI
- MOT Advanced

Project Experience

Senior Bridge Inspector, Dec 2018 to present

FIN 41934526201, 43515816201 & 43630216201; CEI services on SR-80 for three widening and improvement projects spanning from west of Lion Country Safari to east of the northbound Turnpike ramps. Sr Inspector overseeing bridge widening at the SR-80 intersection with Lyons Rd/Sansbury's Way. Bridge components consist of 24" pilings, cast-in-place substructure, pre-stressed post-tensioned slab units, 32" traffic railing with bullet rail, approach slabs, and bank & shore rubble riprap. Clifton is also responsible for MOT reviews, monitoring and documentation of regular, sub-soil and canal excavation, drainage installation, sub-grade, embankment and pavement construction, new signal and lighting installation, signing and pavement markings. FDOT Project Oversite I FDOT District 4 Palm Beach Operations: Jessica Lewis Cell: 561-459-0908 Office: 561- 370-1113.

Senior Bridge Inspector, Mar 2017 to Nov 2018

434922-1-52-01, Tamiami Trail Everglades Restoration Bridging Project, Miami-Dade County, Florida. FDOT District Six. Senior Inspector for this $72-million-dollar project that consist of construction of a western 1.43 mile bridge, an eastern 0.88 mile bridge, 0.89 miles of bridge approaches and raising the roadway near Everglades Safari Park (ESP). Work includes restoring water flow by the removal of the roadway north of both bridge openings. He is responsibe for the coordination, tracking, certification and documentation of all pre-cast elements, pile foundation certifications, compliance with Buy America provisions of 23CFR 635.410 for all steel and iron products. Additional Scope of work includes the installation of a total of 558 (24") concrete piles (length from 80' to 135' long, 104 pre-cast bent caps, 420 FIB beams and 102 deck spans, MSE Walls, temporary and permanent retaining walls. FDOT Project Manager: Jacqueline Sequeira, 305-640-7432

Project Engineer, Mar 2012 to Jan 2017

March 2012 – January 2017

Construction Project Engineering / Project Manager for Kier and Vinci Construction Companies (Jamaica) on numerous projects e.g. 60K sq. ft. concrete and steel warehouse structure (Newport West); 100K gallons capacity concrete water tanks at Kellits and Mount Rosser; Multi-storey concrete school building for Ministry of Education. Construction of five (5) reinforced concrete AASHTO bridges across the main Yallahs ford, the Negro fording in St Thomas, also the Rio Grande and Spring Bank River bridges in Portland, and the Tredegar Park Bridge in St Catherine on behalf of the government of Jamaica

Senior Inspector, Mar 2010 to Jan 2012

FJ ENGINEERING GROUP

Clifton Chin
CEI Senior Inspector

SR 805 (US 1/South Dixie Highway) Resurfacing from South of SR 700/80 to Belvedere Road, SR 706 (Indian Town Road) Resurfacing from Chasewood Plaza to SR 811 (Dixie Highway) and SR 809 (Military Trail) Resurfacing from Oxford Street to SR 704 (Okeechobee Boulevard), Palm Beach County, Florida – FDOT District 4: Senior Inspector for this contract which involved resurfacing three portions of roadway. The project limits encompassed approximately 1.154 miles of SR 805 (South Dixie Highway) from south of SR 700/80 to Belvedere Road, 2.330 miles of SR 706 (Indian Town Road) from Chasewood Plaza to SR 811 (Dixie Highway) and 1.737 miles of SR 809 (Military Trail) from Oxford Street to SR 704 (Okeechobee Boulevard). The scope of work included milling, resurfacing, curb, gutter, as well as, signing and pavement markings. Pipe relining was also included on the SR 809 (Military Trail) project. FDOT Project Manager: Rob Cables 561-432-4966

Senior Roadway Inspector, Jun 2008 to Feb 2010
SR 710 (Beeline Highway) Reconstruction from SR 809 (Military Trail) to West of Congress Avenue, Palm Beach, Florida – FDOT District 4: Senior Roadway Inspector for project which involved adding lanes and reconstructing approximately 1.36 miles of roadway. Experience included: monitoring and inspection of the reinforcement of existing bridge in order to accommodate the transportion FPL's super-loads from Port of Palm Beach to their new Power Plant and bridge replacement over SFWMD canal, the construction of a new AASHTO concrete bridge over the canal, jack & bore/micro tunneling for new 36" force main under canal, signalization, drainage, irrigation, and lighting improvements. Responsibilities included collecting, checking, maintaining, and processing project records, as well as, documenting compliance to plans and specifications. FDOT Project Manager: Sid Mailhes 561-531-1057

Senior Roadway Inspector, Nov 2002 to Jun 2008
SR 809 (Military Trail) Widening from SR 704 (Okeechobee Boulevard) to SR 708 (Blue Heron Boulevard), Palm Beach County, Florida – FDOT District 4: Senior Roadway Inspector on two (2) projects which involved widening from four lanes to six lanes, as well as, urban reconstruction. These projects also included: milling, resurfacing, storm drainage, Joint Project Agreement utility work, signalization, landscaping, and construction of sound walls. FDOT Project Manager: J. Beaubrun 561-432-4966

Senior Roadway Inspector, Aug 2001 to Nov 2002
SR 817 (University Drive) Widening from SR 842 (Broward Boulevard) to the C-13 Canal, Plantation, Florida – FDOT District 4: Roadway Inspector for project in Broward County which consisted of widening, milling & resurfacing, extensive drainage, curb and sidewalk, signalization, signing, and other improvements. FDOT Project Manager: E. Jalali 954-958-7642

OTHER EXPERIENCE

February 2000 – July 2001
Expo Contractors, Miami, Florida.
Assistant Design / Construction Engineering and Inspection Manager responsible for engineering design and construction management of commercial buildings.

June 1999 – February 2000
Dynabilt Technology, Inc., Miami, Florida
Project Engineer whose responsibilities included a design contract for Exuma Housing Project (Bahamas) accommodating 200 homes. Also responsible for designing steel trusses for project in Turnberry Isle Resort; Aventura, Florida. Acted in a consulting capacity for on-site construction engineering and inspection.

1978 – 1999
Sunbeam Development Ltd., Kingston, Jamaica
CEO / Owner who furnished engineering design for clients in field of commercial and residential projects. Mr. Chin also maintained a close relationship with client until project was completed.

1970 – 1978
Attas, DeFour, Benghiat, Kingston, Jamaica
Civil / Structural Engineer whose responsibilities included conducting random and scheduled on-site inspections during construction; structural drafting and designing of warehouses and multi-level buildings; participated in design of Kingston Trans-Shipment Port which involved detailed and extensive structural and civil engineering knowledge and capabilities.

This Certifies that
Clifton Chin

Has Completed a Florida Department of Transportation Approved Temporary Traffic Control (TTC) Advanced Course.

Date Expires: 02/10/2021 **Certificate #** 25358
Instructor: Miguel Parlade **FDOT Provider #** 119

Florida International University
Phone: 305-348-4893
10555 W. Flagler St. EC2430
Miami,
mot.fiu.edu
nmas@fiu.edu

FIU Engineering & Computing
Division of External Programs

Certificate of Completion

Clifton Chin

Has Completed a Florida Department of Transportation Approved Temporary Traffic Control (TTC) Advanced Course.

02/10/2021	119	Miguel Parlade	25358
Date Expires	FDOT Provider #	Instructor	Certificate #

FIU Engineering & Computing
Division of External Programs

Florida International University
10555 W. Flagler St. EC2430
Miami,
mot.fiu.edu
nmas@fiu.edu

FDOT

For more information about Temporary Traffic Control (TTC) or to verify this certificate

www.motadmin.com

Traffic Signal Program

Clifton Chin

is hereby certified as a

Traffic Signal Inspector

on 5/17/2018

Valid Thru 5/17/2021

Douglas M. Aiken - Executive Director

Traffic Signal Program
Clifton Chin
Is Hereby Certified as a
Traffic Signal Inspector
By completing all requirements and examination.

Cert #	Date	Good Thru
SI_122536	5/17/2018	5/17/2021

Technician CTQP Qualification Report

Date Ran: 9/6/2019 1:32:12 PM

Technician Name: Clifton Chin

Qualification Area	Qualification Status Code	Qualification Date	Expiration Date
99997 - FINAL ESTIMATES LEVEL 1			
	SUPERSEDED	6/29/2005	6/29/2010
	VALID	5/28/2010	5/28/2015
	VALID	1/31/2017	1/31/2022
QCASBI01 - QUALIFIED GROUTING TECHNICIAN - LEVEL 1			
	VALID	4/8/2019	4/8/2024
QQ060101 - ASPHALT PAVING TECHNICIAN - LEVEL 1			
	SUPERSEDED	12/11/2001	12/11/2006
	VALID	11/7/2007	11/7/2012
	VALID	4/25/2017	4/25/2022
QQ060104 - ASPHALT PAVING LEVEL 2			
	SUPERSEDED	5/8/2002	5/8/2007
	VALID	11/7/2007	11/7/2012
	VALID	6/1/2018	6/1/2023
QQ060204 - CONCRETE FIELD TECHNICIAN - LEVEL 1			
	SUPERSEDED	1/26/2002	1/26/2007
	VALID	6/20/2007	4/21/2012
	VALID	1/21/2017	1/21/2022
QQ060210 - CONCRETE FIELD TECHNICIAN - LEVEL 2			
	VALID	1/21/2017	1/21/2022
QQ060301 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 1			
	SUPERSEDED	7/31/2002	7/31/2007
	VALID	7/27/2007	7/27/2012
	VALID	3/24/2017	3/24/2022
QQ060304 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 2			
	SUPERSEDED	10/31/2003	10/31/2008
	VALID	3/6/2009	3/6/2014
	VALID	3/14/2017	3/14/2022
QQ060305 - PILE DRIVING INSPECTION			
	VALID	10/31/2003	10/31/2008
QQXX8888 - DRILLED SHAFT INSPECTION			
	SUPERSEDED	6/13/2006	6/13/2011
	VALID	7/9/2011	7/9/2016
	VALID	4/14/2018	4/14/2023
QQXX9998 - QUALIFIED POST-TENSIONING TECHNICIAN - LEVEL 1			
	VALID	10/26/2018	10/26/2022

Qualification Area	Qualification Status Code	Qualification Date	Expiration Date
QQXX9999 - PILE DRIVING INSPECTION			
	SUPERSEDED	5/16/2009	5/16/2014
	VALID	1/26/2017	1/26/2022

Exam Name	Course Name	Exam Date	Score	Exam Result
3 Months Experience Asphalt Paving Operations or Asphalt Roadway Testing			100	Met
30 Days Experience on a construction project involving earthwork operations			100	Met
ACI Concrete Field Testing Technician Grade 1 Certification			100	Met
ACI Concrete Transportation Construction Inspector Certification			100	Met
Asphalt Paving - Level 1 Proficiency Exam	Asphalt Paving - Level 1	12/11/2001	100	Pass
Asphalt Paving - Level 1 Proficiency Exam	Asphalt Paving - Level 1	12/15/2006	100	Pass
Asphalt Paving - Level 1 Proficiency Exam - Rel.7	Asphalt Paving - Level 1	04/25/2017	100	Pass
Asphalt Paving - Level 1 Written Exam - Rel.2	Asphalt Paving - Level 1	12/11/2001	90	Pass
Asphalt Paving - Level 1 Written Exam - Rel.4	Asphalt Paving - Level 1	12/15/2006	88	Pass
Asphalt Paving - Level 1 Written Exam - Rel.7	Asphalt Paving - Level 1	02/22/2017	91	Pass
Asphalt Paving - Level 2 Written Exam - Rel. 10	Asphalt Paving - Level 2	06/01/2018	78	Pass
Asphalt Paving - Level 2 Written Exam - Rel. 5	Asphalt Paving - Level 2	11/07/2007	90	Pass
Asphalt Paving - Level 2 Written Exam - Rel.2	Asphalt Paving - Level 2	05/08/2002	82	Pass
Asphalt Refresher Written Exam	Asphalt Refresher	10/02/2002	80	Pass
Drilled Shaft Inspection Proficiency Exam - Rel.4	Drilled Shaft Inspection	07/09/2011	100	Pass
Drilled Shaft Inspection Proficiency Exam - Rel.7	Drilled Shaft Inspection	04/14/2018	100	Pass
Drilled Shaft Inspection Written Exam	Drilled Shaft Inspection	03/17/2005	43	Fail
Drilled Shaft Inspection Written Exam - Rel.2	Drilled Shaft Inspection	06/13/2006	93	Pass
Drilled Shaft Inspection Written Exam - Rel.4	Pile Driving Inspection 1	07/09/2011	80	Pass
Drilled Shaft Inspection Written Exam - Rel.7	Drilled Shaft Inspection	02/10/2018	94	Pass
Earthwork Construction Inspection - Level 1 Proficiency Exam	Earthwork Construction Inspection - Level 1	07/31/2002	100	Pass
Earthwork Construction Inspection - Level 1 Proficiency Exam - Rel. 3	Earthwork Construction Inspection - Level 1	03/24/2017	100	Pass
Earthwork Construction Inspection - Level 1 Written Exam	Earthwork Construction Inspection - Level 1	07/31/2002	86	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 2	Earthwork Construction Inspection - Level 1	07/27/2007	96	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	02/28/2017	94	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 2	Earthwork Construction Inspection - Level 2	10/31/2003	92	Pass

Earthwork Construction Inspection - Level 2 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 2	03/06/2009	94	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 6	Earthwork Construction Inspection - Level 2	03/14/2017	96	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.3	FDOT Concrete Field Inspector Spec	06/20/2007	84	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.4	FDOT Concrete Field Inspector Spec	02/15/2017	90	Pass
FDOT Concrete Specification Section 346 Written Exam - Rel.2	FDOT Concrete Specification Section 346	10/30/2001	70	Pass
Final Estimates - Level 1 Written Exam	Final Estimates - Level 1	05/28/2010	96	Pass
Final Estimates - Level 1 Written Exam - Rel.5	Final Estimates - Level 1	01/31/2017	94	Pass
Grouting Certification - Level 1			100	Met
Monitored 10 Shafts, at least 5 Shafts constructed with wet method			100	Met
Monitored 15 Driven Piles, at least 10 Piles driven with Open Diesel Hammers			100	Met
Nuclear Safety Certification			100	Met
Pile Driving Inspection Proficiency Exam - Rel.2	Pile Driving Inspection 1	05/16/2009	100	Pass
Pile Driving Inspection Written Exam - Rel.4	Pile Driving Inspection 1	05/16/2009	92	Pass
Pile Driving Inspection Written Exam - Rel.8	Pile Driving Inspection 1	01/26/2017	98	Pass
Post-Tensioning Institute Certificate Level 1			100	Met

FLORIDA ENGINEERING & TESTING, INC.

Phone: (866) 781-6889 •Fax: (866) 784-8550
www.floridaengineeringandtesting.com
250 S.W. 13th Avenue
Pompano Beach, FL 33069

Mark A. Mesiano, P.E.
Principle Engineer

Mr. Mesiano has over 25 years of experience in the construction industry. He has extensive experience in program management in all phases of construction. His expertise includes Quality Assurance/Quality Control Manager and Threshold Inspector services for airports, highways, sports stadiums/arenas, power plants.

Education:

B.S. Civil Engineering, University of South Florida, 1990

Professional Registration:

Professional Engineer, Florida Registration No. 48202

Professional Engineer, Colorado, Registration No. 31593 (inactive)

Technical Certifications:

- Florida DOT Pre-stressed Concrete Inspector
- Radiation Safety Officer and Instructor, PSI, Inc.
- Structural Masonry Inspector, FL Concrete & Products Association (expired)
- Nuclear Gauge Training and Safety, Earthworks Instrumentation, Inc.
- Concrete Field Testing Technician - Level I, American Concrete Institute (expired)
- Certified Engineering Technician - Level II Soil, Concrete, Asphalt Testing, National Institute for Certification in Engineering Technologies (NICET) (inactive)

Select Projects:

- E470 Highway project in Colorado - Resident Project Manager\PE for all QC testing of Soils, Concrete & Asphalt for Segments I, II, and III (29 miles of 4 lane toll highway, with 30 bridge structures). Responsibilities included overall management for all field, laboratory, & administrative operations including managing field\laboratory technicians from a minority partner. Note: Project required a **fully equipped on-site laboratory** with Soils, Concrete & Asphalt testing capabilities (project utilized Superpave asphalt pavement mixes and an on-site laboratory equipped with gyratory compactor & nuclear ovens for asphalt content). The project won the following awards:
  - 1998 & 1999 National Asphalt Pavement Association – Quality in Construction Award for Segments II and III
  - 1998 Colorado Asphalt Pavement Association - Best in Colorado 120th Avenue to Parker Road (Segments I, II, and III)
  - 1999 American Concrete Pavement Association - Segments II and III Concrete Paving
- Tampa International Airport South Parking Garage - Project Manager for all materials testing for the new 6 level parking garage structure with 11 acre footprint, totaling approximately 66 acres of concrete parking deck. Responsible for supervising several resident full-time technicians and laboratory testing of soils and concrete.
- Tampa International Airport – Resident Inspector responsible for inspections and testing of Airside “F” Terminal Building, Airside “F” ATS, and Airside “F” Loading Bridge Caissons.
- Ft. Lauderdale Executive Airport: Taxiway "Alpha" Relocation – Project Manager for soil and concrete testing services.
- Miami International Airport Mover APM System – Concrete Testing Services.
- Palm Beach International Airport: Galaxy Hangar “H” – Project Engineer responsible for supervising resident building inspector and testing technicians.
- St. Lucie Airport Fire Station – Project Manager for soil & concrete testing.
- Jacksonville International Airport – Project Manager for soil & concrete testing (with onsite laboratory) at Taxiway Relocations for Concourse "C".
- Quality Control Manager: Experienced in revising and updating Quality Control Manuals and the set-up and accreditation of multiple laboratories for AASHTO\FDOT\USACOE\CMEC accreditations including initial and recertification inspections.

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www.floridaengineeringandtesting.com
250 S.W. 13th Avenue
Pompano Beach, FL 33069

PAUL M. TENINTY
CMT Field & Laboratory Supervisor

Mr. Teninty has over 20 years of construction materials testing, inspection and construction related experience. He is highly skilled in supervising all work, paperwork, equipment, etc. for field & laboratory technicians in regards to construction materials testing, laboratory testing, and inspection/monitoring projects. His expertise includes performing testing and laboratory work as needed, including compaction testing, various types of concrete testing, structural masonry inspections, auger cast piling inspections, vibrofloatation inspections, demucking inspections, earthwork monitoring, roof uplift testing, field withdrawal resistance testing, and various types of soil\concrete laboratory testing including grain size analysis, moisture density (proctor) tests, limerock bearing ratio (LBR) tests.

Professional Certifications:

- CTQP Earthwork Constr. Inspection – Level 1
- CTQP Concrete Field Technician – Level 1
- CTQP Qualified Sampler Technician
- CTQP Aggregate Base Testing Technician
- CTQP Concrete Lab Technician – Level 1
- CTQP LBR Technician
- ACI Aggregate Testing Technician – Level 1
- ACI Aggregate Base Testing Technician
- ACI Concrete Laboratory Testing Technician- Level 1
- ACI Concrete Strength Testing Technician
- ACI Concrete Field Testing Technician – Grade I
- Florida Structural Masonry Inspector
- Georgia Structural Masonry Inspector
- Georgia Erosion Control Inspector Level I B
- 40 Hour OSHA
- Nuclear Gauge Training
- Radiation Safety
- Nuclear Gauge Operation
- Nuclear Gauge Transport

Select Projects:

- Ft. Lauderdale International Airport Parking Garage – Piling Inspector for Driven/Auger-Cast/Drilled Shaft
- Broward Regional Park, Lauderhill, Florida – Soil Testing Technician, density testing for large park with amphitheater, playing fields, etc.
- Silver Falls at Miramar, Florida – Earthwork Inspector (full time) for 275 acres of site development
- Botanica, Jupiter, Florida – Resident Earthwork Inspector for 300-400 acres of site development
- Home Depot, various locations – Project Manager for testing and inspections
- Belk Department Store, various locations – Project Manager for testing and inspections
- CVS Pharmacy, various locations – Project Manager for testing and inspections

RANDELL J. CLARK, IMSA
Senior ATMS Specialist

Albeck Gerken, Inc.
an iteris company

EDUCATION
Computer Technologies, Erwin Vocational School, Tampa, Fl. 1988

YEARS OF EXPERIENCE
With Albeck Gerken: 9 Total: **39**

CERTIFICATIONS
International Municipal Signal Association (IMSA)
Traffic Signal Senior Field Technician Level III, #CE13372, 2017
Traffic Signal Bench Technician Level II, #BB20088, 2010
Traffic Signal Inspector II (Florida) #TI_13372, 2018

Florida Department of Transportation (FDOT)
Intermediate Maintenance of Traffic (IMOT), #CE19310, 2016

CORE DISCIPLINES
Traffic Systems Management & Operations

Signal Synchronization

Advanced Traffic Management Systems

AFFILIATIONS
International Municipal Signal Association (IMSA)

Mr. Clark serves as a Senior ATMS Specialist for the Transportation Systems division of Albeck Gerken, an Iteris Company, and has been with the firm since September 2010. He has over 39 years of experience working in the field. Randy specializes in ATMS operations, database conversions, cabinet level operation, responding to citizen complaints, and implementation projects. His duties consist of providing transportation system management and operations support to public sector clients.

Project Experience

TRAFFIC SYSTEMS MANAGEMENT & OPERATIONS

- Currently performing cabinet level investigation, interrogation, conversion, and programming for Hillsborough County and Sarasota County signalization upgrade projects. Responsibilities include full intersection inspections; database conversion programming; preparation of cabinet operation and wiring CADD file; inspection of cabinet and controller assembly after receipt from Trafficware; and initial operational inspection once installed by contractor.
- Performing daily critical alarm investigation and prioritization for Hillsborough County and City of Melbourne ATMS.now central software platform. All critical alarms are then addressed by maintaining agency.
- Programming, database management, and maintenance of Hillsborough County RTC school beacon system. Developing and editing schedules for over 420 roadside and overhead school beacons. Respond to citizen and school official concerns regarding the operation of the flasher devices.
- Assisted in the development of an Uninterruptable Power Supply (UPS) maintenance and network integration program for Hillsborough County. Maintenance has been performed on 144 UPS systems 80 of which are now communicating with the central system. Designed and install UPS alarm circuitry to interact with the ATMS .now signal system.
- Performing the database conversions required to facilitate the UTCS to ATMS.now signal system upgrade program in Broward County, over 500 completed to date.
- Developed, programmed and implemented database upgrades to run Transit System Priority (TSP) in a Hillsborough Area Rapid Transit pilot program.
- Developed, programmed and implemented controller databases to support flashing yellow arrow left turn and flashing yellow arrow right turn movements at existing intersections in FDOT District 7.
- Owner and President of general contracting firm with an emphasis on traffic signal and street light construction. Duties included project bidding, developing material submittal lists, and purchasing of materials and equipment.
- Designed and built Hernando County Traffic Management Center. Maintained the County's traffic signal communication to 96 intersections and 4 video cameras. Assisted in designing and mapping Hernando County's fiber optic system, and developed fiber optic color code charts.
- Installed complete traffic signal system components including poles (mast arm, concrete, wood, steel strain poles), conduit, cabinet and controller assemblies, vehicle and pedestrian detection, roadside and overhead signs, and various data collection systems.

Randell J. Clark

is hereby certified as a

Traffic Signal Senior Field Tech Level III

by completing all requirements and examiniation for certification

Valid 6/30/2017 - 6/30/2020

Certification #CE_13372

Toby Cummings - Executive Director

Randell J. Clark

is hereby certified as a

Traffic Signal Inspector Level II

by completing all requirements and examiniation for certification

Valid 12/11/2018 - 12/11/2021

Certification #TI_13372

Toby Cummings - Executive Director

JOE MOLINARO, PE, PTOE, IMSA
ATMS Manager

Albeck Gerken, Inc.
an iteris company

EDUCATION
BS, Civil Engineering, Worcester Polytechnic Institute, MA, 1994

BA, Pre-Engineering, Stonehill College, MA, 1992

YEARS OF EXPERIENCE
With Albeck Gerken: **8** Total: **25**

REGISTRATIONS & CERTIFICATIONS
Civil Engineer (PE)
FL #58267, 2002
MA #41553, 2000

Profession Traffic Operations Engineer (PTOE)
FL #1955, 2006

International Municipal Signal Association (IMSA)
Traffic Signal Field Technician Level III, #42088, 2005

Traffic Signal Inspector, FL, #42088, 2005

Florida Depart. of Trans. (FDOT)
Intermediate Workzone, 47610, 2011

CORE DISCIPLINES
Traffic Systems Management & Operations

Signal Synchronization

Advanced Traffic Management Systems

AFFILIATIONS
Institute of Transportation Engineers (ITE), Member

International Municipal Signal Association (IMSA), Florida Delegate

Mr. Molinaro serves as an ATMS Manager for the Transportation Systems division of Albeck Gerken, an Iteris Company, and has been with the firm since 2011. He has over 25 years of experience working in the fields of ATMS operations and Arterial Program Management, and manages a team of engineers and technicians that provide transportation system management and operations support to public sector clients. Mr. Molinaro also has extensive experience in traffic signal system hardware and software installation and operation. He has worked with various traffic signal controller platforms and manufacturers' hardware and software, including NEMA TS 1, NEMA TS 2 (Type 1 and Type 2), 170, 2070, and ATC; and has worked with various system architectures including both distributed closed loop and centralized.

Project Experience

TRAFFIC SYSTEMS MANAGEMENT & OPERATIONS

- Mr. Molinaro served as the ATMS Manager on this Signal Timing Update Program for Hillsborough County. He was responsible for the daily monitoring of the Hillsborough County ATMS.now central system software via remote connection, monitoring and reporting the daily critical alarms from the field controllers to Hillsborough County Traffic Operations, and responsible for the database management and grooming of Hillsborough County ATMS.now system. The project is ongoing.
- Mr. Molinaro served as the ATMS Manager for multiple Diversion and Evacuation Route projects for Manatee County and Sarasota County. He was responsible for the implementation and testing of timing plans developed. The project began in January 2017 and was completed in December 2018.
- Mr. Molinaro was responsible for the team management performing the database conversions and deployment through Broward County's Trafficware ATMS.now central system software. This included the translation of Urban Traffic Control System (UTCS) signal timings to be programmed in the local traffic signal controllers. The Albeck Gerken team performed and successfully deployed database conversions for over 1000 intersections within the County. The project began in January 2012 and was completed in .July 2015.
- Mr. Molinaro was responsible for the development of controller databases and cabinet configuration drawings for various agencies as part of Controller Cabinet Upgrade projects. Performed various aspects of services for City of Melbourne, City of Tampa, Hillsborough County, and Sarasota County.

JOE MOLINARO, PE, PTOE, IMSA
ATMS Manager

Albeck Gerken, Inc.
an iteris company

ADVANCED TRAFFIC MANAGEMENT SYSTEMS

- Mr. Molinaro assisting the City of Tampa perform controller database conversions for the Tampa Hillsborough Expressway Authority's Connected Vehicle USDOT Pilot. Specifically, Mr. Molinaro managed and was responsible for the conversion of 28 traffic signal controller database conversion from legacy NEMA TS 2 controllers to Econolite Cobalt NEMA ATC controllers. The project began in May 2017 and was completed in December 2017.
- Mr. Molinaro served as Project Manager on this I-75 Florida's Regional Advanced Mobility Elements (FRAME) project for FDOT District 5. He was responsible for field reviews and inventory of the existing traffic cabinets and controllers for approximately 60 project locations. Albeck Gerken, Inc. had a supporting role in the project design and specifications to ensure that any new equipment was capable of supporting CV applications, in particular, the dissemination of Signal Phasing and Timing (SPaT) information. Additionally, Mr. Molinaro completed the documentation of existing detection infrastructure to support the collection of Hi-Resolution Data for the purpose of Automated Traffic Signal Performance Metrics. The project began in September 2017 and is ongoing.

SIGNAL SYNCHRONIZATION

- Mr. Molinaro developed the timings and controller parameters for Standard Operating Procedures (SOP) for implementation of Flashing Yellow Arrow (FYA) in Hillsborough County. The project began in August 2009 and is ongoing.

Joseph G. Molinaro, III, P. E., PTOE

is hereby certified as a

Traffic Signal Senior Field Tech Level III

by completing all requirements and examiniation for certification

Valid 9/17/2018 - 9/17/2021

Certification #CE_42088

Toby Cummings - Executive Director

Joseph G. Molinaro, III, P. E., PTOE

is hereby certified as a

Traffic Signal Inspector

by completing all requirements and examiniation for certification

Valid 9/17/2018 - 9/17/2021

Certification #SI_42088

Toby Cummings - Executive Director

WGI

ITS Master Planning, ITS Implementation

Glenn Havinoviski, PE

Glenn is an international expert in Intelligent Transportation Systems (ITS), who has served as a practice builder, practice leader, and office principal, providing project management and technical leadership for transportation technology and operations projects in the U.S. and abroad. His expertise is rooted in transportation systems management and operations activities, utilizing the systems engineering process to identify useful mobility solutions, including applications involving Connected and Automated Vehicles (CAV), integrated corridor management (ICM), interactive traveler information and mobility services, adaptive signal control, bus rapid transit and related traffic signal priority operations activities. He has worked with a wide variety of project participants, including Federal, state and local agencies including toll and transit authorities. Glenn is particularly known for being sensitive to various enforcement, multi-modal, and local operational issues. Additionally, he has provided instruction in training workshops for the International Road Federation (IRF) as well as the National Highway Institute (NHI). Glenn has served as a member of TRB's Standing Committee on Congestion Pricing since 2014.

Registrations:
Professional Engineer:
Florida #78162, 2014
Virginia #0402045592, 2008

Education:
Bachelor of Science, Civil Engineering - University of Wisconsin, 1984

Affiliations:
Institute of Transportation Engineers

Intelligent Transportation Society of Virginia, President, (2006-2007)

International Road Federation, Technical Track Chair for Integrated Mobility (2013)

Transportation Research Board, TRB Congestion Pricing Committee AHB35 (2014-current)

Total Years of Experience:
35

RELEVANT EXPERIENCE

Lake Worth Beach Mobility Roadmapping Workshop. Lake Worth Beach enlisted WGI to convene mobility stakeholders to study trending and emerging technologies and their potential impacts on transportation, land use and economic development. The anticipatory planning session also provided ideas for developing a Mobility Plan and using new mobility as an economic catalyst. Mr. Havinoviski's role focused on addressing connected and automated vehicle requirements and implications of providing wireless communications capabilities in the central area of the City.

Central Avenue Bus Rapid Transit Preliminary Engineering – Pinellas County, FL. Led development of Concept of Operations for transit signal priority, drawbridge operations and traveler information/fare payment application associated with 15-mile BRT corridor utilizing a mix of exclusive lane and mixed-flow operations for dedicated BRT vehicles in a high-volume transit corridor. Involves coordination between Pinellas County Transit Authority, Pinellas County Public Works and City of St. Petersburg for signal system coordination and with Florida DOT to address BRT operations on Corey Causeway.

Louisiana DOTD Connected and Autonomous Vehicle (CAV) Technical Team Support, Baton Rouge, LA, Task Lead. Task lead for advisory services to a Louisiana DOTD technical committee overseeing the direction and definition of future CAV deployment activities, helping DOTD to identify future direction and requirements for development of a CAV strategic plan. Quarterly workshops provide an overview of current CAV initiatives, with breakout groups addressing particular stakeholder needs and potential early deployment opportunities for CAV projects in Louisiana.

NCHRP 20-102 (07), Implications of Automation for Motor Vehicle Codes, Transportation Research Board, Washington, DC, Technical Expert. Prepared assessment addressing the impacts of automated vehicles on traffic control devices, design standards and related regulations and codes throughout the U.S. as part of a broader effort led by Virginia Tech Transportation Institute to assess the legal and regulatory impacts of connected and automated vehicle deployment. Co-author of resulting document, NCHRP Web-Only Document 253: Implications of Connected and Automated Driving Systems, which in August 2019 received *TRB's John C. Vance Award*.

Healthline BRT (formerly Euclid Corridor Transportation Project), Cleveland, Ohio. Project Manager for traffic management system design, transit priority operations strategies, ridership forecasts, operational plans and bus specifications for corridor operations. Project included preliminary design documentation for the traffic control systems including functional and performance requirements. This project involved a dedicated median busway through five miles of downtown and midtown Cleveland. *Project received the 2010 ACEC of Ohio Grand Award.*

OFFICE LOCATION: VIRGINIA

St. Louis Regional ITS Architecture Update and Strategic Plan. For East-West Gateway Council of Governments, managed development of revised regional ITS architecture and 5-year strategic plan incorporating ITS enhancements for the Missouri and Illinois DOT's, Metro Transit, and city and county jurisdictions. Operational concept focused on regional information sharing and integrated traveler information, along with Integrated Corridor Management for several freeway and light rail corridors. Three tiers of projects were defined and initial scope and budget information developed

Integrated Travel Information and Navigation Services System, Abu Dhabi, UAE. Project Manager for development of traveler information system providing real-time information and services using mobile and web applications based on existing DoT "Darb" platform and GIS services, along with data archiving and in-house information displays. Deployed in March 2014, system utilizes existing Bluetooth travel time sensors, count detection and taxi probe data, provides data fusion to derive real-time traffic flow information, and provides "fastest route" information for mobile and web users. Platform receives real-time information on bus arrival times for each stop, enables customers to book a taxi and track its location, and enables payment for on-street and surface parking within Abu Dhabi island. Business plan included interfacing with private sector partners to provide real-time traffic and incident data on in-vehicle applications. Project included 2-year operations and maintenance period. *Project won the UAE Government's 2015 m-Government Service Award, named one of the top 40 mobile applications in the world in 2017 at the World Summit Awards.*

Arlington County Traffic Signal Priority System Design, Arlington, Virginia. Responsible Officer for design and integration of transit priority functions with adaptive traffic control system (SCOOT). Included design and testing of priority system application along Columbia Pike.

Long Beach – Los Angeles Light Rail (now Metro Blue Line), California. Mr. Havinoviski was responsible for selection of detection technology, testing of detection systems, and detector design modifications, and assisted in testing of signal system operations in advance of Blue Line operations. Included both on-street running in downtown Los Angeles and downtown Long Beach as well as signal pre-emption along railroad right-of-way in Los Angeles County and the City of Compton.

Active Transportation and Demand Management Foundational Research, USDOT, Washington, DC. Task Manager for FHWA systems engineering assessment and research effort to address integration of active traffic management and travel demand management techniques to improve mobility choices, reduce congestion and enhance travel safety. Efforts included development of a baseline Operational Concept for integrated ATDM activities.

Virginia DOT ITS On-Call Services – Richmond, VA. Consultant Contract Manager (CCM) for on-call ITS services to VDO. Previously served as manager for several key on-call tasks before assuming leadership of the latest iteration of the on-call contract. Responsible for coordinating development of work scopes, contractual documents, and staffing. Task orders included development of a statewide data portal supporting collection of Connected Vehicle data, training for use of Unmanned Aerial Vehicles (UAVs) for road incident investigation, software upgrades to 511 system, updates to ITS statewide and regional architectures and training activities, performance measurement and target-setting, coordination between toll and express lane operators in Northern Virginia, and updates of ITS communications and networks in various regions. (2016-2019)

Interconnect Expansion Project, Syracuse, New York. Assistant PM and Responsible Engineer for expansion of traffic signal system from 143 to 179 intersections. Included 44,000 feet of new fiber optics, reconfiguration of existing fibers, design and installation of new conduit, overhead pole messenger cable installations, new Ethernet switches at the central traffic operations center, at controllers and at intermediate locations, and wireless radio connectivity for additional signals outside the fiber network. Existing signal equipment was updated at the 36 intersections added to the system, along with installation of system count stations, replacement of five existing CCTV cameras and installation of 6 new cameras.

San Jose Motorist Information System, California. Designed and implemented CCTV, CMS, HAR, fiber optic communications, monitoring of parking lot status at San Jose Arena, and operation of existing signal system through new integrated workstation. Performed complete conceptual and preliminary design, led preparation of detailed PS&E documents.

Anaheim Advanced Traffic Control Systems Field Operational Test, California. Developed design and procurement documents for integration of SCOOT adaptive traffic control system with an existing Urban Traffic Control System (UTCS). Design permitted signal controllers to transition between UTCS and SCOOT. System exported one-second status and flow data for either SCOOT or UTCS to real-time UTCS graphics displays.

WGI

Lisa Nisenson

Lisa is a respected urban designer known for combining timeless community design and innovation, with focus on fast-tracking advanced planning techniques and emerging technologies. Her urban design experience includes transit-oriented development, green infrastructure and energy-efficient land use. She has been a new mobility and smart city consultant, researcher on smart mobility, and urban planning start-up founder (GreaterPlaces).

Currently she is participating in national efforts to develop next generation planning tools to incorporate uncertainty and trends into plans and policies. Her specialty is designing processes to create custom roadmaps, policy updates, and strategic plans.

Experience

WGI, Vice President for New Mobility & Connected Communities (Feb 2019-present)

Alta Planning + Design, Consultant & Lead for New Mobility (Jan 2017-Jan 2019)

Nisenson Consulting, CEO (Mar 2006-Mar 2019

Sarasota County, Greenhouse Gas Reduction Coordinator (Feb 2008 - Dec 2011)

USEPA, Policy Analyst (Mar 1999 – Feb 2006)

Lake Worth Beach Mobility Roadmapping Workshop. Lake Worth Beach enlisted WGI to convene mobility stakeholders to study trending and emerging technologies and their potential impacts on transportation, land use and economic development. The anticipatory planning session also provided ideas for developing a Mobility Plan and using new mobility as an economic catalyst.

TCRP J-11, Task 27, Low-Speed Automated Vehicles (LSAVs) and Public Transportation, Transit Cooperative Research Program (expected late 2019). The purpose of this research is to create guidance for transit agencies and communities on the development and deployment of LSAV pilots. The guidance and checklists address goal-setting for automated technology, technology and vendor evaluation, operational planning and oversight, technology implementation and deployment, route preparation, and consumer acceptance.

Consortium for Scenario Planning Impactful Projects Program, Cambridge, MA, Lincoln Institute for Land Policy (expected late 2019). The Lincoln Institute for Land Policy's Consortium for Scenario Planning seeks to rapidly scale next generation planning processes to help communities and agencies better incorporate trends and uncertainty into plans, policies, and built projects. Lisa was awarded a grant to develop sample scopes of work for various scenario planning exercises, including exploratory scenario planning workshops, development of technology roadmaps, and combinations of planning techniques for climate action planning.

Autonomous Vehicle Symposium, Report, and APA Knowledgebase, American Planning Association (2018-current). In 2018, APA, along with the National League of Cities, Brookings, Eno, George Mason, and Mobility Lab hosted a research symposium sponsored by the Federal Highway Administration on planning for autonomous vehicles. Lisa served on the design team as a subject matter expert, and co-creator of a workshop designed to identify key considerations for cities with respect to managing impacts of AVs. Products included materials for APA's Autonomous Vehicles Knowledgebase and recommendations regarding land use planning, equity, street design, mobility, and fiscal impacts. In addition, the report lists future research needs and offers policy recommendations. Activities related to symposium activities include a report, forthcoming checklist and review of the recently released Planning Advisory report, <https://www.planning.org/publications/report/9157605/>Planning for Autonomous Mobility PAS Report 592.

Best Case Scenario Planning, American Planning Association Journal Planning, Author. Lisa authored the May 2018 cover story for the American Planning Association's Journal *Planning*, the article explains next generation scenario planning and its implications for how planners can better incorporate change drivers into plans, processes, and policies. The article explains new terms and concepts. The article also looks at combining new planning techniques depending on the needs for a final product or purpose (e.g., a comprehensive plan update or a future-oriented Complete Streets program).

Take AV Shuttles to the Streets, Eno Center for Transportation. In 2017, Eno Center for Transportation convened approximately 100 experts to consider new mobility. This included an afternoon scenario planning workshop, conducted with Mobilitye3, enlisting participant views on necessary steps to launch an autonomous shuttle in Crystal City (now National Landing) within two years. Groups were separated into four groups: Finance and Funding, Law and Policy, Safety and Funding and Planning. Through structured prompts, each

group explored potential benefits and risks related to AV shuttles, levers (e.g., regulations, pricing), research needed, and questions. The results of this project were crowdsourced information for regional and local governments.

Parking Framework and Recommendations for Parkside Place, Seminole County, FL, Palmeira Holdings LLC. Parkside Place is a phased, mixed-use development planned for property in Seminole County adjacent to Sanford, Florida. The developer hired Lisa to develop a parking reduction strategy using site design, smart city technology and new mobility. The approach combined anticipatory planning with the "parking demand ecosystem" to determine strategies and partnerships, including shared-use mobility and planning for autonomous shuttles. The resulting plan eliminated over 9000 excess spaces, recommending strategies for building and district design, smart city technology, new mobility, contingency parking, and transportation demand management. The development order was approved by the Seminole County Commission October 9, 2018 unanimously and includes bonus density.

Bike Share and Micromobility Studies. Serving as lead for new mobility at Alta Planning + Design, Lisa developed new service areas for the award-winning bicycle and pedestrian planning firm's 400 professionals. This included research, client outreach, staff development, and creation of new service areas related to emerging technologies. The firm used her work in a variety of products and services, including station area master plans, Complete Streets 2.0, first/last mile access to transit, bicycle and pedestrian plans and shared-use mobility recommendations. As Dockless mobility grew, she addressed client concerns over safety, parking, and use of public rights-of-way. The tasks involved research into the legal framework for micromobility permits, work from peer cities, a permit guide, and other related best practices.

Planning for AVs and New Mobility Trainings, Virginia Transit Association, Massachusetts Chapter of the Institute for Traffic Engineers, Planetizen, Next Generation Scenario Planning Training: ITE Massachusetts, George Mason University, Virginia Chapter of the American Planning Association. Lisa has developed curricula for workshops and trainings for a range of stakeholders engaged with changing aspects of transportation, infrastructure and economic development. The workshops are purposefully designed to achieve multiple training goals at once, including education (on both subject matter and scenario planning), stakeholder engagement, brainstorming and forecasting. In many cases, the scenario training is conducted around specific planning cases (e.g. transit oriented development, Corridors 2.0, the grocery store of the future). Topics include the status and trends for mobility and smart city technology, legal and policy updates, emerging forecasting and planning processes, integrated transportation and land use planning, and best practices. The results are timely as evidenced by the increase in new mobility elements in solicitations and training materials,

Morgan Hill Station Area Master Plan, Morgan Hill California. In 2017, Morgan Hill asked for recommendations and considerations for New Mobility and the Shared Economy. In working with the client, the team developed 27 recommendations for the following categories: Planning for transportation technology, pedestrian & bicycle technology, vehicle & transit technology, smart infrastructure, parking technology, and planning for e-commerce. The final report included background, trends, terms and recommendations. The New Mobility work was not included in the final Station Area Master Plan but will be used for other transportation plan updates.

Planning for New Mobility, Writing Effective Regulations, Alta Planning + Development. This White Paper was developed in response to client interviews that revealed the need for practical and easy-to-use information on preparing for new mobility. Since most new mobility initiatives begin with a resolution, this guide supplies background information, instructions on developing resolutions and copy-and-paste language. The sample phrases were designed to also apply to comprehensive and other plans.

Riding into the Future Campaign, Sarasota County, FL/Sarasota County Areawide Transit. As part of a grant from the Federal Transit Administration, "Riding into the Future" was a day-long public outreach event to explore transit-oriented development (TOD) surrounding the city's main transit center. Lisa conducted three walk audits, examining the elements of TOD and sparking conversations with participants on "what works" and how the city could improve the urban design and connections in the vicinity of the station. Density in Sarasota is a hot button issue, so walk tours provided the opportunity to examine density's role in TOD and design approaches to mitigate or eliminate negative impacts. The results were used to shape the transit plan.

State of California, Ocean Protection Council, State and Local Policies Encouraging Low Impact Development in California Performed plan and zoning code audits of state policies to support wider implementation for Low Impact Development.

Ventura County, California, Water Resources and Land Use Planning – Developed watershed plans to integrate a new generation of water and stormwater requirements with land use programs and General Plans. This work led to adoption of Redevelopment Project Management Areas by the Regional Water Board.

Education: B.S Biology, Meredith College, 1984; Master of Arts, Education Administration – Harvard University, 1988

WGI

Survey and Mapping

Joe has more than four decades of experience providing surveying and mapping services to meet client quality, cost and schedule requirements. His experience includes control survey mapping, maintenance right-of-way mapping, platting, condominium documents, subdivision design, boundary surveys, GPS, and route surveys. Joe has served on numerous surveying and mapping projects for the Florida Department of Transportation.

Joseph Edgar, PSM

Registrations:
Professional Surveyor/Mapper: Florida #LS4097, 1984

Education:
Associate of Science, Business Administration and Management - Broward Community College, 1994

Total Years of Experience:
43

RELEVANT EXPERIENCE

Miscellaneous Districtwide Right-of-Way Mapping Services, Various Florida Counties, FL, FDOT District 4, Project Manager. Joe was the point of contact and responsible for the final delivery of all surveys under this continuing services contract. This continuing services contract included establishment of historic alignments, control survey mapping, right-of-way maps, maintenance maps, monumentation mapping, legal description preparation, and other tasks as assigned by the Department. Final average grades of 3.4 were achieved for schedule, quality, and management.

Districtwide Surveying and Mapping, FL, FDOT District 1, Project Manager. Joe supervised all field and office activities supporting this project. The services for this contract include miscellaneous engineering design surveys consisting of 2D/3D topographic surveys, channel surveys, GPS control, bench levels, setting aerial targets for low/high altitude aerial mapping, bridge surveys, drainage and pond surveys. Mapping activities included right-of-way mapping, maintenance mapping, right-of-way control surveys, right-of-way staking, and preparation of legal descriptions. Final average grades of 3.5 were achieved for schedule, quality, and management.

Forest Hill Boulevard Right-of-Way Genesis Map, Palm Beach County, FL, FDOT District 4, Project Manager. Joe supervised all field and office activities supporting this project. Following completion of a right-of-way control survey map for this corridor in 2014, WGI was tasked with the execution of this Right-of-Way Genesis Map ahead of design of significant improvements along Forest Hill Boulevard. WGI reviewed title on 159 adjoining private parcels, plotted easements and other potential encumbrances, and updated the right-of-way control survey to a Right-of-Way Genesis Map through the FDOT District 4 right-of-way mapping phase approval process.

CR-510 85th Street from CR-512 to West of 82nd Avenue Survey Services, Indian River County, FL, FDOT District 4, Survey Manager. Joe is the phase manager for ROW mapping. C.R. 510 is classified as an Urban Principal Arterial and is critical in facilitating the west-east movement of traffic in Indian River County as it connects Interstate 95 (I-95) to State Road (S.R.) A1A. The current two-lane state of the roadway will not accommodate future traffic traveling from I-95 to mid-coast Florida beaches and tourist destinations, and WGI's efforts will piggy back on adjacent efforts that will build the required increase in capacity within the corridor. Our services include design surveying, utility locating/utility coordination, and right of way mapping for acquisition.

SR 614 (Indrio Road) from I-95 to SR 607 (Emerson Avenue), St. Lucie County, FL, FDOT District 4, Project Manager, Project Surveyor. Joe was responsible for the final delivery of all surveys. This project is a full design survey for roadway widening and acquisition. Survey services included PNC establishment, right-of-way control survey map, right-of-way map preparation, sketch and legal preparation, full DTM, hydrographic surveys, bridge detail surveys, utility designation and test holes, building ties, and roadway and canal cross sections. Multiple field crews were dispatched to expedite the schedule.

SR 809 (Military Trail) at Community Drive Control Survey and Right-of-Way Map, Palm Beach County, FL, FDOT District 4, Project Manager, Project Surveyor. Joe was responsible for the final delivery of right-of-way maps and legal descriptions. WGI provided a right-of-way control survey and right-of-way maps for acquisition at SR 809 (Military Trail) at Community Drive for the Local Agency Program (LAP) project in Palm Beach County. Field work included location of section corners, block corners, property corners, and baseline reference points to establish the location of historic baseline of survey of SR 809. Mapping activities included title review, plotting of easements and encumbrances, location of topographic improvements near to the proposed right-of-way, sketch to accompany description for 11 acquisition parcels, and final submittal of the right-of-way maps.

SR 80 at Avenue D, St. Lucie County, FL, FDOT District 4, Project Surveyor. Joe was responsible for the final delivery of all surveys. This project supports the rehabilitation of the SR 80/Southern Boulevard Bridge over the C-51 Lateral Canal at D Road in

Palm Beach County. WGI performed a hydrographic survey covering 1,000 feet of the C-51 Canal as well as 500 feet of the lateral canal, provided detail surveys of the existing eight-lane bridge over the lateral canal, detail surveys of the upstream water control structure, and designation/location of subsurface utilities. Full DTM's of the roadway, bridge deck, and canal bottoms were also provided.

SR 615 Design, St. Lucie County, FL, FDOT District 4, Supervisor. Joe was responsible for the final delivery of all surveys. This project included design surveys for capacity improvements on SR 615 from County Road 608 to US 1, a total distance of 1.5 miles. The baseline of survey and right-of-way were retraced, full design topography and DTM were performed, drainage surveys were performed, utilities were designated, and 30 test holes were provided to clear mast arm installations at the US 1 intersection.

I-95 at Gateway, Palm Beach County, FL, FDOT District 4, Project Surveyor. Joe was responsible for the final delivery of all surveys. Survey supporting PD&E and design at this heavily traveled interchange included support for Low-Altitude Mapping Photogrammetry (LAMP) surveys of the I-95 mainline, survey of obscured areas, drainage surveys, utility designating, right-of-way surveys, and retracement of the historic baseline of survey of I-95 and the adjoining surface arterials. PNC control was established throughout the limits to support eventual production of construction plans following the design phase.

I-95 from Commercial Boulevard to North of Cypress Creek Road Design Services, Broward County, FL, FDOT District 4, Project Surveyor. WGI will provide a design survey and right-of-way mapping for FDOT District 4, along 6.5 miles of roadway for improvements to the interchanges at I-95 and SR 870 (Commercial Boulevard), I-95 and Cypress Creek Road, and at I-95 and Andrews Avenue. Off-system roads such as Powerline Road and North Andrews Avenue are also included for improvement to the interchanges. The design survey includes eight bridge scans and four hydrographic surveys along with 31 proposed parcel takings and 40 easements. WGI collected all survey data within the roadway with Terrestrial Mobile LiDAR (TML) as requested by FDOT District 4.

Las Olas Boulevard Design Survey, Broward County, FL, FDOT District 4, Project Surveyor. This project was a complete street assignment in downtown Fort Lauderdale, along a signature portion of Las Olas Boulevard that includes restaurants, mixed-use commercial, hotels, and high-rise residential towers. WGI provided traffic calming, bike lanes, beautification, and intermodal improvements to this one-mile segment of roadway. WGI's geospatial services included terrestrial mobile LiDAR, design surveys, utility locating, drainage surveys, right-of-way retracement, cross sections, and coordination of aerial survey services.

Kings Highway Design Services for Reconstruction (C9X85), St. Lucie County, FL, FDOT District 4, Project Surveyor. The project consists of the reconstruction of Kings Highway/SR 713 from north of I-95 overpass to north of St. Lucie Boulevard in St. Lucie County. The nearly three miles of reconstruction will add capacity and improve access management and safety by expanding the existing two-lane rural highway to a four-lane rural highway, extending north, the typical section recently constructed to the south of the project limits. WGI services include temporary traffic control plans, utility coordination, environmental permitting, design survey, SUE, and right-of-way mapping.

SR 817 University Drive at Nova Drive Post Design, Broward County, FL, FDOT District 4, Project Surveyor. WGI established Primary Network Control and performed placement of aerial targets for photogrammetric survey. Project Network Control sheets (PNC) were prepared in accordance with District standards depicting the results of the control survey. The survey efforts also included establishment of the historical baseline of survey and RW lines within the project corridor. This effort included field reconnaissance and analysis of 8 section corners and existing RW points within 16 blocks. A drainage survey was performed for locating and detailing 32 drainage structures within the project corridor. XYZ data, pipe sizes, type, condition and flow line data was acquired for each structure. Topographic/3D (DTM) data was acquired at 2 intersections and along the east side of SR 817 to assist the designers. All work was performed in accordance with criteria established by the Department's Highway Field Specifications, D.O.T. Survey Handbook, District IV Survey Guidelines, CADD Production Criteria Handbook and complies with the minimum technical standards for land surveyors rule 5J-17 F.A.C., Florida Statute 472.027.

Turnpike Fort Pierce PD&E from SR 91 to SR 70, Palm Beach/Martin/St. Lucie Counties, FL, Florida's Turnpike Enterprise, Project Manager, Project Surveyor. Joe was the senior project surveyor and mapper. This PD&E project evaluated the widening of Florida's Turnpike from the Jupiter Interchange in Palm Beach County to the SR 70 Interchange in Fort Pierce. Five new interchanges were evaluated, along with express lane alternatives, side street improvements, and environmental impacts to the Loxahatchee River National Scenic Waterway. WGI's services include surveying, mapping, utility locating, utility coordination, and Florida Gas Transmission Company specific coordination regarding FGT's 18-inch, 24-inch, and 30-inch parallel facilities within the corridor.

WGI

Survey & Mapping

Samuel Hall, PSM

Sam is a vice president and WGI's Geospatial Division Manager. With two decades of experience, he is proficient in ArcGIS version 10, as well as a variety of CADD systems software, providing an in-depth understanding of the field data acquisition process on large-scale GIS data collection projects. He maintains a comprehensive understanding of GPS satellite surveying systems and large-scale conformal mapping methodology. He has distinguished himself with his ability to pair technological resources and GIS expertise with surveying techniques to meet project objectives.

RELEVANT EXPERIENCE

Districtwide Continuing Services for Surveying, Mapping, and SUE, Various Florida Counties, FL, FDOT District 4, Project Manager. Sam supervised all survey, mapping, and SUE services. This five-year, $5M continuing contract supports FDOT's in-house and consultant work program with districtwide surveying, mapping, and utility locating assignments. Services are provided on an on-call basis, and include baseline and right-of-way surveys, terrestrial and terrestrial mobile LiDAR, conventional surveys for design, single and multi-beam hydrographic surveys, drainage surveys, cross sections, and bridge detail surveys. Right-of-way mapping assignments include right-of-way control survey mapping, right-of-way map preparation, Genesis mapping, sketches to accompany legal descriptions, and appraisal sketches. Utility locating assignments include ASCE 38-02 quality level B (utility designating) and quality level A (utility test holes), records research, overhead utility scans, and coordination with utility agency owners.

I-95 Widening from SR 70 to SR 614 Design-Build, St. Lucie County, FL, FDOT District 4, Project Surveyor. This $80M design-build project consisted of widening approximately nine miles of major highway from four lanes to eight lanes, from SR 70 (Okeechobee Road) to SR 614 (Indrio Road) in St. Lucie County. Also included in this project are two bridge replacements and six bridge widenings, as well as reconstruction of the interchanges and mainline at SR 70 and SR 68. Survey services included control surveys for roadway and bridge construction, construction layout and as-built surveys for improvements including roadway, ramps, drainage, utilities, and site lighting.

I-75 Express Lanes from South of Sheridan Street to North of Griffin Road (Segment D) Design-Build, Broward County, FL, FDOT District 4, Project Surveyor. The I-75 Express Lanes Segment "D" improvements included design and construction of new express lanes within the existing 166-foot wide median consisting of barrier wall separated, four-lane tolled roadway. The project also included the reconstruction of the Sheridan Street interchange. Additional improvements included a new I-75 express lanes bridge over the C-11 Canal, widening and lengthening of the existing Sheridan Street overpass bridge, and milling and resurfacing of the I-75 general purpose lanes. Services included roadway and drainage design, traffic control, environmental permitting, survey, landscape architecture, miscellaneous structures, and public involvement. WGI's survey services included providing construction layout and as-builts for roadway, drainage structures, ponds, swales, lighting, signage, signalization, traffic control, striping, bridges, barrier walls, guardrail, and other miscellaneous items.

I-75 Express Lanes from 170th Street to South of Miramar Parkway (Segment AB) Design-Build, Broward and Miami-Dade Counties, FL, FDOT District 4, Project Surveyor. Segment AB is the largest and most complex segment of the corridor, and extends 3.1 miles from NW 170th Street to south of Miramar Parkway. The project provided express lanes in the existing I-75 median, along with 2.6 miles of reconstruction of the Homestead Extension of Florida's Turnpike to accommodate a direct median-to-median flyover express lane connection and new systems' interchange movements, as well as new CD roads and ramps at the Miami Gardens interchange. WGI was selected as the prime designer on three of the four I-75 express lane projects in District 4. This $233M segment is a critical component of the overall improvements to the corridor in both Miami-Dade and Broward counties. Services included roadway design, structures, survey,

Registrations:
Professional Surveyor/Mapper: Florida #LS6644, 2008

Professional Land Surveyor: Maine #2512, 2014

Education:
Bachelor of Science, Geography - University of Maine, 2005

Master of Science, GPS Satellite Surveying and Conformal Mapping - University of Maine, 2007

Certifications:
Intermediate Maintenance of Traffic

TWIC

Affiliations:
American Association for Geodetic Surveying

Florida Surveying and Mapping Society

Florida Urban and Regional Information Systems Association

Geographic and Land Information Society

National Society of Professional Surveyors

Total Years of Experience:
20

OFFICE LOCATION: ORLANDO

environmental assessments and permitting, drainage, signing and pavement marking, utility coordination, utility locating, and traffic control plans. This project was honored with the 2019 ACEC-FL Outstanding Design-build Project Award.

Kings Highway Design Services for Reconstruction, St. Lucie County, FL, FDOT District 4, Principal. The project consisted of reconstruction of Kings Highway/SR 713 from north of I-95 overpass to north of St. Lucie Boulevard in St. Lucie County. The nearly three miles of reconstruction added capacity and improved access management and safety by expanding the existing two-lane rural highway to a four-lane rural highway, extending north to the typical section recently constructed to the south of the project limits. WGI services included temporary traffic control plans, utility coordination, environmental permitting, design survey, SUE, and right-of-way mapping.

SR 710 Reconstruction from Palm Beach County Line to Pratt Whitney Entrance Design-Build, Palm Beach County, FL, FDOT District 4, Project Surveyor. This Design-Build project consisted of the reconstruction of the existing two-lane undivided section to a four-lane divided roadway with a 40-foot median. The six-mile roadway reconstruction project also included the reconfiguration of the SR 710/CR 706 (Indiantown Road) intersection, which consists a combination of free-flow movements and proposed signalized movements. Other improvements included the design of dry detention stormwater management facilities parallel and adjacent to SR 710 and the bridge approaches, as well as outfall control structures, signing and pavement markings, a new traffic signal at the SR 710/CR 706 (Indiantown Road) intersection, and street lighting. WGI is providing roadway and drainage design, traffic control, signing and pavement marking, survey, utility coordination, environmental permitting, and public involvement.

Miscellaneous Districtwide Right-of-Way Mapping Services, Various Florida Counties, FL, FDOT District 4, Project Surveyor. Sam provided technical support on this right-of-way mapping production support contract for FDOT District 4. This continuing services contract included establishment of historic alignments, control survey mapping, right-of-way maps, maintenance maps, monumentation mapping, legal description preparation, and other tasks as assigned by the Department. Final average grades of 3.4 were achieved for schedule, quality, and management.

CR 712 (Midway Road) Widening from SR 615 to US 1, St. Lucie County, FL, FDOT District 4, Project Manager. This project included the widening and improvement of CR 712/Midway Road in St. Lucie County. In addition to providing engineering services, WGI provided design surveying services and right-of-way mapping for right-of-way acquisition. Survey services included establishment of horizontal and vertical control, full DTM, hydrographic surveys, bridge detail surveys, drainage surveys, and utility locations. Right-of-way mapping services included right-of-way map preparation, title review services, and the preparation of sketches and legal descriptions.

SR 615 Design, St. Lucie County, FL, FDOT District 4, Project Surveyor. This project included design surveys for capacity improvements on SR 615 from County Road 608 to US 1, a total distance of 1.5 miles. The baseline of survey and right-of-way were retraced, full design topography and DTM were performed, drainage surveys were performed, utilities were designated, and 30 test holes were provided to clear mast arm installations at the US 1 intersection.

SR 614 (Indrio Road) from I-95 to SR 607 (Emerson Avenue), St. Lucie County, FL, FDOT District 4, Project Surveyor. This project is a full design survey for roadway widening and acquisition. Survey services included PNC establishment, right-of-way control survey map, right-of-way map preparation, sketch and legal preparation, full DTM, hydrographic surveys, bridge detail surveys, utility designation and test holes, building ties, and roadway and canal cross sections. Multiple field crews were dispatched to expedite the schedule.

SR 710 Big John Monahan Bridge Widening and Reconstruction Design-Build, Martin County, FL, FDOT District 4, Project Surveyor. This $32M design-build project increased capacity and improved safety by upgrading a two-mile section of SR 710, including replacement of the Big John Monahan Bridge over the St. Lucie Canal. As a unique alternative, WGI was able to reduce the cost by reducing the bridge length from the 1,951 feet shown in the concept plans to 953 feet, eight inches, a savings of nearly $15M for the state of Florida. The 1,000-foot reduction in bridge length was achieved through diligent research and meetings with adjacent landowners that led to an innovative and cost-saving approach to strategically acquire right-of-way from a willing seller. Services included roadway design, survey, environmental assessments, permitting, drainage, signing and pavement marking, utility coordination, and traffic control plans. The project was completed 104 days ahead of schedule and the design-build team was awarded a perfect Contractor's Past Performance Rating (CPPR) score of 110. The project also was awarded the 2015 FICE Grand Award; DBIA Florida Project of the Year Award for Transportation, DBIA Florida Best Overall Project of the Year, and Engineers Council Distinguished Engineering Project Achievement Award.

Senior SUE Field Supervisor

Jay Scagliola, PSM

Jay has been surveying in Florida since 1971 and is highly skilled in all phases of land surveying, including mapping performance standards, data collection and calculation, as well as drafting. Jay has 25 years of experience in subsurface utility locating, design and management services on major public infrastructure and site development projects including roadways and asset inventories. His widespread network of contacts and utility locating knowledge is well respected by municipal and private as well as Florida Department of Transportation. His responsibilities include designating and utility locating coordination, quality assurance, and final project review of survey processing and computer drafting.

Registrations:
Professional Surveyor/Mapper: Florida #LS5066, 1992

Certifications:
Confined Space

Intermediate Maintenance of Traffic

Total Years of Experience:
40

RELEVANT EXPERIENCE

SR 9/I-95 at Copans Road Interchange Modification, Broward County, FL, FDOT District 4, SUE Manager. This project included interchange improvements to address operational deficiencies associated with the SR 9/I-95 at Copans Road interchange. Deficiencies included a high level of traffic congestion in the merge and diverge areas between entrance and exit ramps. Northbound and southbound entrance ramps will be combined into CD roads to provide a less congested and slower speed merge condition that is separated from the SR 9/I-95 general purpose lanes.

Kings Highway Design Services for Reconstruction, St. Lucie County, FL, FDOT District 4, SUE Manager. The project consisted of the reconstruction of Kings Highway/SR 713 from north of I-95 overpass to north of St. Lucie Boulevard in St. Lucie County. The nearly three miles of reconstruction will add capacity and improve access management and safety by expanding the existing two-lane rural highway to a four-lane rural highway, extending north, the typical section recently constructed to the south of the project limits. WGI services include temporary traffic control plans, utility coordination, environmental permitting, design survey, SUE, and right-of-way (R/W) mapping.

I-95 Interchange Improvements at Pembroke Road, Broward County, FL, FDOT District 4. As part of a districtwide contract, this task assignment included various operational and safety improvements at the I-95/Pembroke Road interchange. Additional right-turn lanes were proposed at the northbound and southbound ramp terminals. As a result of the pavement widening for the right-turn lanes, the project included incidental improvements to the drainage, signing and pavement markings, lighting, and signalization.

Off-System Bridge Replacements throughout Palm Beach County, Palm Beach County, FL, FDOT District 4, SUE Manager. This project included roadway, structural and drainage engineering, all utility coordination, surveying and environmental permitting for four bridge replacements in Palm Beach County. The four bridges are Seminole Drive over L-16, Sandalfoot Boulevard over E-1E Canal, New England Boulevard over E-1 Canal and El Clair Ranch Road over L-30 Canal are off-system bridges over Lake Worth Drainage District canals. El Clair Ranch Road bridge will be raised to FDOT navigable standards. Additionally, this is intended to be a pilot project for the use of auger cast piles.

Banyan Boulevard Improvements from Tamarind Avenue to Olive Avenue - Phase I, Palm Beach County, FL, City of West Palm Beach, SUE Manager. The City of West Palm Beach is embarking upon a transformation of the Banyan Boulevard corridor from Tamarind Avenue to Olive Avenue. With proper execution, this project will transform this roadway from what has historically been considered a dividing line between the northwest neighborhoods and the northern border of downtown West Palm Beach into a highly visible gateway into the downtown business district. To accomplish this task, the scope of services included urban planning and design, traffic engineering and transportation planning, public outreach, topographic survey, geotechnical testing, signalization modification, photometric and lighting design, roadway design, construction sequencing, landscape architecture and minor utilities adjustments.

All Electronic Conversion (AET) - Northern Coin (Orange & Lake), Orange County, FL, Florida's Turnpike Enterprise, SUE Manager. The project consisted of multiple All Electronic Tolling (AET) conversions on Florida's Turnpike Mainline (SR 91) between MP 254 and MP 296. Including AET Lite conversions to remove cash collection off of the 'Northern Coin' system at the Orlando South, Winter Garden/Clermont, US 27/Leesburg South and North, and County Road 470 interchanges, and a complete AET conversion, including a new accessible gantry and toll facility, at the existing Leesburg Mainline Plaza. WGI services included, survey, SUE, and utility coordination for the entire corridor, in addition to roadway, drainage, miscellaneous structures and signing/marking design services for the AET Lite conversion at the Orlando South Interchange.

OFFICE LOCATION: WEST PALM BEACH

Pedestrian Lighting Retrofit, Brevard County, FL, FDOT District 5, SUE Manager. This project consisted of improvements for pedestrian lighting at 21 various intersections located throughout Brevard County. These improvements included the addition of new roadway lighting features and retrofitting existing roadway lighting features to increase the safety of intersections for pedestrian crosswalk movements.

Florida's Turnpike All Electronic Tolling (AET) Phase 5C, Palm Beach County, FL, Florida's Turnpike Enterprise, SUE Manager. The project consisted of the AET of three Florida's Turnpike Mainline interchanges in Palm Beach County, including Glades Road, Atlantic Avenue, and Boynton Beach Boulevard. WGI's scope of services included all roadway, drainage and signing, and pavement marking engineering and contract plans development at the Atlantic Avenue interchange, in addition to project wide utility coordination and miscellaneous survey activities.

Florida Power & Light Martin Plant Security Fence Installation, Martin County, FL, Florida Power & Light Company, SUE Manager. Florida Power & Light (FP&L) is improving their Martin Power Generation Plant near Indiantown, Florida to add additional security and provide a parking area for times of disaster response. WGI assisted FP&L to provide approximately 2,600 linear feet of fencing with gates, approximately three-acre parking area with truck turn around, a 600-square foot guard house, and improvements to the entrance road to accommodate the guardhouse. WGI provided civil engineering, survey, subsurface utility exploration, lighting and electrical design, and geotechnical services.

Florida Power & Light Martin Plant Water Main and Force Main Improvements, Martin County, FL, Florida Power & Light Company, SUE Manager. Jay managed the subsurface utility exploration required for the design of the project. With the recent incorporation of Indiantown Village and expansion of its utility service area, Florida Power & Light (FP&L) has agreed to allow Indiantown Village to supply its Martin Power Plant with potable water and sanitary sewer services. WGI assisted FP&L with the design of a six-inch force main and an eight-inch potable water main parallel to each other within the FPL transmission corridor between the Indiantown Village Cogeneration Facility and the FP&L Martin Plant. This route is approximately five miles in length.

The Fountains - Parcel A, Palm Beach County, FL, Concert Fountains, SUE Manager. Jay provided subsurface utility locations to assist the Geotechnical Engineer in determining safe locations to drill for their investigations. The Fountains is a 150-acre golf course redevelopment project located near the southwest corner of Jog Road and Lake Worth Road which includes a mix of residential housing types as well as a commercial development. The residential development includes 318 apartments, 191 townhomes, and 191 single-family homes, totaling 704 units. The commercial parcel consists of 28,000 square feet of retail as well as a 110-room hotel.

The Fountains - Parcel B, Palm Beach County, FL, Concert Fountains, SUE Manager. The fountains is a 150-acre golf course redevelopment project located near the southwest corner of Jog Road and Lake Worth Road which includes a mix of residential housing types as well as a commercial development. The residential development includes 318 apartments, 191 townhomes, and 191 single-family homes, totaling 704 units. The commercial parcel consists of 28,000 square feet of retail as well as a 110-room hotel.

Military Trail at Indian Creek Parkway Signal Replacement, Palm Beach County, FL, Town of Jupiter, SUE Manager. This project consisted of the replacement of the existing span-wire signals with mast arm signals at the intersections of Military Trail and Indian Creek Parkway in the Town of Jupiter. Design services included signalization, miscellaneous structures, utility coordination, survey, and subsurface utility engineering. Additional project requirements included permitting the proposed improvements with Palm Beach County, and ensuring compatibility of the intersection with Palm Beach County signal interconnect plans.

Turnpike Widening from HEFT to North of Johnson Street, Broward County, FL, Florida's Turnpike Enterprise, SUE Manager. This four-mile roadway/survey project to widen the Turnpike Mainline (SR 91) from the existing six lanes to 10 lanes from HEFT (MP 47.3) to north of Johnson Street (MP 50.7). The southern limit of the project is the Dade/Broward County line. The proposed lineage will consist of three general use and two express lanes in each direction. Hollywood Boulevard and Miramar Parkway interchange modifications are also currently by studied. WGI survey services included design survey, terrestrial mobile LiDAR, global positioning system, subsurface utilities, R/W mapping, and legal description services.

Power Pole Inventory Collection, Palm Beach County, FL, City of Lake Worth, SUE Manager. WGI assisted the City of Lake Worth with data collection and GIS services to supplement their existing database containing their utility pole locations. The purpose of the work is to obtain various pole and attachment attributes, identify attachees (to the extent possible), and provide utility records research to support these activities. WGI provided personnel and resources to visit and observe approximately 12,000 City of Lake Worth owned utility poles and provided certain attribute information as requested by the City under the terms of the work order. Deliverables will include a Microsoft Excel spreadsheet detailing pole IDs and number of attachments by owner. WGI also provided a certified surveyor's report detailing the means by which the work was completed, expected accuracies of data, and concerns with the GIS product as delivered.

WGI

SUE Field Manager

Michael Kriegel

Education:
High School Diploma, - Pompano Beach High School

Total Years of Experience:
16

RELEVANT EXPERIENCE

US 98 Emergency SUE Support/Hurricane Michael - Washout Locations, Franklin County, FL, FDOT District 3. WGI assisted FDOT with locating underground utilities at 41 different locations along a 37-mile stretch of US 98 (from Apalachicola to Ochlocknee Bay) in Franklin County following Hurricane Michael. This spatial data was vital for the plans production and had to be completed the week before Thanksgiving. We quickly mobilized three SUE crews from various offices to meet this compressed schedule. All areas had significant portions of the roadway washed away during the storm and presented unique challenges at each site. Our SUE efforts were complemented with aerial imagery of the sites to provide the engineer with a true understanding of the storm's impact on the roadway corridor. Aerials were taken utilizing a quadcopter unmanned aerial system and processed to create orthophotos of the sites. This combination of detailed underground utilities and new aerial photos allowed for a successful design effort and was instrumental in re-establishing the roadway and restoring safe conditions for the public.

Turnpike from I-595 to Wiles Road Survey & Mapping Services, Broward County, FL, Florida's Turnpike Enterprise. WGI, as a sub for geospatial services, utility coordination, and tolling expertise, for the PD&E study for the widening of the Turnpike Mainline from I-595 to Wiles Road in Broward County. This 17-mile-long project will evaluate the phased implementation of general toll and express lanes, improvements to existing interchanges, and the potential for new interchanges at Oakland Park Boulevard, Cypress Creek Road, and a third possible location. Upon completion, it will expand the express lane network in South Florida and give drivers a choice for improved travel time performance and reliability. Widening alternatives will be evaluated to minimize impacts to Florida Gas Transmission (FGT) facilities will consider impacts to structures, roadside swales, canals, maintenance access, noise walls, ITS facilities, and R/W needs. FTE desires a phased implementation of the ultimate typical section, so careful attention will be given to lane assignments during the interim condition to ensure they can be repurposed for express lanes.

The Waterford - ROW Abandonment, Platting, and Civil Engineering, Palm Beach County, FL, Lifespace Communities. WGI was hired to provide additional planning, civil, survey, and SUE services due to the increase in the project's size and complexity. Services include the coordination and representation for right-of-way abandonment, platting, and engineering services due to the lack of information on the as-built drawings for existing utilities on the property. It requires the proper identification of underground utilities in order to complete the development plans and avoid damage to the existing infrastructure.

Avenir Development FPL Underground Residential Design POD A-4, Palm Beach County, FL. This project includes preliminary design of electrical distribution infrastructure to 107 new single-family homes on 58 acres, which is considered Parcel A-4 of the overall Avenir Development in Palm Beach Gardens, Florida. The Avenir master development is located approximately 3/4 miles east of Coconut Blvd on the north side of Northlake Blvd and consist of a total of 4,752 acres.

Orlando South Interchange Modification at MP 254, Orange County, FL, Florida's Turnpike Enterprise. Surveying and mapping services on this Turnpike interchange improvement project included establishment of horizontal and vertical control, establishment of historic baseline of US 441 and Florida's Turnpike, aerial target locations supporting the aerial mapping effort, limited topographic surveys and digital terrain models, and subsurface utility designations (Quality Level B) and utility test holes (Quality Level A).

SR 817 (University Drive) at Nova Drive, Broward County, FL, FDOT District 4. WGI established Primary Network Control and performed placement of aerial targets for photogrammetric survey. Project Network Control sheets (PNC) were prepared in accordance with District standards depicting the results of the control survey. The survey efforts also included establishment of the historical baseline of survey and RW lines within the project corridor. This effort included field reconnaissance and analysis of 8 section corners and existing RW points within 16 blocks. A drainage survey was performed for locating and detailing 32 drainage structures within the project corridor. XYZ data, pipe sizes, type, condition and flow line data was acquired for each structure. Topographic/3D (DTM) data was acquired at 2 intersections and along the east side of SR 817 to assist the designers. All work was performed in accordance with criteria established by the Department's Highway Field Specifications, D.O.T. Survey Handbook, District IV Survey Guidelines, CADD Production Criteria Handbook and complies with the minimum technical standards for land surveyors rule 5J-17 F.A.C., Florida

OFFICE LOCATION: FORT LAUDERDALE

Statute 472.027. SUE services included designating 9 utilities within the project corridor. Test holes were included as optional services for this project.

SR 817 University Drive at Nova Drive Post Design, Broward County, FL, FDOT District 4. WGI established Primary Network Control and performed placement of aerial targets for photogrammetric survey. Project Network Control sheets (PNC) were prepared in accordance with District standards depicting the results of the control survey. The survey efforts also included establishment of the historical baseline of survey and RW lines within the project corridor. This effort included field reconnaissance and analysis of 8 section corners and existing RW points within 16 blocks. A drainage survey was performed for locating and detailing 32 drainage structures within the project corridor. XYZ data, pipe sizes, type, condition and flow line data was acquired for each structure. Topographic/3D (DTM) data was acquired at 2 intersections and along the east side of SR 817 to assist the designers. All work was performed in accordance with criteria established by the Department's Highway Field Specifications, D.O.T. Survey Handbook, District IV Survey Guidelines, CADD Production Criteria Handbook and complies with the minimum technical standards for land surveyors rule 5J-17 F.A.C., Florida Statute 472.027. SUE services included designating 9 utilities within the project corridor. Test holes were included as optional services for this project.

HEFT Widening from SR 836 to NW 106th Street, Miami-Dade County, FL, Florida's Turnpike Enterprise. The project consists of the completion of final design plans and construction specifications for the widening of the Homestead Extension of the Florida's Turnpike (HEFT) from south of SR 836 (Dolphin Expressway) to NW 106th Street to ten lanes including the incorporation of express lanes. Scoped project improvements included the design and inclusion of the ultimate HEFT/SR 836 interchange incorporating all movements to and from the two expressway facilities, including direct connections to the HEFT express lanes to and from the west, and incorporation of a new northbound entry ramp at NW 41st Street from NW 117th Avenue. The project design scope also incorporates signing and pavement marking related to the implementation of express lanes, drainage and stormwater management improvements, highway lighting, upgrading existing ITS infrastructure, and the replacement or addition of multiple toll facilities.

SR 7 from SW 26th Street to Fillmore, Broward County, FL, FDOT District 4. This project supported widening of an urbanized section of SR 7 in Broward County. WGI was responsible for all utility locating activities on the project. All facilities were designated, based on UAO green lines, and unknown/unclaimed facilities were documented and returned to the Department's utility coordinator. 278 utility test holes were performed in under four weeks by deploying resources from multiple WGI office locations. Several of the locates were performed at heavily-trafficked intersections and required night work and lane closure permitting.

Ronald Spencer, P.E.

SENIOR ENGINEER (ROADWAY & SIGNALIZATION)

PROFESSIONAL REGISTRATION:
Professional Engineer Florida # 39141
Professional Engineer California # 49743

EDUCATION:
B.S., Civil Engineering, Clemson University, 1967

YEARS OF EXPERIENCE: 44

OFFICE: Pembroke Pines

BIO:
Mr. Spencer has been involved in the practice of civil engineering for more than 40 years. He is experienced in Project Management, General Engineering Consultant Project Management Activities, Consultant Plan Reviews, FDOT Design procedures, i.e. Plans Preparation Manual, Design Standards, MUTCD, and AASHTO, FDOT's Long Range Estimates Program, also Post Design Construction Services. Provided Utility Coordination on State and County projects.

PROJECT SPECIFIC EXPERIENCE:

Broward County Continuing Engineering Services for Transportation and GEC Projects Contract No.: RFP No. PNC2114364P1 (on going). BMA is providing Design Services for Four (4) School Zone Flasher Improvement project. Scope includes signalization, signing and marking plans, and utility coordination. Mr. Spencer serves as roadway EOR.

Broward County Project No. 2017-1-288 (Contract: T1368213BI) Bridge Strike Repairs on the bridge located at Sheridan Street (Bridge No. 860155) over Florida's Turnpike. Working for Broward County Highway and Bridge Maintenance Division performed bridge maintenance that included design of repairs to 24 precast AASHTO girder beams including strand replacements from bridge hits, expansion joint systems, and replacement of the pedestrian sidewalk fencing enclosures on both sides of the bridge with associated maintenance of traffic. Perform LRFR load rating. Mr. Spencer served as assistance PM.

Bridge No. 864031 located at NW 1st Street at C-10 Canal, for the Inspection, Scoping, and Repair Plans on the bridge. Dania Beach, FL (2018). BMA provided Specialty Engineering responsible to prepare repair plans for work including material specifications, quantities, construction estimate, and provided cursory site inspection of the repairs. Mr. Spencer performed QC. *Reference: Henry Louden, Bluewater Builders, Inc. (954) 753-7233*

Broward County Design Services for Wiles Rd from University Drive to Riverside Drive, Broward County (R2113749P1). The purpose of the project is to widen the road from 4 lanes to 6 lanes. The proposed 6 lanes widening will transition to the existing 4 lanes at the beginning of the project, just west of University Drive. BMA was responsible for the design of walls, mast arms, and miscellaneous structures. Mr. Spencer worked as QC Engineer and provided coordination support.

Districtwide Minor Design Contract, FDOT D4. Design and preparation construction contract plans, documents, and special provisions for minor projects RRR, Safety and other services that include 3D Modeling. Serving as Subconsultant, BMA provides structural design.

FM 230377-1-32-04, DW Plans Review, Florida Department of Transportation, District 4. Mr. Spencer served as Project Manager on this Districtwide Plans Review and Support Services Contract for 143 task work orders that included: Peer review of the design and preparation of plans for highways that included Major Highway Design and Controlled Access Highway Design. Task work orders covered reviews of plans prepared for cities, counties, through the Local Agency Program (LAP) and FDOT projects.

DW PD&E and Support Services, FDOT District 4. Developing and reviewing engineering and environmental documentation on transportation improvement projects and Project Planning, and Preliminary Engineering. Mr. Spencer served as TTC and roadway engineer on this contract. Task work orders included SR 710/Beeline from SR 76 to Palm Beach County Line PD&E Study; SR 714/West Martin Highway Concept Study from Citrus Blvd. to SW Martin Downs Blvd Scrub Jay, Cara-Cara, and gopher tortoises survey; and CR-510 from CR-512/85th St to 66th Ave pre-PD&E.

Ronald Spencer, P.E.

SENIOR ENGINEER (ROADWAY & SIGNALIZATION)

SR-820/Hollywood Blvd/Pines Blvd form SR-93/I-75 to SR-5/US-1/Young Circle, [FPID: 431770-1] FDOT District 4. The main goal of this project study was to improve connectivity of SR 820/Pines Boulevard/Hollywood Boulevard through bicycle lanes, pedestrian paths, and traffic improvements. There are about 39 individual projects improvements along the segment of SR 820 identified by the District 4 Office of Modal Development in conjunction with the MPO, the City of Hollywood, the City of Pembroke Pines, and the City of Miramar. Mr. Spencer served as EOR.

SR-820/Hollywood Blvd/Pines Blvd & Sr-823/Flamingo Rd. [FPID: 431770-2] FDOT District 4. 14 separate segmented Mobility improvements along a 17-mile corridor that included widening, shoulders, bicycle lanes, pedestrian paths, sidewalks, new drainage systems, turn lane extensions, and traffic improvements. Mr. Spencer served as EOR.

City of Hollywood Mobility Improvements at Various Locations [FPID: 431770-5] FDOT District 4. 13 separate segmented Mobility improvements on SR 820/Hollywood Blvd., Park Rd., 35th Ave., on 6.7-mile project length that included widening, shoulders, bicycle lanes, shared use lanes, intersection improvements, pedestrian paths, sidewalks, new drainage systems, turn lane extensions, and traffic improvements. Mr. Spencer served as EOR.

SR 824/Pembroke Road RRR from E of I-95 to W of US 1 RRR, FDOT District 4. Milling and resurfacing, installation of pedestrian countdown signals, signing and pavement markings, ADA improvements, implement bicycle lanes, remove unused drop curb at various locations and sidewalk and replace them with roadway pavement and curb returns. Mr. Spencer provided support in peer review of roadway plans, and QC.

SR 70 (at Florida's Turnpike) Milling and Resurfacing. FDOT District 4. The SR 70 RRR project located in St. Lucie County is a 3-mile long section of highway. The portion from east of 10 Mile Creek (West of McCarty Rd) is 4-lane divided rural section ending at Gordy Road. From Gordy Road to the East Edge of the Turnpike Bridge is an urban 4-lane divided roadway. The scope of work includes milling and resurfacing the existing pavement, MOT plans, signing and pavement markings, utility coordination, pavement design and implementing required minor safety improvements in accordance with District IV's current Policy. Mr. Spencer served as lead Engineer.

Eller Drive, Ft. Lauderdale, Florida. Florida Department of Transportation – District 4. This ICTF project consists of elevated express lanes from Interstate 595 to Port Everglades. Mr. Spencer serves as lead in the design and preparation of plans, responsible area of work consisted of all surface streets affected by new elevated express lanes. Surface street work includes widening, new construction and resurfacing. Additional work areas included MOT, Rail Road coordination and accommodation of airport and seaport traffic on surface streets with 13 Utility Agency Owners.

Florida Department of Transportation, District 4. Mr. Spencer Provided In-house Project Management services to FDOT District IV for Consultant Management. During the eight and one-half month duration of this assignment, Mr. Spencer became very sensitive to the needs of the Department, and the Department's expectation of the Consultant Community.

Florida Turnpike – General Consultant Program Management Activities. Mr. Spencer provided Consultant Plans Review, Typical Section Package Review, Design Variation / Exception Package Review, and Preparation of Independent Staff hour estimates. Performed over one hundred consultant plan reviews.

SR 932/NW 103 Street/W 49 Street from SR 826/Palmetto Expressway Interchange to West 12 Avenue, Miami-Dade County. FDOT District 6. The project includes Repaving and restriping the roadway, Modifying existing medians, improving turning lanes, Modifying existing driveway access, Installing high emphasis crosswalks, Improving traffic signals, Upgrading pedestrian and traffic signage. Mr. Spencer serves as EOR.

SR 5/ US 1 from SW 37 Avenue to Ponce Deleon Boulevard. Miami-Dade County. FDOT District 6. Safety improvements that includes completed reconstruction of the s-curved alignment on a urban 6-lane urban roadway facility, 0.5 miles long. Senior Engineer leading roadway traffic control and drainage services under Lakes Engineering (prime).

Ron DeSantis, Governor

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FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

SPENCER, RONALD LEE

911 HILLCREST COURT
#126
HOLLYWOOD FL 330210000

LICENSE NUMBER: PE39141

EXPIRATION DATE: FEBRUARY 28, 2021

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County Commissioners

Jesus Mustafa, P.E.

SENIOR ENGINEER (STRUCTURES)

BMA Consulting Engineering
Transportation Infrastructure & Innovation

PROFESSIONAL REGISTRATION:
PE Florida 43809 (1991).
P.Eng. Ontario, CANADA: 100171457.

EDUCATION AND CERTIFICATES:
Bachelor of Science, California State University, Long Beach (CSULB).
MSCE at CSULB (Drainage); UF/UCF (Structures)
NHI Safety Inspection of In-Service Bridges (2019)
OSHA Fall Protection Course (2019)
FDOT Traffic Control Plan Design Certification
Bridge Inspection, Maintenance and Repair Parts I, II, III, and IV
FDOT PD&E Training
FDOT LRE training

YEARS OF EXPERIENCE: 31

BIO:
Jesus has worked in highway and interstate design, PD&E, and planning projects since 1986. He has experience in project management, highways and major and complex bridge projects, including PD&E studies on signature bridges, interchange modifications, large multi-level interstate projects, and depressed facilities and tunnels. His Districtwide experience includes serving as manager and EOR for numerous projects with FDOT, County, and with SFWMD Big Cypress Basin.

SPECIFIC EXPERIENCE:

Broward County Continuing Engineering Services for Transportation and GEC Projects Contract No.: RFP No. PNC2114364P1 (on going). BMA is providing Design Services for Four (4) School Zone Flasher Improvement project. Scope includes signalization, signing and marking plans, and utility coordination. Mr. Mustafa serves as Senior Engineer and EOR.

Broward County Project No. 2017-1-288 (Contract: T1368213BI) Bridge Strike Repairs on the bridge located at Sheridan Street (Bridge No. 860155) over Florida's Turnpike. Working for Broward County Highway and Bridge Maintenance Division performed bridge maintenance that included design of repairs to 24 precast AASHTO girder beams including strand replacements from bridge hits, expansion joint systems, and replacement of the pedestrian sidewalk fencing enclosures on both sides of the bridge with associated maintenance of traffic. Perform LRFR load rating. Mr. Mustafa served as Project Manager and EOR.

City of Dania Beach, Bridge No. 864031 located at NW 1st Street at C-10 Canal, for the Inspection, Scoping, and Repair Plans on the bridge. Dania Beach, FL. BMA provided Specialty Engineering responsible to prepare repair plans for work including material specifications, quantities, construction estimate, and provided cursory site inspection of the repairs. Mr. Mustafa served as Project Manager and EOR.

Broward County Design Services for Wiles Rd from University Drive to Riverside Drive, Broward County (R2113749P1). The purpose of the project is to widen the road from 4 lanes to 6 lanes. The proposed 6 lanes widening will transition to the existing 4 lanes at the beginning of the project, just west of University Drive. BMA was responsible for the design of walls, mast arms, and miscellaneous structures. Mr. Mustafa serves as Senior Structural Engineer.

Districtwide Plans Review and On-site Services, FDOT District 4: Mr. Mustafa served as Project Manager, lead reviewer of plan reviews and support services contract for 143 task work orders. Reviews included roadway, drainage, temporary traffic control, signalization, signing and pavement markings, structure and bridge components, ITS, and Landscape Architecture construction documents and reports. Provided extensive in-house support and reviews for off-system LAP projects.

Districtwide Minor Design Contract, FDOT D4. Design and preparation construction contract plans, documents, and special provisions for minor projects RRR, Safety and other services that include 3D Modeling. Serving as Subconsultant, BMA provides structural design.

Districtwide Minor Structures Contract, FDOT District 4. *Served as PM and Senior Structural Engineer for the design of various task-work-order projects that included:*

- I-95 over S, Fork New River emergency repairs.
- I-595 WB Ramp to SR 84 WB (Weston) over drainage pond.
- US 27/SR 80, Belle Glade, special light pilaster supports integrated under sidewalk.
- I-95 / I-595 over N. New River Opaque Visual Barrier and Fence system.

Jesus Mustafa, P.E.

SENIOR ENGINEER (STRUCTURES)

BMA Consulting Engineering
Transportation Infrastructure & Innovation

- Sample Road Overpass at Florida's Turnpike.

DW PD&E and Support Services, FDOT District 4. Developing and reviewing engineering and environmental documentation on transportation improvement projects and Project Planning, and Preliminary Engineering. Mr. Mustafa serves as Lead Engineer on this contract. Task work orders included SR 710/Beeline from SR 76 to Palm Beach County Line PD&E Study; SR 714/West Martin Highway Concept Study from Citrus Blvd. to SW Martin Downs Blvd Scrub Jay, Cara-Cara, and gopher tortoises survey; and CR-510 from CR-512/85th St to 66th Ave pre-PD&E.

SR-820/Hollywood Blvd/Pines Blvd form SR-93/I-75 to SR-5/US-1/Young Circle, [FPID: 431770-1] FDOT District 4. The main goal of this project study was to improve connectivity of SR 820/Pines Boulevard/Hollywood Boulevard through bicycle lanes, pedestrian paths, and traffic improvements. There are about 39 individual projects improvements along the segment of SR 820 identified by the District 4 Office of Modal Development in conjunction with the MPO, the City of Hollywood, the City of Pembroke Pines, and the City of Miramar. Mr. Mustafa served as PM and lead designer.

SR-820/Hollywood Blvd/Pines Blvd & Sr-823/Flamingo Rd. [FPID: 431770-2] FDOT District 4. 14 separate segmented Mobility improvements along a 17-mile corridor that included widening, shoulders, bicycle lanes, pedestrian paths, sidewalks, new drainage systems, turn lane extensions, and traffic improvements. Mr. Mustafa served as Project Manager and lead designer.

City of Hollywood Mobility Improvements at Various Locations [FPID: 431770-5] FDOT District 4. 13 separate segmented Mobility improvements on SR 820/Hollywood Blvd., Park Rd., 35th Ave., on 6.7-mile project length that included widening, shoulders, bicycle lanes, shared use lanes, intersection improvements, pedestrian paths, sidewalks, new drainage systems, turn lane extensions, and traffic improvements. Mr. Mustafa served as Project Manager and lead designer.

A1A/Peter P. Cobb Rehabilitation over ICWW, FDOT District 4. Bridge rehabilitation and scour countermeasure drainage revetment analysis for the final stage for a complex marine mattress system that extended more than 1000-ft. across the ICWW. Extensive agency coordination included: FDOT, US Army Corps of Engineers (USACE) and Section 408; South Florida Water Management (SFWMD); US Coast Guard (USCG); National Marine Fisheries Service (NMFS); US Fish and Wildlife Service (USFW). Prepared, submitted and obtained permit approvals within 6 months. Mr. Mustafa served as Sr. Drainage, Permits and Structural Engineer.

SR 70 Resurfacing, Restoration, and Rehabilitation (RRR), FDOT District 4. Rural and urban RRR 10-mile roadway project in St. Lucie County, Florida. Project begins just west of McCarty Road and ends west of I-95. Consisted of minor shoulder widening, signalization, milling and resurfacing. Mr. Mustafa was the Project Manager and EOR for variances; RRR design report; checking and QC of signing, pavement marking plans; maintenance of traffic, drainage and roadway plans and calculations.

SR 824/Pembroke Road RRR from E of I-95 to W of US 1 RRR, FDOT District 4. Milling and resurfacing, installation of pedestrian countdown signals, signing and pavement markings, ADA improvements, implement bicycle lanes, remove unused drop curb at various locations and sidewalk and replace them with roadway pavement and curb returns. As subconsultant to TRACE Mr. Mustafa provide support in structures, peer review of roadway plans, and QC.

I-595 Reversible Lanes Design-Build project, - Broward County, FL. FDOT District 4. The structural design effort consisted of final design and development of complete structural plans for Zones 1, 2, 3, 4 and 6 (total 3 miles) of this project corridor. This is a Public/Private Partnership between ACS/Dragados and the Florida Department of Transportation that includes design-build, toll lanes, and an accelerated schedule. Peer review Concrete and steel bridges, retaining walls, and other structures as required. Prepare and check quantity calculations from plans. Perform shop drawing reviews. Ensure that project needs are met in a timely and effective manner.

DW Plans Review and Support Services. FDOT District 6. The contract includes all necessary engineering, research, and coordination required for reviewing scoping reports, traffic reports, PD&E reports, permit packages. Mr. Mustafa serves as Project Manager. He has managed over 660+ plans review assignments under this contract.

Ron DeSantis, Governor

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PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

MUSTAFA, JESUS A NASSER

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PEMBROKE PINES FL 33029

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Broward County Board of County Commissioners

PNC2119168P1

Certificate of Completion

Jesus A. Mustafa

Has Completed a Florida Department of Transportation Approved Temporary Traffic Control (TTC) Advanced Course.

10/20/2021	119	Miguel Parlade	33109
Date Expires	FDOT Provider #	Instructor	Certificate #

FIU Engineering & Computing
Division of External Programs

Florida International University
10555 W. Flagler St. EC3602
Miami, FL 33174
https://dep.fiu.edu/academics/programs/continuing-education/mot
heaali@fiu.edu

FDOT

For more information about Temporary Traffic Control (TTC) or to verify this certificate

www.motadmin.com

Completion Certificate

JESUS MUSTAFA

Has successfully completed the

OSHA Fall Protection Course

On 7/1/2019 from the USF OTI Education Center and is awarded 0.1 CEUs by the USF office of Continuing Professional Development

Robert E. Nesbit

Bob Nesbit, B.A., CWC Program Director

USF HEALTH

UNIVERSITY OF SOUTH FLORIDA OSHA TRAINING INSTITUTE EDUCATION CENTER

A Service Of: American Safety Council

9/23/2019

U.S. Department of Transportation
Federal Highway Administration

National Highway Institute
Certificate of Training

JESUS MUSTAFA

has satisfactorily completed training in

STREAM STABILITY AND SCOUR AT HIGHWAY BRIDGES

conducted by

RCE A DIVISION OF AYERS ASSOCIATES

Location: ***Orlando, Florida***

Hours of instruction: ***28 hours***

Date: ***July 26 - 29, 1994***

Continuing Education Units: ***2.1***

James D. Schall
Instructor

Paul Hawkins
Coordinator

George M. Sherwood
Director, National Highway Institute

Rodney E. Slater
Federal Highway Administrator

BidSync
Broward County Board of County Commissioners
PNC2119168P1
p. 263

Edmundo M. Zevallos

SENIOR DESIGNER (STRUCTURES)

BMA Consulting Engineering
Transportation Infrastructure & Innovation

EDUCATION:
MBA, American Inter-Continental University. Weston, Florida. 2010.
BS in Civil Engineering, Catholic University of Guayaquil. Ecuador, 1993

YEARS OF EXPERIENCE: 18

OFFICE: Pembroke Pines

BIO:
Mr. Zevallos responsibilities as a Bridge Designer have ranged from geometry and layout of retaining walls and concrete bridge structures, to complete detailing for Category 2 steel bridges, to Structural Department CADD Manager responsible for overall production. Mr. Zevallos has hands-on experience with design, plans production, and processes required to maximize quality, profitability, and efficiency. Other tasks have included monitoring work flow, familiarity with current bridge design codes, proposals and pursuits, and on-going projects including conventional design, Districtwide Contracts, and Design-Build.

PROJECT SPECIFIC EXPERIENCE:

Bridge No. 864031 located at NW 1st Street at C-10 Canal, for the Inspection, Scoping, and Repair Plans on the bridge. Dania Beach, FL (2018). BMA provided Specialty Engineering responsible to prepare repair plans for work including material specifications, quantities, construction estimate, and provided cursory site inspection of the repairs. Edmundo worked as Senior Designer.

A1A/Peter P. Cobb Rehabilitation over ICWW, FDOT District 4. Bridge rehabilitation and scour countermeasure drainage revetment analysis for the final stage for a complex marine mattress system that extended more than 1000-ft. across the ICWW. Extensive agency coordination included: FDOT, US Army Corps of Engineers (USACE) and Section 408; South Florida Water Management (SFWMD); US Coast Guard (USCG); National Marine Fisheries Service (NMFS); US Fish and Wildlife Service (USFW). Prepared, submitted and obtained permit approvals within 6 months. Mr. Mustafa served as Sr. Drainage, Permits and Structural Engineer.

I-95/PBIA Interchange Bridge Joint Replacement, Palm Beach County FL, FDOT District 4. This three level directional interchange (total 1.789 miles) connects I-95 with the Palm Beach International Airport. It has fourteen bridges totaling 14,238 linear ft. In this project the scope was to remove and replace existing expansion joints on 8 concrete box girders bridges located at the Palm Beach Airport interchange. Responsible for handling the civil/structural set of plans of projects consisting of conceptual design, front end engineering (FEED) packages, detailed design and construction interface. Preparation of design drawings and material takeoff (MTO) reports for project.

WWRF Disinfection and Effluent Pumping Improvements Project, City of Largo in Pinellas County, Florida. Design and development as specialty engineering team member for a private client project. The project involves deep foundation design and development of technical plans for a water treatment plant as part of a disinfection and effluent pumping improvement project. The scope of the project involved structural design of micro-piles and prestressed concrete piles following AASHTO criteria along with ASTM specification. In addition to other criteria and specifications, FHWA recommendation for micro-pile design was used and providing support to the contractor with FDOT APL list of products.

I-95 and Spanish River Boulevard Interchange Improvements, Palm Beach County, FL. FDOT District 4. Provided design, construction assistance, shop drawings review and performed the load rating (LRFR) (total 4.1 miles) of 14 bridges. Designs and develops plans and drawings, which include the development of preliminary layout and/or final drawings. Participates in quality control checks, maintaining quality standards in all work produced, checking computations, and/or reviewing designs and drawings performed by others.

SR 5/US 1 Replacement of Four Low Level Bridges in Jupiter, FL, Palm Beach County FDOT District 4). This Design-Build project was comprised of the replacement of four low level bridges (total 0.607 miles) over the OFW (over the Outstanding Florida Water Body). This project required extensive coordination with utility companies, permitting agencies, contractor, CE&I as well as local municipalities. Follow design guidelines, standards, and procedures to effectively execute assigned work; create original designs, and work with other designers and engineers; prepare, review and check drawings and submittals; prepare and adhere to assigned budgets and schedules,

Edmundo M. Zevallos

SENIOR DESIGNER (STRUCTURES)

integrate team efforts, review work, set priorities, identify and resolve issues in a timely manner and communicate status to lead engineers.

I-595 Reversible Lanes Design-Build project, Broward County, FL, FDOT District 4. The structural design effort consisted of final design and development of complete structural plans for Zones 1, 2, 3, 4 and 6 (total 3 miles) of this project corridor. This is a Public/Private Partnership between ACS/Dragados and the Florida Department of Transportation that includes design-build, toll lanes, and an accelerated schedule. Create, maintain and edit design drawings and construction plans for this transportation project. (Concrete and steel bridges, retaining walls, and other structures) as required. Prepare and check quantity calculations from plans. Perform shop drawing reviews. Ensure that project needs are met in a timely and effective manner.

SR-9/I 95 Design-Build Bridge over Box Culvert South of 45th Street, Palm Beach County, FL. FDOT District 4. This design-Build project with Hubbard Construction Company (total 1600 ft 0.303 miles) involved the construction of new 60-foot single span bridge over an existing quadruple box culvert, and the associated highway, drainage, S&M and MOT design and plans preparation. Development of plans and sections for roadway and structural drawings. Reviews and resolves 3D model interferences/clashes.

SR 5/US 1 from SW 37 Avenue to Ponce DeLeon Blvd. FDOT District 6. Safety improvements that includes realignment and reconstruction of an urban roadway of 0.5 miles. Edmundo prepared all the structural components sets and miscellaneous design for the project. The structural Category 2 re-habilitation of the Aesthetic Level 3 Pedestrian Overpass increased in length by 20%. Edmundo served as Structural Designer.

Fishing Pier Project, City of Sunny Isles, FL (2009–2010). This project involved producing bridge production plans, superstructure and substructure reinforcement details and quantities of reinforcement (total 602 ft). Responsible for primarily site/civil Plans design. Responsibilities include providing Plans design, development and management on civil engineering structures. Reported to the Senior Structural Designer working closely with project managers, project engineers, designers.

Pedestrian North Bay Bridge Project, City of Sunny Isles, FL (2008–2009) This project involved producing bridge production plans, superstructure and substructure reinforcement details and quantities of reinforcement. Edmundo handled the structural plans preparation for the project (total 400 ft). Responsibilities include Prepares project plan and detail sheets, makes accurate revisions to plans based on mark-ups, perform quantity take-offs, and Assist with backup of files as needed.

SR 916/ NW/NE 135th Street from NW 6th Avenue to West of US-1/ SR-5/Biscayne Boulevard, FDOT, District 6. This two-part project consist of Resurfacing, Rehabilitation, and Restoration of SR 916/NW/NE 135th Street from NW 6th Avenue to west of US-1/SR-5/Biscayne Blvd. [FPID: 429346-1-32-01] and Safety Improvement to the intersections of SR 909/West Dixie Highway at SR 916 and SR 915/Memorial Hwy. at SR 916. Edmundo performed structures design of the SR 916 bridge over Biscayne Canal (C-8), Mast Arm designs, and Retaining Wall designs.

SR 5/ US 1 at Riviera Drive, FDOT District 6, FM # 433455-2. The project includes safety improvements and reconstruction of 0.2 mile intersection. Edmundo serves as Structural Designer

SR 694/Gandy Boulevard Design Build; Pinellas County, Client: FDOT District 7, length: 1.8 Miles. Project includes the design and reconstruction of SR 694/Gandy Boulevard from west of Martin Luther King Jr. Street N. (9th Street N.) (MLK St. N.) to east of SR 687 (4th Street N.) in Pinellas County. Widening from 4 to 6-lane controlled access facility, including grade-separated interchanges, frontage roads and other work, as well as the replacement of the existing box culvert on 4th Street N. at Tinney Creek (north of Koger Boulevard).

SR 934/Hialeah Expressway, Miami-Dade County, FL. FDOT District 6 (2003–2006). Provided design, construction assistance, shop drawings review and performed the load rating (LRFR) (total 2 miles) of the bridges. Designs and develops plans and drawings, which may include the development of preliminary layout and/or final drawings. Participates in quality control checks, maintaining quality standards in all work produced, checking computations, and/or reviewing designs and drawings performed by others.

SERGEI KUPCHENKO, PE

SR. MECHANICAL ENGINEER

Sergei is responsible for design, administration, coordination and inspection of mechanical and hydraulic systems for movable bridges and other facilities. He is also responsible for coordination and work with contractors and construction engineers and inspectors. He has 19 years of experience in the design, inspection, testing, evaluation, installation, rehabilitation and maintenance of operating equipment for movable bridges and other heavy movable equipment.

EDUCATION
M.S., Mechanical Engineering, University of South Florida, 1999

B.S., Mechanical Engineering, Vladimir State University, 1997

REGISTRATION
Professional Engineer: FL

TRAINING
Design Considerations for Hydraulic Systems Certificate, Bosch Rexroth

AFFILIATIONS & MEMBERSHIPS
American Society of Heating, Refrigerating and Air-Conditioning Engineers
Heavy Movable Structures, Inc.

YEARS OF EXPERIENCE
19

YEARS WITH FIRM
5

Andrews Avenue Bascule Bridge Rehab CEI, Broward County, Fort Lauderdale, FL
Senior Mechanical Engineer. TranSystems provided specialty engineering and CEI services for the hydraulic and structural rehabilitation of the Andrews Avenue bascule bridge over the New River in downtown Fort Lauderdale. Sergei conducted mechanical engineering inspections. Scope of construction included movable bridge rehabilitation, structural concrete, structural steel painting and additional accessory construction activities as defined in the contract plans and specifications.

Structural Design, Emergency Response and CEI Services, FDOT District 4, Districtwide, FL
Mechanical Engineer. Work included preparation of technical specifications for movable bridge repairs and painting, preparation of load ratings for deteriorated bridge substructures, design services and CEI support, design of H-pile repairs, preparation of initial bridge load ratings, design of a navigation lights system, preparation of MOT plans, lock motor details, coating condition assessment and required technical special provisions for two movable bridges, preparation of a line of sight study, followed by plans and contract documents, for improvements to bridge tender lines of sight at all state-owned bridges districtwide, and design of replacement of an original 1950s era timber fender.

Asset Management Inspection of Fixed and Movable Bridges, FDOT District 4, Various Locations, FL
Senior Mechanical Engineer. TranSystems served as a sub-consultant for the 2005-2012 and 2012-2019 cycles of this contract, and was responsible for the inspection and evaluation of 37 bascule bridges, one tunnel, and 74 fixed bridges, including 14 high-level segmental concrete box girder bridges. TranSystems was also on-call for emergency inspections, post rehabilitation inspections, post repair inspections, and miscellaneous design services.

Local Government Bridge Inspection, FDOT District 4
Lead Mechanical Engineer. Sergei was part of the annual inspections of 15 swing, bascule and rolling lift bridges throughout District Four.

Movable Bridge Design, All Aboard Florida, Fort Lauderdale, FL
Mechanical Engineer. Work included field inspection and analysis of the track, structural, mechanical and electrical components of three movable bridges on the FEC Railway that will be used for All Aboard Florida passenger train service in order to determine the extent of rehabilitation work required to provide 30 more years of reliable, safe operation that met current AREMA design specifications. Design plans and specification were prepared.

SR A1A Dania Beach Boulevard Bascule Bridge Rehabilitation, FDOT District 4, Hollywood, FL
Mechanical Engineer. Sergei was part of the rehabilitation of the Dania Beach Bridge over the Intracoastal waterway. This bridge is a double leaf bascule bridge with Hopkins Frame-mounted machinery. TranSystems provided design, field installation verification and inspection for the replacement of open gearing and motors, as well as the addition of new machinery brakes. The team also provided construction consultation, progress meeting attendance, shop drawing

coordination and reviews, RFI processing and response, and providing point of contact for the owner and contractor representative.

NE 14th Street Bridge, FDOT District 4, Fort Lauderdale, FL
Mechanical Engineer. Sergei served as a general engineering consultant for FDOT for the review of plans, specifications and shop drawings of design-build of twin two-leaf bascule bridge. He performed functional testing acceptance of this bridge. The project included rehabilitation of hydraulic system drive and hydraulic span lock system.

Park Boulevard Bridge Rehabilitation, Pinellas County, Seminole, FL
Mechanical Engineer. Sergei responsible for replacement of primary reducer, rehabilitation of buffer cylinders, span locks, live load shoes. Repairs included trunnion hub repair that involved replacing the existing bolts with new high strength dowel pins to restrain the trunnion hub and prevent the hub movement. In addition, hub clamps and backing ring clamps were added to prevent the trunnion hub from separating from the main girder web.

Brickell Avenue Bascule Bridge Rehabilitation, FDOT District 6, Miami, FL
Senior Mechanical Engineer. TranSystems was responsible for the rehabilitation design for this twin double leaf bascule bridge located at the mouth of the Miami River in downtown Miami. Work included replacement of span locks, control system modifications, installation of new pedestrian gates and modified barrier gates with pedestrian portals, restoration of barrier lighting along sidewalks, replacement of bollards along the Miami Riverwalk Trail, and replacement of the architectural lighting system for the Manuel Carbonell statue with an improved, LED-based system. A temporary span lock system was designed to minimize the extent of bridge closures needed due to the extreme amount of traffic present on this critical roadway.

Asset Management of Movable Bridges, FDOT District 6, Miami, FL
Mechanical Engineer. Sergei performed biennial mechanical routine inspection and annual movable inspection of 15 movable bridges

Asset Management of Movable Bridges, FL DOT District 5, FL
Mechanical Engineer, Sergei performed biennial mechanical routine inspection and annual movable inspection of 5 movable bridges

Bridge Rehabilitation (SR 64) over Gulf Intracoastal Waterway, FDOT District 1, Anna Maria Island, FL
Mechanical engineer. Sergei was responsible for the in-depth inspection, evaluation and rehabilitation of the mechanical system of a 50 year old, 3,120-ft. long bridge with a double-leaf trunnion bascule main span. He was also responsible for plans, specifications, cost estimates, equipment shop testing approval and bridge installation support for the rehabilitation and post design services and shop drawing review.

Complex and Movable Bridge Design, FDOT District 2, Districtwide, FL
Senior Mechanical Engineer. Work included providing plans, specifications and related maintenance of traffic details for various assignments, including: design of crash walls for bridges over railroads, field inspection and as-built load rating of swing span truss bridge and approaches, bascule machinery rack support plate strengthening, review of gusset plate conditions to recommend re-rating requirements, structural pile and footing jackets with and without cathodic protection, post tensioned concrete crutch bents on drilled shafts, and bridge painting.

Local Government Bridge Inspections, FDOT District 2, FL
Lead Mechanical Engineer. Sergei was responsible for routine and interim bridge inspections for local government owned bridges. Duties included inspection and evaluation of movable bridge mechanical and drive elements and reporting in FDOT's PONTIS system.

Local Government Bridge Inspections, FDOT District 7, FL
Lead Mechanical Engineer. Sergei was responsible for routine and interim bridge inspections for local government owned bridges. Duties included inspection and evaluation of movable bridge mechanical and drive elements and reporting in FDOT's PONTIS system.

Ron DeSantis, Governor

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KUPCHENKO, SERGEI SERGEEVICH

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JIAN HUANG, PHD, PE
SENIOR STRCUTURAL ENGINEER

Jian is experienced in design and analysis of new and rehabilitated minor, major, complex, and movable bridges. He has extensive experience in structural analysis of complex bridges including steel box girder, segmental concrete box girder, arch, truss, and cable-stayed bridges. Jian has presented/published more than 30 papers in TRB, ASCE Structures Congress, International Bridge Conference, and Heavy Movable Structures Biennial Symposium, etc.

EDUCATION
PhD, Civil/Structural Engineering
Tongji University, Shanghai, 1988

M.S.C.E., Civil/Structural Engineering
Tongji University, Shanghai, 1984

B.S.C.E., Civil/Structural Engineering
Tongji University, Shanghai, 1982

REGISTRATION
Professional Engineer: FL, TX

AFFILIATIONS & MEMBERSHIPS
American Society of Civil Engineers (ASCE)
American Institute of Steel Construction
Heavy Movable Structures

YEARS OF EXPERIENCE
30

YEARS WITH FIRM
22

HEFT Widening from NW 106 St to I-75, Florida's Turnpike Enterprise, Miramar, FL
Senior Engineer and Task Leader. Jian led the replacement of parallel bridges over US-27 and design of other new structures on the project, completed as a sub-consultant. New bridges included the mainline bridges in each direction and two direct connect ramps. Bridges consisted of pre-stressed concrete Florida-I beam superstructures with drilled shaft, concrete pile and steel pipe pile foundations, and included the widening of one existing bridge to facilitate phased construction and one new temporary detour bridge. Permanent MSE walls were designed, as well as 50+ overhead signs, 15 traffic signal mast arms, and ITS pole foundations.

SR A1A Dania Beach Boulevard Bascule Bridge Rehabilitation, FDOT District 4, Hollywood, FL
Senior Structural Engineer. Work on this project included structural, mechanical, and electrical rehabilitation of this 444'-3" trunnion bascule bridge carrying four lanes of traffic over the Intracoastal Waterway. Jian was responsible for structural work on the bridge, including design and plan preparation for repair of the main girder bottom flanges at live load shoes, replacement of sidewalk grating, installation of a new bicycle-friendly riding surface plates, replacement of platforms for traffic gate machinery at the traffic gates, and installation of new access staircases and platforms at the control house and west bascule pier.

Asset Management Inspection of Fixed and Movable Bridges, FDOT District 4, Various Locations, FL
Senior Structural Engineer. TranSystems served as a sub-consultant for the 2005-2012 and 2012-2019 cycles of this Load Ratings and Bridge Evaluations contract, and was responsible for the inspection and evaluation of 37 bascule bridges, one tunnel, and 74 fixed bridges, including 14 high-level segmental concrete box girder bridges. TranSystems was also on-call for emergency inspections, post rehabilitation inspections, post repair inspections, and miscellaneous design services.

Load Rating Analysis of Bridge No. 860213 (I-95 over New River South Fork), FDOT District 4, FL
Senior Structural Engineer. Jian was responsible for the load rating analysis of the two 15-span parallel bridges by the LRFR method. The bridge superstructure is a pre-stressed concrete multi-beam system with a deck width of 44'-0". The three main spans consist of two side spans with cantilevers and a drop-in span in the middle, configured as 100ft, 25ft+100ft+25ft, 100ft. The side span beams were constructed using precast pre-stressed segments having varied depths and then spliced with C-I-P concrete. The three-span continuous spans with hinges were analyzed using CSiBridge program (SAP2000) and load rated in conjunction with MathCad and Excel calculation sheets. The rest of the spans were load rated using CONSPAN Bridge Rating Program.

Load Rating Analysis of Bridge M at Palm Beach International Airport Interchange, FDOT District 4, Palm Beach, FL
Senior Structural Engineer. Jian led the load rating analysis of Bridge M at the I-95/Palm Beach International Airport Interchange. Bridge M consists of three units (Units 1, 2 and 3) with a total of 12 spans. Unit 1 is an eight-span

continuous, single box segmental concrete unit built using balanced cantilever construction. Unit 2 is a two-span continuous, single box post-tensioned concrete unit built using cast-in-place construction on falsework. Unit 3 is a two-span continuous, twin-box segmental concrete unit built using balanced construction. The twin box girders are connected by a cast-in-place concrete bridge deck. The load rating analysis was based on the FDOT Load Rating Post-Tensioned Concrete Segmental Bridges Manual (LRFR). The load rating analysis includes longitudinal and transverse analyses performed using LARSA 4D program.

Structural Projects Minor Design, FDOT District 6, Districtwide, FL
Senior Engineer. TranSystems was selected for this contract for three cycles to provide support to District 6 for a wide range of engineering and technical services to assist in numerous project-related tasks within the District's work program. Tasks performed included assignments on short notice and with tight schedule. Under this contract, TranSystems also supplied personnel to work at the District's office. Some of the tasks completed included review of Bridge Development Reports and structural plan submittals for all types of category 1 bridges such as Verona Ave Bridge, SR 997 (Krome Ave) bridge, SR 5 over Channel 2 bridge, SR 823 (NW 57th Ave - Red Road) Bridge, SR 112/I-95 bridge widening, SR 953 / Lejeune Rd at Bird R (E/W approaches, and other miscellaneous structures such as mast arms and overhead sign structures.

Bridge Load Ratings, Miami-Dade Expressway Authority, Miami, FL
Senior Structural Engineer. Jian was responsible for the load ratings of more than 60 bridges for the Miami Expressway Authority. The bridge structure types include reinforced concrete slab, prestressed concrete girder, steel plate girder, steel box girder, and integral steel and post-tensioned diaphragms. The load rating analyses were performed by the load factor rating (LFR) and Load and Resistant Factor Rating (LRFR) methods. The analysis programs included Conspan Bridge Rating program, AASHTOWare BrR (VIRTIS) program, MDX software, CSiBridge (SAP2000), and MathCAD calculations.

Minor Misc. Bridge Design FDOT District 2, Districtwide, FL
Senior Structural Engineer. Work included updating a previously completed analysis of deteriorated steel H-piles, scour evaluation, load rating and constructability reviews for repairs at the SR-312 high level bridge in St. Augustine, field testing to determine cable forces, preparing a calibrated 3-D model incorporating original lock-off forces in cables and annual deck survey results and completing a complete load rating for the Dames Point cable stayed bridge, inspection of the thixotropic grout used to fill post tensioning cable ducts for 7 segmental concrete bridges, supervising ultrasonic testing of sheave trunnions at the Main Street vertical lift bridge, a preliminary study to evaluate repair and replacement costs for the SR-105 bridge over Browns Creek, a Phase 3 scour evaluation for SR-105 over Clapboard Creek, and review of gusset plate conditions from inspection reports and recommendations for updating gusset plate ratings.

Bridge Load Ratings, Florida Turnpike Enterprise, FL
Senior Structural Engineer. Jian led the routine update and emergency load ratings of 144 bridges. The bridges were load rated by the LRFR method using Conspan Bridge Rating and AASHTOWare BrR (VIRTIS) programs. When the rating factor for the HL93 loading was below 1.0, the load rating analysis was performed by the Load Factor Rating (LFR) for HS20 design and SU4, C5, and ST5 Florida legal loads. As required, the structural deficiencies and/or damages due to vehicular impacts such as corrosion losses and broken strands were considered in the load ratings. For the emergency load ratings, the rating analysis was completed within the 24-hour window after the rating request. Jian developed a data preparation and processing MathCAD template for streamlining the load rating analysis work.

SR 211 over Ortega River Bridge Rehabilitation and 16 Bridge Load Ratings, FDOT District 2, FL
Senior Structural Engineer. Jian was responsible for the 16 bridge load ratings using the AASHTOWare BrR (VIRTIS). The bridge types ranged from simple span concrete slab, reinforced concrete Tee-Beam, prestressed concrete I-beam and voided slab, reinforced concrete box beam supported by integral diaphragm and single column, and steel simple span multi-beam to continuous stringer/floorbeam/main girder systems. A two-day QA session was performed by the District and presented by our structural load rating team.

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

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DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

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HUANG, JIAN

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Broward County Board of County Commissioners

PNC2119168P1

JEREMY DAVIS, PE, CBI

SR. CERTIFIED BRIDGE INSPECTOR

Jeremy has over 10 years of structural engineering experience with a focus on movable bridge inspections, inspecting structural, electrical, and mechanical elements. Jeremy participated in many TranSystems projects for FDOT, as well as other projects in Florida, New Jersey, New England, and Indiana.

Andrews Avenue Bascule Bridge Rehab CEI, Broward County, Fort Lauderdale, FL
Structural Engineer. TranSystems provided specialty engineering and CEI services for the hydraulic and structural rehabilitation of the Andrews Avenue bascule bridge over the New River in downtown Fort Lauderdale. Jeremy conducted mechanical engineering inspections. Scope of construction included movable bridge rehabilitation, structural concrete, structural steel painting and additional accessory construction activities as defined in the contract plans and specifications.

Master Plan for Citywide Bridges, City of Fort Lauderdale, FL
Structural Engineer. Jeremy was involved with the inspections and preparation of bridge inspection reports for 46 of the City's bridges, including 45 fixed span bridges and one swing bridge. Field inspection included a review of all visible bridge structural elements, above and below water level, and was led by Florida Certified Bridge Inspectors, following FDOT guidance regarding documentation of deficiencies. A report was prepared for each bridge inspected.

HEFT Widening from NW 106 St to I-75, Florida's Turnpike Enterprise, Miramar, FL
Project Engineer. Jeremy was involved with the replacement of parallel bridges over US-27 and the design of other new structures on the project, completed as a subconsultant. New bridges included the mainline bridges in each direction and two direct connect ramps. Bridges consisted of prestressed concrete Florida-I beam superstructures with drilled shaft and concrete pile foundations, as well as widening of one existing bridge to facilitate phased construction and one new temporary detour bridge. These bridges used FIBs on steel pipe pile foundations. Permanent MSE walls were designed, as well as 50+ overhead signs, 15 traffic signal mast arms, and ITS pole foundations.

Asset Management Movable and Fixed Bridges, FDOT District 4 - Ferrovial Services, Inc., FL
Assistant Inspector. Jeremy was part of these structural and mechanical inspections and as a Report Technician for preparation of inspection reports. TranSystems was a subconsultant to Ferrovial for this FDOT District 4 asset management contract, responsible for the inspection and evaluation of 37 bascule bridges with fixed approach spans, 74 fixed bridges, and one tunnel located east of US-1 throughout the District. Inspection of the bascule bridges included structural, mechanical, electrical, and underwater inspections. The bridge inventory includes 14 high-level segmental concrete box girder bridges. Routine inspections, which included underwater inspections, were performed on a biennial basis for all bridges. Inspections of the movable spans portions of the bascule bridges were completed annually. The firm was also on call for emergency inspections, post rehabilitation inspections, post repair inspections, and miscellaneous design services.

SR A1A Dania Beach Boulevard Bascule Bridge Rehabilitation, FDOT District 4, Hollywood, FL
Structural Engineer. Jeremy was part of the rehabilitation of the Dania Beach Bridge over the Intracoastal Waterway. This bridge is a double leaf bascule bridge with Hopkins Frame-mounted machinery. TranSystems provided design, field installation verification and inspection for the replacement of open gearing and motors, as well as the addition of new machinery brakes. The team also provided construction consultation, progress meeting attendance, shop drawing coordination and reviews, RFI processing and response, and providing point of contact for the owner and contractor.

EDUCATION
B.S., Civil Engineering
Florida Atlantic University, 2009

REGISTRATION
Professional Engineer: FL
Certified Bridge Inspector: FL

TRAINING
NHI Safety Inspection of In-Service Bridges
NHI Fracture Critical Inspection Techniques for Steel Bridges
NHI Inspection and Maintenance of Ancillary Structures
Society of Professional Rope Access Technicians (SPRAT) – Level 1 Rope Access Technician
FDOT Intermediate Work Zone Traffic Control
OSHA 10-Hour Construction Safety

YEARS OF EXPERIENCE
12

YEARS WITH FIRM
12

Movable Bridge Load Ratings, FDOT District 4, FL
Structural Engineer. Jeremy performed analysis using computer modeling in STAAD and CONSPAN to load rate 7 bascule bridges in South Florida, accounting for deficiencies noted in recent inspections.

Design Criteria Package for Five Bridges, Miami-Dade County, FL
Project Engineer. TranSystems was responsible for preparation of the Design and Construction Criteria for the Design Criteria packages, which included preliminary permitting contact, preliminary design to prove concepts were constructible and met prescribed criteria, and bid review services through the two step process. Locations investigated included N. Miami Avenue over Little River Canal, SW 42 Avenue over Gables Waterway, Old Cutler Road over C-100 Canal, Old Cutler Road over Black Creek, and SW 152 Street over C-100A Canal. Post-award engineering services were provided during construction at the N. Miami Ave bridge.

Kennedy Space Center Bridge Inspections, Kennedy Space Center, FL
Team Leader and Assistant Inspector. Jeremy was responsible for the structural, mechanical, and electrical components for multiple cycles of inspection of 5 bascule bridges and 3 fixed bridges at the Kennedy Space Center. He performed mechanical and electrical inspections of all 5 bascule bridges and completed load ratings for the bridges for as-inspected conditions, as well as a special analysis and evaluation of one structure for an 80,000 pound propellant tanker.

Miscellaneous Bridge Design/Movable, FDOT District 2, Districtwide, FL
Structural Engineer. Jeremy was a part of the diversified services on a Task Work Order basis as an extension of the District's staff. TWOs included construction documents for crash wall to protect the pile bents of bridges carrying SR 9/I-95 over FECR and field inspection/load rating for a historic truss swing span, including gusset plates. Jeremy performed gusset plate analysis.

Minor Miscellaneous Bridge Design, FDOT District 2, Districtwide, FL
Structural Engineer. TranSystems completed multiple tasks under this contract, including preparation of a detailed 3D model of the Dames Point Bridge main spans to determine cable forces, calibrated using cable lift-off forces from construction, deck surveys, and as-built plans. We completed a load rating of the entire bridge using the model. Jeremy prepared the 3D computer model.

Structural Project Minor Design, FDOT District 6, Districtwide, FL
Structural Engineer. Project tasks included numerous TWOs for the review of plans prepared by others, and providing in-house personnel for shop drawing review, design, and CADD support for the District's own design work. Jeremy worked in-house as structural engineering support staff for shop drawings and plans review.

Local Government Bridge Inspection, FDOT District 6, Districtwide, FL
Engineering Intern and Assistant Inspector. Jeremy was part of the comprehensive structural, mechanical, and electrical inspection services for the routine and fracture critical inspections of 11 swing and bascule bridges located throughout Miami-Dade and Monroe counties as part of the 2007-2009 cycle of the local government bridge inspection program. The local government bridge inspection program is administered by the state and facilitates the inspection of bridges owned by counties, cities, and other local agencies. As part of the inspection program, reports were prepared using the state's Pontis software. Jeremy served as an Assistant Inspector for multiple inspections.

Load Rating Analysis for 50 Bridges, Miami-Dade Expressway Authority, Miami, FL
Structural Engineer. Jeremy performed the initial load rating analysis. TranSystems completed load ratings of more than 50 bridges for the Miami Expressway Authority (MDX). The bridge structure types included reinforced concrete slab, prestressed concrete beam, steel plate girder, steel box girder, and integral steel and post-tensioned end diaphragms. The load rating analyses were performed by the load factor method (LFD) and Load and Resistant Factor Design (LRFD) method. The analysis programs included the Conspan Bridge Rating program for prestressed concrete bridges, the VIRTIS program for reinforced concrete slab bridges, MDX software for steel bridges, and MathCAD calculations for steel and post-tensioned integral end diaphragm.

Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

DAVIS, JEREMY PAUL

714 SW 19 AVE. # 8
DEERFIELD BEACH FL 33441

LICENSE NUMBER: PE80494

EXPIRATION DATE: FEBRUARY 28, 2021

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PNC2119168P1

Broward County Board of County Commissioners

Brian J. Wolfe, P.E.

Principal Engineer and Petrographer

EDUCATION

B.S. of Civil Engineering, 2001, University of Illinois Champaign/Urbana
Danish Technological Institute – Concrete Petrography Training Course

PROFESSIONAL REGISTRATIONS

Professional Engineer, Civil, GA (38133), AL (33292), FL (75795), MS (21218), NC (40227), IL (65887)

PROFESSIONAL MEMBERSHIPS

American Concrete Institute (ACI)
International Concrete Repair Institute (ICRI) (GA Chapter President 2012)
American Society for Testing and Materials (ASTM)
Society of Concrete Petrographers (Voting Member)

PRESENTATIONS & PUBLICATIONS

ACI (Georgia Chapter): Value of Petrography in Concrete Repair (February 2009)
SWRI (Winter Technical Seminar): Value of Petrography in Concrete Restoration (Feb. 2010)
ICRI (Georgia Chapter): Methods for Testing Slab Moisture (October 2010)
ICRI (Georgia Chapter): Restoring Mortar Joints in Historic Buildings (November 2010)
ICRI (Georgia Chapter): Concrete Petrography Case Studies (August 2011)
ASCE and SEI (Georgia Chapters): Value of Petrography in Concrete Repair (September 2013)
Georgia Institute of Technology, Concrete Rehab Course, for Concrete Petrography Lecture
ICRI (Carolinas Chapter): Determining Suitable Repointing Material for Historic Masonry (2016)
Applicator Magazine, "The Value of Petrography in Concrete Restoration" (Summer 2010)

CAREER SUMMARY

Mr. Wolfe joined TEC Services in January of 2005 as a Project Engineer and Concrete Petrographer performing investigations and evaluations of existing structures, structural engineering reviews, materials evaluations, petrographic examinations and structural design. He has performed material evaluations utilizing investigative techniques such as petrographic evaluation, chemical analysis, infrared spectroscopy, x-ray diffraction and physical testing. With TEC Services, Mr. Wolfe has performed structural analysis and design related to rehabilitation of and/or modification to existing concrete, steel, and timber structures. He has analyzed existing structures utilizing three-dimensional computer-modeling techniques to assess structural integrity and recommend action when warranted. Mr. Wolfe has also participated in building and parking deck condition assessments, various forms of data collection, petrographic examinations, concrete materials testing and nondestructive testing. Mr. Wolfe also has experience with the various building codes that are used throughout the United States.

Prior to joining TEC Services, Mr. Wolfe worked for MACTEC Engineering & Consulting, Inc. formerly known as LAW Engineering & Environmental Services, Inc. for 3½ years. With MACTEC Mr. Wolfe performed similar structural and material testing, evaluations and design as described above for TEC Services.

Mr. Wolfe also worked for the Illinois Department of Transportation as an Assistant Engineer performing numerous site observations and recommendations dealing with concrete, steel and asphalt materials. Mr. Wolfe gained extensive experience with the DOT Construction Standards and data collection methods through this position.

SPECIALTY EXPERIENCE

Mr. Wolfe is the resident concrete petrographer for TEC Services. He has performed petrographic evaluations of hardened concrete for the purpose of determining causes of distress, mix design compliance, determination of concrete constituents including proportions, air void parameters and water-cement ratios. He has also utilized concrete petrography to identify and evaluate alkali aggregate reactions, fire damage, corrosion related distress, aggregate popouts, surface delaminations, freeze thaw damage, mix stability, improper finishing, poor curing, delayed ettringite formation, etc. Additional materials evaluated with petrographic techniques include fiber reinforced concrete, plasters, stuccoes, coatings, polymer modified concretes and overlays. Mr. Wolfe has also assigned, performed and reviewed chemical laboratory tests to determine cement content of hardened concrete and soluble salts within the concrete. Mr. Wolfe also performs evaluations of historic mortar for the purpose of determine suitable repair mortars.

Mr. Wolfe has extensive experience in non-destructive testing of structural systems including visual condition assessments, sounding, load tests, ultrasonic testing, impact echo and pachometer (covermeter) testing to locate reinforcing steel. These tests are typically combined with structural analysis and/or materials testing to determine the need for repair or strengthening.

Mr. Wolfe has extensive experience in using a pachometer to successfully detect reinforcing steel and post tensioned strands in concrete beams, columns, walls and slabs. Mr. Wolfe has also used a pachometer to locate vertical, horizontal bed joint and bond beam reinforcing in concrete masonry block walls along with wall ties in multiple wythe brick masonry walls.

Mr. Wolfe also has extensive experience in testing concrete slab moisture content and evaluating adhesion failure of impermeable flooring materials. His testing experience includes performing and evaluating the results of moisture vapor emission (MVE), internal relative humidity (RH) and surface RH tests.

Mr. Wolfe has provided expert testimony and consulting services in projects which have reached litigation. These projects typically involved evaluation of concrete failures or noncompliant issues. His services included preparation of exhibits, assistance during depositions and trial preparation and expert testimony.

Mr. Wolfe has presented the on the topics of petrographic examination, mortar analysis and slab moisture testing for ICRI, ACI, ASCE and SWRI. Mr. Wolfe also had an article published in Applicator Magazine about the value of petrography in concrete restoration.

TECHNICAL PROJECTS

Date	Project Name	Description
Oct 2003	Nashville Train Station	Structural design of elevated exterior plaza.
Oct 2006	Agnes Scott College (Campbell Hall)	Evaluation and repair of corrosion related distress due to the presence of a chloride based accelerator within the concrete.
Mar 2007	Google ATL Facility	Consulting of concrete mix and construction procedures to minimize shrinkage related distress in water cooling tanks.
Aug 2007	Wrigley's Gum Plant	Evaluation of delaminating cementitious overlay.
Dec 2008	Front Range College	Delayed ettringite formation deteriorating precast double tees.
July 2011	Tensar Warehouse	Evaluation of fire damage to warehouse concrete slab on grade.
Jan 2012	NY Subway Tunnel	Evaluation of overhead spall of shotcrete material.
Aug 2012	Atlanta Beltline	Concrete slab surface delaminations from trapped bleed water.
Nov 2014	Interstate 40	ASR of pavement resulted in significant distress
Dec 2015	Precast Tank Lid	Delayed ettringite formations
Mar 2016	UGA Sanford Bridge	Evaluation of deteriorated concrete bridge deck adjacent to University of Georgia Sanford Stadium

Ron DeSantis, Governor

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FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

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PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

WOLFE, BRIAN JAMES

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LAWRENCEVILLE GA 30046

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EXPIRATION DATE: FEBRUARY 28, 2021

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County Commissioners

SHAWN MCCORMICK
Testing, Engineering & Consulting Services Inc.
235 Buford Drive
Lawrenceville, GA 30045
Phone: 678-878-9253
Email: smccormick@tecservices.com

PROFESSIONAL EXPERIENCE

TESTING, ENGINEERING & CONSULTING SERVICES – Lawrenceville, GA **2004-Present**
President and Laboratory Principal – Construction Materials

Serves as a Laboratory Principal of an AASHTO R18 and ISO 17025 accredited Testing firm, which specializes in facilities engineering, restoration and repair design, and field/laboratory construction materials testing.

Current ASTM Executive Committee officer for C09 on *Concrete and Concrete Aggregates* and C01 on *Cement,* Sub-committee Chairman for C09.62 *Abrasion Testing*, Vice-committee Chairman for C01.29 *Sulfate Resistance* and Task Committee Chairman for ASTM C928 *Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs*. Past president of Georgia ACI local chapter. Experiences include attending Georgia Chapter of American Concrete Institute (ACI) monthly meetings, the bi-annual American Society for Testing and Materials meetings (ASTM), the annual National Transportation Product Evaluation Program (NTPEP) meeting and the bi-annual International Concrete Repair Institute (ICRI). Mr. McCormick has written precision and bias statements for ASTM, organized and reported round robin testing for various ASTM sub-committees, and has help author several ASTM specifications and guidelines. Mr. McCormick is currently working with others to develop ASTM testing procedures for anti-washout, abrasion, and anti-segregation for concrete and cementitious based products. Mr. McCormick also serves as an examiner for ACI for certifications in Laboratory Technician Grade I & II, Aggregate Technician Level I & II, Strength Technician and Field Technician.

Performs concrete mix designs, physical, chemical and analytical testing of concrete, cement, aggregates, pozzolans, admixtures, epoxies, coatings, metals, and other constructions materials in accordance with the required ICC-ES, ASTM and AASHTO test methods and guidelines. Manages and trains technicians in laboratory and field testing and hires new technicians. Responsibilities include maintaining the quality assurance and quality control program, developing and maintaining client relations, marketing, managing multiple high profile projects, and cost estimates.

Law Engineering Inc. (Now Wood Group) – Atlanta, GA **1985 to 2004**
Laboratory Manager, Principal Technician and Project Manager – Construction Materials

Responsibilities included involvement in Law Engineering's asbestos program providing project management, work observation and documentation of asbestos removal, air monitoring during asbestos abatement, performing asbestos investigations, and asbestos consulting.

In 1997 Mr. McCormick was transferred to the Construction Materials Laboratory. His new responsibilities included supervision and management of the Cement, Concrete and Constructions Material Testing Labs. The labs performed testing of concrete, fiber reinforced concrete, cements, aggregates, fly ashes, admixtures, concrete coatings and other cement and concrete materials. He developed several new clients and obtained large annual contracts. Under Mr. McCormick supervision, the Cement and Concrete Laboratories grew from a two to six employees and profits grew by over 50%. Responsibilities included: marketing, billing, project management, equipment maintenance and calibrations, keeping the laboratory current in the CCRL proficiency program, and maintaining accreditation in AASHTO and AMRL.

CERTIFICATIONS

American Concrete Institute Laboratory Technician Grade I
American Concrete Institute Laboratory Technician Level I
American Concrete Institute Laboratory Technician Grade II
American Concrete Institute Strength Testing Technician
American Concrete Institute Aggregate Testing Technician Level I
American Concrete Institute Field Testing Technician
Georgia Concrete and Products Association Structural Masonry Specialist

PROFESSIONAL AFFILIATIONS

Member of American Concrete Institute (ACI)
Past President of Georgia Chapter of American Concrete Institute (ACI)
Past Vice President of Georgia Chapter of American Concrete Institute (ACI)
Member of the American Society for Testing and Materials (ASTM)
Member of the International Concrete Repair Institute (ICRI)

ASTM

Executive Committee 2014-Present	Committee C01	Cement, Lime Gypsum
	Committee C01.10	Hydraulic Cements
	Committee C01.13	Special Cements
	Committee C01.22	Workability
Vice-Committee Chair 2017-Present	Committee C01.29	Sulfate Resistance
	Committee C01.30	Time of Set
Executive Committee 2014-Present	Committee C09	Concrete and Concrete Aggregates
	Committee C09.21	Lightweight Aggregates
	Committee C09.22	Materials Applied to Concrete
	Committee C09.23	Chemical Admixtures
	Committee C09.23.04	Durability Enhancing Admixtures
	Committee C09.23.06	Cold Weather Admixtures
	Committee C09.23.07	Anti-Washout Admixtures
	Committee C09.40	Ready-Mixed Concrete
	Committee C09.42	Fiber-Reinforced Concrete
	Committee C09.43	Section on Self Leveling Materials
	Committee C09.43	Sections C381, C928, C1107
Task Group Chair 2004-Present	ASTM C928	Pre-Packaged Rapid Set Materials
	Committee C09.46	Shotcrete
	Committee C09.47	Self-Consolidating Concrete
	Committee C09.49	Pervious Concrete
	Committee C09.50	Alkali Aggregate Reactions
Subcommittee Chairman 2015- Present	Committee C09.62	Abrasion Testing
	Committee C09.98	Evaluation of Laboratories
	Committee C12	Mortars and Grouts for Masonry
	Committee C15	Manufactured Masonry Units
	Committee C15.03	Concrete Masonry Units
	Committee C15.11	Stone Masonry Veneer
	Committee F08	Sports Equipment and Facilities
Technical Representative	Committee F08.18	Treestands

ICRI

	Committee 320	Concrete Repair Materials
Secretary 2016-Present	Committee 310	Surface Preparation
	Committee 110	Guide Specifications
	Committee 710-D	Protective Polymer Flooring Sys.
	Committee 710-E	Grouting

AREAS OF TECHNICAL EXPERIENCE

Failure analysis and forensic: Testing using non-destructive evaluation/petrographic analysis

Metals & plastics: Mechanical properties, shear, flexural, tensile, direct tensile embedment, strain gages, field data acquisition systems, PT cable tension tests, and anchor systems

Coatings: epoxy based, organic, thermal insulating, stucco, polymer, wax emulsions, and Urethanes

Aggregates: Lightweight, normal, and heavy weight, fine, ASR, dimension stone

Admixtures: Experience utilizing and designing with all types of admixtures A through F and Type S, viscosity modifiers, shrinkage reducing, ASR reducing, redisperable polymers, latex, dry admixtures, corrosion inhibitors, anti-washout and mix stabilizers

Cements/Supplementary Materials: slag, fly ash, metakaolin, portland cement, calcium aluminate cement, calcium carbonate, glass, masonry cements, sulfur aluminate cements, and wollastonite

Concrete Mix Design/Optimization: Tertiary concrete mix design experience utilizing numerous admixtures, slabs on grade, pavement, latex concrete– polymer modified, fiber reinforced concrete, shotcrete, pre-cast, GFRC, lightweight/cellular, rapid setting concrete, overlays, EPS foam coats, stone veneer, roller compacted, and pervious

Fiber Reinforcement: Macro/Micro synthetic, steel, glass, blast containment, extensive work in evaluation of technical data and design of FRC and shotcrete, fiber product development, and residual analysis

Repair Products/Mortars: Task Committee Chairman for ASTM C928, self-leveling under-laments, rapid setting patch materials, non-shrink grouts, masonry mortars, masonry block, extensive experience with DOT/ASHTTO requirements for rapid setting repair materials, and product development

TECHNICAL PROJECTS

Savannah River Site (MOX)	Concrete design for Nuclear Waste Storage, Testing of Cement, Pozzolons and Aggregates
Oak Ridge Nuclear Site	Concrete design for Nuclear Waste Long Term Storage Vault
Cherry Hill	Testing of Cement, Pozzolons and Aggregates
Plant Vogle	Concrete Design for Reactor Repair
Atlanta Airport	Concrete Designs for Runway, Taxiways and Rapid Set Repairs
Archer Western	Concrete Pavement Designs for I75 & I85
Apac	Concrete Pavement Designs for Multiple Roads and Highways
McCarthy	Concrete Pavement Designs for Alabama Hwy 62
Union Pacific	Testing of Freeze Thaw Damage to Rail Road Ties and Consulting for Quality Control of Concrete Designs
Tensar	Development of Cementitious Product Line for Asphalt Overlays
U.S. Embassy, Gabon, Africa	Concrete Mix Design and Testing
NY Eastside Access Project	Shotcrete Mix Design and QA Testing
NY 2nd Avenue Subway	Cast in Place FRC Mix Pre-Construction Testing
NY No. 7 Line	Shotcrete QA
NY Freedom Towers	Preconstruction Testing
South River Tunnel, Atlanta, GA	Shotcrete Evaluation and QA Testing
South Cobb Tunnel, Atlanta, GA	Shotcrete Evaluation and QA Testing
Niagra Falls Tunnel Project	Cast in Place FRC Mix Pre-Construction Testing

JAMES G. MCCANTS III (TREY)
Testing, Engineering & Consulting Services Inc.
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Lawrenceville, GA 30045
Phone: 678-878-9253
Email: tmccants@tecservices.com

EDUCATION

Bachelor of Science, Chemistry – Clemson University **2006**

CERTIFICATIONS

American Concrete Institute Laboratory Technician Level I
American Concrete Institute Laboratory Technician Level II
American Concrete Institute Strength Testing Technician
American Concrete Institute Aggregate Testing Technician Level I
American Concrete Institute Aggregate Testing Technician Level II
American Concrete Institute Field Testing Technician
American Concrete Institute/CRSI Adhesive Anchor Installer

PROFESSIONAL AFFILIATIONS

Member of the American Chemical Society (ACS)
Member of American Concrete Institute (ACI)
Member of the American Society for Testing and Materials (ASTM)

Committee C01	Cement, Lime Gypsum	
Committee C09	Concrete and Concrete Aggregates	
Committee C09.22	Materials applied to New Concrete Surfaces	
Committee C09.23	Chemical Admixtures	
Committee C09.25	Organic Bonding Materials	**Chairman 2017 – Present**
Committee C09.42	Fiber-Reinforced Concrete	**Chairman 2011 – Present**
ASTM C1609	Flexural Performance	**Chairman 2009 – Present**
Committee C09.43	Section on Self Leveling Materials	
Committee C09.43	Sections C381, C928, C1107	
Committee C09.46	Shotcrete	
Committee C09.62	Abrasion Testing	
Committee F08.18	Treestands	**Secretary 2016 - Present**

Fiber Reinforced Concrete Association (FRCA)
Boy Scouts of America – Eagle Scout

PROFESSIONAL EXPERIENCE

TESTING, ENGINEERING & CONSULTING SERVICES – Lawrenceville, GA **2006-Present**
Chemist, Laboratory Manager – Construction Materials

Performs physical and analytical testing of concrete, cement, pozzolans, aggregates, pozzolans, admixtures, epoxies, coatings, metals, and other constructions materials in accordance with the required ASTM and AASHTO guidelines. Manages and trains technicians in the laboratory and field testing; hiring of new technicians. Charged with maintaining client relations, marketing, managing multiple high profile projects, and cost estimates. Laboratory is AASHTO R18, ISO 17025, and Army Corp of Engineers accredited.

Performs tension/compression testing using servo-controlled, hydraulic closed looped Instron system
Test procedure design for Instron systems, Fabrication of testing apparatuses and systems. Utilization of linear variable displacement transducers, extensometers, and strain gauges. Research, design, and development in construction materials

AMERICAN CONCRETE INSTITUTE (ACI) – Georgia **2006-Present**
Examiner

Laboratory Technician Grade I & II, Aggregate Technician Level I & II, Strength Technician, Field Technician, Adhesive Anchor Installer

AREAS OF TECHNICAL EXPERIENCE

Non-Destructive/Chemical Analysis

Impact Echo, Pulse Velocity, Ultrasonic Thickness, Microscopic Analysis, Spectrophotometry, UV-VIS, Titrations, Conductivity, FTIR, XRF, OES Spectroscopy

Metals/Anchors/Plastics/Thermoplastics

Mechanical/Chemical Properties, Shear, Flexural, Tensile, Direct Tensile Embedment, Strain Gages, Field data acquisition systems, PT Cable Tension Tests, Anchor Systems Testing, Creep Testing, Rebar

Coatings/Epoxies/Sealants

Epoxy based, Organic, Thermal Insulating, Stucco, Polymer, Wax Emulsions, MMA, Urethanes, FiberReinforced Polymer Wrap, Waterproofing Membranes, Elastomerics, Sealants, Color Analysis, Flash Point, UV activated, Adhesive anchors, Paints, Sealers, EIFS Systems

Aggregates

Lightweight, normal, and heavy weight, fine, ASR, dimension stone

Admixtures

Experience utilizing and designing with all types of admixtures A through F, Viscosity Modifiers, Shrinkage reducing, Lithium, ASR Reducing, Redisperable Polymers, Latex, Dry Admixtures, Corrosion Inhibitors, Anti-Washout

Cements/Supplementary Materials

Slag, Fly Ash, Metakaolin, Portland, Calcium Aluminates, Calcium Carbonate, Glass, Masonry Cements, Sulphoaluminates, Wollastonite

Concrete Mix Design/Optimization

Tertiary concrete mix design experience utilizing numerous admixtures, Slabs on Grade, Pavement, Latex Concrete– Polymer Modified, Fiber Reinforced Concrete, Shotcrete, Pre-Cast, GFRC, Lightweight/Cellular, Calcium Aluminate Concrete, Overlays, EPS Foam Coats, Stone Veneer, Roller Compacted, Pervious, Thermal Mass Concrete, Blast containment

Fiber Reinforcement – Chair of ASTM C09.42 Subcommittee on Fiber Reinforced Concrete

Macro/Micro Synthetic, Steel, Glass, Carbon, Blast Containment, Extensive work in evaluation of technical data and design of FRC and Shotcrete, Textile Tensile, Residual Analysis

Repair Products/Mortars

Product Design, Self-Leveling Underlayments, Rapid Setting Patch Materials, Non-Shrink Grouts, Masonry Mortars, Extensive experience with DOT/ASHTTO requirements

Products Testing

Tools, Hardware, Webbing, Fall Arrest Harnesses, Treestands, Septic Tanks, Roof Panels, Encased Pipe Sections, Ladder Safety Devices, Manhole Covers, Shelf Load Tests, Full-Scale Load Tests

Trade Skills

Data acquisition systems, Electronics, Hydraulics, Machining (mill/lathe), Welding, Carpentry, Mechanics, Plumbing

TECHNICAL PROJECTS

U.S. Dept of Energy, Wind Turbines	FRC Foundation Design and System Evaluation
U.S. Embassy, Gabon, Africa	Concrete Mix Design and Testing
NY Eastside Access Project	Shotcrete Mix Design and QA Testing
NY Eastside Access Project	Shotcrete Failure Analysis
NY 86th Street Station	Shotcrete QA
NY 2nd Avenue Subway	Cast in Place FRC Mix Pre-Construction Testing
NY No. 7 Line	Shotcrete QA
NY Freedom Towers	Preconstruction Testing
NY Brooklyn Bridge Overlay	Preconstruction Design & Testing
Dulles Corridor Tunnel, Virginia	Shotcrete Mix Design and QA Testing
Lake Mead Tunnel, Las Vegas, NV	Shotcrete Evaluation and QA Testing
South River Tunnel, Atlanta, GA	Shotcrete Evaluation and QA Testing
South Cobb Tunnel, Atlanta, GA	Shotcrete Evaluation and QA Testing
Niagara Falls Tunnel Project	Cast in Place FRC Mix Pre-Construction Testing
Euclid Creek Tunnel, Cleveland, OH	Precast FRC Tunnel Segments
Mercedes Benz Plant, Birmingham, AL	Preconstruction Mix Design Evaluation - FRC
Volkswagen Plant, Chattanooga, TN	Preconstruction Mix Design Evaluation – FRC
Bridgestone Plant, Aiken, SC	Preconstruction Mix Design Evaluation – FRC
Botanical Gardens Scaffold Collapse, Atlanta, GA	Metals Evaluation for OSHA
Digester Tank Collapse, City of Atlanta, GA	Metals Evaluation
Power Facility – Turbine Blast Containment, TN	FRC Pre-Construction QA Testing
Bridgestone Plant, Aiken, SC	Preconstruction Testing and QA Testing – FRC
Blue Plains Tunnel, MD	Precast FRC Tunnel Segments

Mechelle Kerns, PhD, RPA

Principal Investigator

Hollywood, Florida Office

Mechelle Kerns, PhD, RPA, has more than 20 years of experience as an archaeologist and historian specializing in cultural resource management. She joined SEARCH in 2018 as Principal Investigator with the Transportation group in the Hollywood, Florida office. Dr. Kerns has extensive experience with artifact identification, analysis, data collection, and preparation for curation, research design development, report writing, public outreach, and education programs, as well as supervisory experience managing staff for projects in both terrestrial and underwater archaeology, fieldwork, and laboratory processing of artifacts. Dr. Kerns has directed archaeological fieldwork for all phases of investigation on historic, maritime, and prehistoric sites in Florida, Washington DC, Maryland, West Virginia, Delaware, Virginia, Wisconsin, and Mississippi, and she worked on underwater sites in Maryland, Florida, and New York for both private and public sector clients. She has experience and training in Sections 106 and 110 of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA). Dr. Kerns is listed on the Register of Professional Archaeologists (RPA), and she exceeds the qualifications set forth by the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (48 FR 44716).

EDUCATION

PhD	2004	Maritime Archaeology and History. University of St. Andrews.
MA	1999	Historical Studies and Public History. University of Maryland Baltimore County.
BA	1996	Ancient Studies. University of Maryland Baltimore County.

RESEARCH SPECIALIZATIONS

- Artifact Identification & Analysis
- Data Collection & Analysis
- Public Outreach & Presentations
- Land Records & Cadastral Analysis
- Geospatial Analysis & GIS
- Primary/Historic Document Research & Transcription
- Maritime History & Archaeology
- Trade and Transportation

PROFESSIONAL EXPERIENCE

2018–present Principal Investigator & Administrator of the Hollywood Office for SEARCH

2004–present Adjunct Professor, University of Maryland University College, The Undergraduate School, Liberal Arts & Communications, History Program

2011–2018 Adjunct Faculty, United States Naval Academy, Division of Humanities and Social Sciences, History Department

2013–2014 Adjunct Faculty and Archaeologist in Residence, University of Baltimore

2012–2013 Assistant Curator, United States Naval Academy, USNA Museum

2010–2018 Principal Archaeologist, Kerns CRM Consultants, LLC

2007–2010 Senior Archaeologist and Historian, URS Corporation

2005–2007 Senior Archaeologist and Historian, Aarcher, Inc.

1997–2005 Staff Archaeologist and Historian, Anne Arundel County Planning and Zoning Office of Environmental and Cultural Resources

PROFESSIONAL REGISTRATIONS AND ASSOCIATIONS

Archeology Society of Maryland (President of the Anne Arundel County Chapter, 2006–2012)

Register of Professional Archaeologists

SPECIALIZED TRAINING

Hazardous Waste Site Worker (40 hour) OSHA 29CFR1910.120 (e)(3)(i) (5/2017)
National Preservation Institute, *Section 106: A Review for Experience Practitioners* (9/2008)
Advisory Council on Historic Preservation: The Section 106 Essentials (2006)
DAN *Oxygen First Aid for Scuba Diving Injuries* (5/2009)
Maryland Department of Natural Resources, *Maryland Boaters Course* (6/2009)
PADI *Rescue Diver* (5/2009)
Dive Master (IANTD) (12/2010) and Nitrox Diver (IANTD) (12/2010)

SELECT PROJECT EXPERIENCE

2019

Principal Investigator, Data Recovery Plan for Phase III Archaeological Site Mitigation at 8SM00933. CR 470 From CR 527 to Florida's Turnpike, Sumter and Lake Counties, Florida. FDOT District 5.

Data Recovery Plan for Phase III Archaeological Site Mitigation at 8SM00933 Sumter County, Florida. US 301/State Road 35 from County Road 470 West to SR 44. FODT District 5.

Cultural Resource Assessment Survey of Lowson Boulevard/SW 10th Street from Military Trail to SE 6th Avenue/US 1 in the City of Delray Beach, Palm Beach County, Florida. Kimley-Horn & Associates, Inc., The City of Delray Beach, Florida, and FDOT, District 4

Cultural Resource Assessment for the Alley Enhancement Project in the City of Delray Beach, Palm Beach County, Florida. Mathews Consulting and the City of Delray Beach, Florida.

2018

Principal Investigator, Archaeological monitoring and reporting for various highway construction projects throughout Florida Department of Transportation, District 6 (Miami-Dade and Monroe Counties) under a five-year IDIQ contact with, FDOT D6.

Phase I Archaeological Survey of the Emory Canal Trail, Osceola County, FL. FDOT District 4. Hurricane Matthew Emergency Repairs and Restoration of SR-A1A south of Sebastian Inlet, Indian River County, Florida. FDOT District 4.

Cultural Resource Desktop Analysis for the Beach Corridor Rapid Transit Project (Smart Plan) Study, Miami Dade County, Florida. Department of Transportation and Public Works, Miami Dade County, Florida.

2017

Archaeologist, Archaeological Monitoring for the Bingham Road Project Area, NPS Rock Creek Park, Washington, DC. Conducted for National Park Service and DC Water Authority, JMT.

Principal Archaeologist, Phase Ia Cultural Resources Assessment for the Richfield Farm Solar Site Hurlock, Dorchester County, Maryland. Conducted for Invenergy, LLC.

2016

Principal Archaeologist, Archaeological Monitoring for the Annapolis City Dock Bulkhead Repair Project, Annapolis, Maryland. Conducted for City of Annapolis Department of Public Works Engineering and Construction Division.

Principal Archaeologist, Phase I/II Archaeological Investigation and Evaluation of the Birely Tannery Property (18AN575) Frederick, Maryland. Conducted for Kann Partners.

2015

Principal Archaeologist, Clifton Mansion (18BC178) Phase III Data Recovery, Basement Level. Conducted for Clifton Mansion & Civic Works.

2014

Principal Archaeologist, Phase I Testing: Bloomfield Site at 8956 Walter Martz Road, Frederick County, Frederick, Maryland. Conducted for Aarcher, Inc.

2013

Principal Archaeologist, Clifton Mansion (18BC178) Phase I Archaeological Testing: Geothermal Field, Porch Foundation and Elevator Installation Project Areas. Conducted for Clifton Mansion & Civic Works.

Principal Archaeologist, Cambridge Solar Project: Phase I Archaeological Investigation of the Adams Farm at 4919 Bucktown Road, Cambridge, Dorchester County, Maryland. Conducted for OneEnergy Renewables.

2011

Principal Archaeologist, Survey of Dayton Manor Staff Housing MDC Brooklyn. Conducted for J.C. Chang & Associates, Inc. and US Department of Justice, Federal Bureau of Prisons.

Principal Archaeologist, Survey of Staff Housing, US Penitentiary Atlanta, Georgia. Conducted for J.C. Chang & Associates, Inc. and US Department of Justice, Federal Bureau of Prisons, Washington, DC.

Jason F. Newton, MA, MLIS

Architectural Historian

Miami, Florida Office

Jason F. Newton, MA, MLIS, has more than 11 years of experience with architectural history and cultural resource management, and joined SEARCH in 2019 as an Architectural Historian. Mr. Newton has experience conducting historic resource evaluation, National Register of Historic Places (NRHP) nominations, Section 106 Review, and architectural survey throughout Florida, particularly south Florida. Mr. Newton received his bachelor's degree in History in 2004 from Tarleton State University, his master's degree in History in 2007 from Texas State University, and his master's degree in Library and Information Studies in 2015 from the University of South Florida. His qualifications meet those set forth by the Secretary of the Interior's *Standards and Guidelines for Architectural History and History (36 CFR Part 61).*

EDUCATION

MLIS	2015	Library and Information Studies. University of South Florida.
MA	2007	History. Texas State University.
BA	2004	History. Tarleton State University.

RESEARCH SPECIALIZATIONS

Section 106 Documentation
Determination of Effects
Historic American Buildings Survey (HABS) Documentation
National Register Nominations

PROFESSIONAL EXPERIENCE

2019–Present	Architectural Historian, SEARCH
2009–2018	Architectural Historian, Janus Research
2008–2009	Archaeological Field Technician, SWCA Environmental Consultants and William Self Associates
2005–2007	Instructional Assistant, Texas State University Department of History

PROFESSIONAL REGISTRATIONS AND ASSOCIATIONS

Phi Alpha Theta (National History Honor Society)
Beta Phi Mu (International Library and Information Science Honor Society)

SELECT PROJECT EXPERIENCE

2017

Architectural Historian. Cultural Resources Desktop Analysis and Field Review for TWO #22 SR 5/US 1/S. Dixie Highway at Granada Boulevard, Miami-Dade County, Florida. Conducted for FDOT, District 6.

2016

Architectural Historian. Cultural Resource Assessment Survey Reevaluation for the Relocation and Reconstruction of the South Florida Water Management District Drainage Control Structure S-194 at the C-102 Canal in unincorporated Miami-Dade County, Florida. Conducted for FDOT, District 6.

2015

Architectural Historian. Desktop Analysis and Field Reconnaissance for SR 5/US 1/Biscayne Boulevard from SE 3rd Avenue to North of SE 2nd Street, Miami-Dade County. Conducted for FDOT, District 6.

2014

Architectural Historian. Cultural Resource Assessment Survey Reevaluation for the State Road 836/ I-395 Reconstruction Project Development and Environment Study from West of I-95 to the MacArthur Causeway Bridge. Conducted for FDOT, District 6.

2019

Architectural Historian. Cultural Resource Assessment Survey of Lowson Blvd/SW 10th Street from Military trail to SE 6th Avenue, City of Delray Beach, Palm Beach County, Florida. Conducted for FDOT, District 4.

2019

Architectural Historian. Cultural Resource Assessment for the Alley Enhancement Project in the City of Delray Beach, Palm Beach County, Florida. Conducted for the City of Delray Beach.

2019

Architectural Historian. Cultural Resource Reconnaissance Survey for the SR 909/W. Dixie Highway/NE 22nd Avenue from SR 915/NE 6th Avenue to NE 134th Street Beautification Grant Project, Miami-Dade County, Florida. Conducted for FDOT, District 6.

STONER & ASSOCIATES, Inc.
SURVEYORS - MAPPERS

4341 S.W. 62nd Avenue, Davie, Florida 33314
T: (954) 585-0997 • F: (954) 585-3927 • www.stonersurveyors.com

James D. Stoner, P.S.M.
President (Survey & Mapping)

Professional Profile

Mr. Stoner is a second generation Land Surveyor, with over forty years of surveying experience in South Florida. He began his surveying career at Williams, Hatfield, & Stoner, Inc. working from the bottom as a Rodman, all the way up to Vice President of the Surveying Department.

Mr. Stoner founded Stoner & Associates, Inc. in 1988, based on the philosophy that attention to detail and quality work would create a successful firm. He manages all aspects of the firm's growth and development.

Mr. Stoner has supervised both small and large scale surveying projects. His firm has successfully completed numerous roadway and other various projects, whil
clients and consultants.

Education

Associates of Science in Land Surveying
Palm Beach Community College in 1979

Professional Registrations

State of Florida Professional Surveyor and Mapper
License Number LS4039

Professional Affiliations

Florida Surveying and Mapping Society
Florida Surveying and Mapping Society – Broward Chapter
American Congress on Surveying and Mapping
Leadership Broward

9/23/2019

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500
800HELPFLA(435-7352) or (850) 488-2221

February 15, 2019

JAMES D STONER
STONER & ASSOCIATES INC4341 SW 62ND AVE
DAVIE, FL 33314-3426

SUBJECT: Professional Surveyor and Mapper License # LS4039

Your application / renewal as a professional surveyor and mapper as required by Chapter 472, Florida Statutes, has been received and processed.

The license appears below and is valid through February 28, 2021.

You are required to keep your information with the Board current. Please visit our website at www.800helpfla.com/psm to create your online account. If you have already created your online account, you can use the website to maintain your license. You can also find other valuable information on the website.

If you have any questions, please do not hesitate to call the Division of Consumer Services, Board of Professional Surveyors and Mappers at 800-435-7352 or 850-488-2221.

Detach Here

Florida Department of Agriculture and Consumer Services
Board of Professional Surveyors and Mappers

LS4039

Professional Surveyor and Mapper
JAMES D STONER

IS LICENSED under the provisions of Ch. 472 FS
Expiration date: February 28, 2021

Broward County Board of County Commissioners

BidSync

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Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: **LS4039**
Expiration Date February 28, 2021

Professional Surveyor and Mapper License

Under the provisions of Chapter 472, Florida Statutes

JAMES D STONER
STONER & ASSOCIATES INC4341 SW 62ND AVE
DAVIE, FL 33314-3426

Nicole Fried

NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

PNC2119168P1

Compass Point surveyors

SCOTT A. REID, P.S.M.
Project Manager

PROFESSIONAL REGISTRATION

Professional Surveyor and Mapper, Florida License No. 6258 (2001)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- Florida Surveying and Mapping Society
- Broward County Chapter of the FSMS (Past President)

EDUCATION

Fayetteville High School, Fayetteville, WVI. College Preparatory Classes, graduated 1988.

University of Florida, Gainesville, Fl. Materials Engineering/Surveying courses. Graduated with a BS degree from the Departments of Geomatics (Surveying), College of Civil Engineering in 1996.

Land Surveyors Continuing Education
24 hours of CEU with 2 year renewal period pertaining to Florida Minimum Technical Standards, State Statutes, Ethics, Laws and Principles.

SUMMARY OF EXPERIENCE

Mr. Reid has been active in Surveying for over 22 years and has been involved with all levels of surveying from an instrument man on a field crew to the director of Surveying for a prominent Engineering and Land Surveying Company. His background includes training in everything from Global Positioning Systems (GPS), Geographic Information Systems (GIS), Remote Sensing, Photogrammetry, Business and Surveying Law, courses in Platting and Sectional land history and retracement to Coastal and Freshwater Mean High Water studies. In the course of his professional experience, Mr. Reid has worked on a variety of different aspects of Surveying to include GPS and GIS projects, Florida Department of Transportation projects, Commercial, Residential and Government Subdivisions, Federal Emergency Management Agency Elevation Certificates and Letters of Map Amendments, Boundary and Title Surveys (to include ALTA Surveys), Subsurface Utility Locations, Condominium Documents and other types of Surveys for the Coast Guard, Veterans Administration, Lake Worth Water Drainage District, South Florida Water Management District, Florida Department of Environmental Protection, Attorneys or just the general public. Mr. Reid has even been involved with recording and reporting field measurements to the Guinness Book of World Records. His leadership roles include being an Officer in the United States Army, President of the Broward Florida Survey and Mapping Society Chapter, his participation in the Florida Atlantic University Surveying Curriculum Committee and various other positions within Surveying firms. This extensive experience within the Survey Profession combining a diversity of practical experience with a great deal of theoretical academic training is what separates Mr. Reid from many other professionals in his field. In all his years of service, his highest goals have always remained quality of work and client satisfaction.

3195 N. Powerline Road
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Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500
800HELPFLA(435-7352) or (850) 488-2221

February 21, 2019

SCOTT A REID
3195 N POWERLINE RD STE 112
POMPANO BEACH, FL 33069-1052

Detach Here

SUBJECT: Professional Surveyor and Mapper License # LS6258

Your application / renewal as a professional surveyor and mapper as required by Chapter 472, Florida Statutes, has been received and processed.

The license appears below and is valid through February 28, 2021.

You are required to keep your information with the Board current. Please visit our website at www.800helpfla.com/psm to create your online account. If you have already created your online account, you can use the website to maintain your license. You can also find other valuable information on the website.

If you have any questions, please do not hesitate to call the Division of Consumer Services, Board of Professional Surveyors and Mappers at 800-435-7352 or 850-488-2221.

Florida Department of Agriculture and Consumer Services
Board of Professional Surveyors and Mappers

LS6258

Professional Surveyor and Mapper
SCOTT A REID

IS LICENSED under the provisions of Ch. 472 FS
Expiration date: February 28, 2021

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Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: **LS6258**
Expiration Date February 28, 2021

Professional Surveyor and Mapper License

Under the provisions of Chapter 472, Florida Statutes

SCOTT A REID
3195 N POWERLINE RD STE 112
POMPANO BEACH, FL 33069-1052

Nicole Fried

NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

Compass Point surveyors

BENJAMIN R. WISER
Vice President, Project Manager

EDUCATION

Lecanto High School, Lecanto, FL
Graduated (1993)

University of Florida,
Florida - Continuing Education
Courses Leading to a Degree in
Geomatics (2009 – 2015)
And Florida Registration as a
Professional Surveyor and Mapper.

SUMMARY OF EXPERIENCE

Mr. Wiser's survey experience spans more than nineteen (19) years in the State of Florida including all levels of involvement in field activities as well as office and management responsibilities. He has provided surveying and mapping services on many high profile state, county, municipal and private projects such as US Air Force Bases, international airports, sports stadiums, power, water and reclaimed water plants, interstate heavy highways, transmission mains, high-rise/commercial buildings and subdivisions performing construction layout and as-built surveys along with boundary, topographic and hydrographic surveys for design. He has extensive experience in the use of Global Positioning Systems (GPS) and utilizes this experience in all aspects of surveying including 3D machine control, construction lay-out/as-builts and topographic surveys for design. As Vice President of Compass Point Surveyors, PL, Mr. Wiser is responsible for contract administration, quality control and technical procedures in the production of survey projects which include client relations, estimating, project tracking and crew efficiency. Mr. Wiser is committed to providing the highest quality of professional service in order to meet our client's needs.

2101 N.W. 33rd Street
Suite 100
Pompano Beach, FL 33069
Office 954.332.8181
www.cp-surveyors.com

OTTO LEGON

SENIOR ASPHALT PLANT INSPECTOR
16 Years of Experience

RELIABLE IN-DEPTH SOLUTIONS
Geotechnical Engineering | Material Testing | Inspection Services

PROFESSIONAL QUALIFICATIONS

PROFESSIONAL ORGANIZATION AND REGISTRATION

- TIN # [redacted]
- CTQP Asphalt Plant Technician – Level I and II
- CTQP Asphalt Paving – Level I and II
- CTQP Pile Driving Inspection
- CTQP Drilled Shaft Inspection
- CTQP Earthwork Construction Inspection – Level I and II
- CTQP Concrete Field Technician – Level I
- Certified Troxler Gauge Technician
- ACI Concrete Field Testing Technician – Grade I

EDUCATION

- Master of Architecture, University Central the Las Villas, Martha Abrue, Santa Clara, Cuba, 1999
- Civil Engineering Hydraulics, ISPJAE, La Havana, Cuba

PROFESSIONAL EXPERIENCE

Mr. Legon has more than 16 years' experience providing construction material testing, inspection, and architectural services. His professional experience includes Senior Asphalt Technician (QC); control and management of laboratory material and equipment; performing asphalt testing relative to all phases of construction, mix designs, field inspection; soils and concrete testing; and verification testing. From 2003-2005 Mr. Legon provided architecture and urban design expertise for government, commercial, and private sector clients. Prior to 2003, he served as a Building Inspector (QC) to ensure compliance with state and local codes.

RELEVANT PROJECT EXPERIENCE

Federal Highway Beautification, FPN: 420412-1-58-01, Delray Beach, Florida. Mr. Legon provided Verification Testing support services during construction. Services included inspection of asphalt plant supplier, density tests, LBR test, inspection and asphalt testing (during initial test section and production), miscellaneous concrete tests, asphalt cores, mix design reviews, and certification. *Reference: David Romano, Project Manager, 954-680-7771*

MDX SR 874/Don Shula Expressway and SR 878/Snapper Creek Expressway, Miami-Dade County, FL TSF provided asphalt plant inspections (verification testing) for compliance with FDOT specifications and project requirements. TSF also provided weld inspections at machine shop for fabrication of monotubes and mast arm structures. *Reference: Hugo Soto, Project Manager, 305-826-1997.*

NE 2nd Avenue Seacrest Beautification Project, FM No.: 431650-1-58-01, Delray Beach, Florida. TSF provided asphalt plant inspections (verification testing) for compliance with FDOT specifications and project requirements. *Reference: Howard Wight, Project Manager, 561-683-0034.*

Okeechobee Boulevard, FPID No.: 229755-1-58-02, West Palm Beach, Florida TSF provided asphalt plant inspections (verification testing) for compliance with FDOT specifications and project requirements. *Reference: David Romano, Project Manager, 954-680-7771*

QAMT SOUTH RUNWAY – WP303 U.S.1/FEC RR Structures, Fort Lauderdale –Hollywood International Airport, Broward County, Florida. The project consisted of the reconfiguration of US-1 at the east end of the new south runway which included tunnel/bridge construction, roadway widening and re-alignment, new exit/entrance ramps, and asphalt paving and plant inspections. The center piece of the construction phase included a tunnel that will allow US-1 traffic to be routed under the new runway and taxiway. TSF performed PDA testing during installation of concrete piles for foundation tunnel wall support, performed earthwork testing for drainage, embankment, subgrade, and base. TSF inspected the backfill of MSE walls and sampled material for compliance with select fill. TSF provided asphalt plant inspections (verification testing) for compliance with FDOT specifications and project requirements. *Reference: Morgan Dickinson, Project Manager, 954.501.1242.*

RELEVANT PROJECT EXPERIENCE, continued

Turnpike Wide Geotechnical and Materials Testing and Inspection Services. Mr. Legon attended the Verification Technician Procedures Meeting in preparation for this on-going contract to perform asphalt plant inspections throughout the Turnpike. *Reference: Aaron J. Walker, Project Manager, 407-855-3860*

I-75 Express Lanes Segment C, from south of Miramar Parkway to Sheridan Street, Broward County, Florida. Mr. Legon provided QA/QC concrete and earthwork testing for Segment C of the I-75 Express Lanes Project which extends from approximately 2,400 feet south of Miramar Parkway at milepost 1.080 to approximately 4,000 feet south of Sheridan Street at milepost 4.645 in Broward County, for a total distance of approximately 3.6 miles. *Role: Senior Inspector; Prime Consultant: Ranger Construction Industries, Inc.; Consultant Manager: Gregory W. Reilly; Phone: (561) 784-3481 Greg.Reilly@rangerconstruction.com*

I-75 Express Lanes Segment D from South of Sheridan Street to North of Griffin Road, Broward County, Florida. Mr. Legon provided QA/QC concrete and earthwork testing for the design and construction of Segment D of the I-75 Express Lanes Project which extends from approximately 4,000 feet south of Sheridan Street at milepost 4.645 to approximately 800 feet north of the South Florida Water Management District (SFWMD) C-11 Canal Bridge (north of Griffin Road) at milepost 8.344 in Broward County, for a total distance of approximately 3.7 miles. *Role: Senior Inspector; Prime Consultant: Ranger Construction Industries, Inc.; Consultant Manager: Tyler D. Smith, P.E.; Phone: (561) 793-9400 Tyler.Smith@rangerconstruction.com*

I-75 Express Lanes Segment A/B from NW 170th Street to South of Miramar Parkway, Broward & Miami-Dade Counties, Florida. Mr. Legon provided drilled shaft and auger cast pile inspections for sound walls for the design and construction of Segments A&B of the I-75 Express Lanes Project which extend from just north of NW 170th Street in Miami-Dade County at milepost 3.485 to approximately 2,400 feet south of Miramar Parkway in Broward County at milepost 1.080, for a total distance of approximately 3.1 miles. The Project also includes reconstruction, widening, and milling and resurfacing of the HEFT mainline from 1.45 miles south to 1.13 miles north of I-75 to accommodate the Express Lanes Median to Median Direct Connect between I-75 and the HEFT, as well as other interchange ramp connections. *Role: Senior Inspector; Consultant: OHL/Community Asphalt; Consultant Manager: German Pao.; Phone: (305) 863-8396; Gpao@cacorp.net*

I-95 Express Lanes in Broward and Miami-Dade Counties (Design-Build), Broward and Miami-Dade Counties, Florida (11/2011 – 4/2015) Mr. Legon provided pile driving inspection for various bridge widening's and drilled shaft inspection for mast arms and auger cast pile inspections for sound walls.

MDX System-Wide Implementation of Dynamic Message Signs, Miami-Dade County, Florida. (12/2013-9/2015). TSF provided drilled shaft inspections, concrete sampling and strength tests, and concrete field plastic tests for the MDX System-wide Implementation of Dynamic Message Signs. *Role: Senior Inspector;*

US-1/SR-5 Low Level Bridges Replacement from North of SR 706 at Coastal Way to South of CR A1A (Ocean Boulevard), Jupiter, Florida Mr. Legon served as senior inspector for the project by providing quality control during the construction of the US-1/SR-5 Low Level Bridges in Jupiter, Florida. He performed density testing on utility backfill, embankment, subgrade and base at bridge approaches. He cast concrete cylinders for bridge decks, columns and bents, sidewalk and curb pads.

Miramar Parkway, City of Miramar, FL. Mr. Legon served as senior inspector for the project by providing verification testing for the widening and resurfacing of Miramar Parkway in the City of Miramar. He cast concrete cylinders during construction of sidewalk curb pads, conducting slump, air and temperature testing on concrete. Performed in-place density testing on subgrade, base and curb pads.

Broward County Mast Arms Traffic Signalization, Broward County, Florida

- Provided drilled shaft inspections at different locations throughout Broward County

MDX SR-112 Open Road Tolling (ORT) Off-System Signing, Miami-Dade County, Florida

- Provided QA/QC concrete testing

Technician CTQP Qualification Report

Date Ran: 9/6/2019 2:05:25 PM

Technician Name: Otto Legon

Qualification Area	Qualification Status Code	Qualification Date	Expiration Date
QQ060101 - ASPHALT PAVING TECHNICIAN - LEVEL 1			
	SUPERSEDED	3/16/2007	3/16/2012
	VALID	5/1/2012	5/1/2017
	VALID	5/1/2012	6/2/2022
QQ060104 - ASPHALT PAVING LEVEL 2			
	VALID	5/1/2012	6/2/2022
	SUPERSEDED	6/1/2012	6/1/2017
QQ060107 - ASPHALT PLANT TECHNICIAN - LEVEL 1			
	SUPERSEDED	11/30/2006	11/30/2011
	VALID	11/17/2011	11/17/2016
	VALID	12/7/2016	12/7/2021
QQ060110 - ASPHALT PLANT TECHNICIAN - LEVEL 2			
	VALID	2/23/2018	3/14/2023
	SUPERSEDED	11/29/2007	11/29/2012
	VALID	3/13/2013	3/13/2018
QQ060204 - CONCRETE FIELD TECHNICIAN - LEVEL 1			
	VALID	12/19/2012	12/19/2017
	VALID	6/3/2017	6/3/2022
QQ060301 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 1			
	SUPERSEDED	1/27/2012	1/27/2017
	VALID	3/22/2017	3/22/2022
QQ060304 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 2			
	SUPERSEDED	1/1/0001	1/1/0001
	VALID	5/18/2018	5/18/2023
QQXX8888 - DRILLED SHAFT INSPECTION			
	VALID	2/10/2018	3/2/2023
	SUPERSEDED	3/1/2013	3/1/2018
QQXX9999 - PILE DRIVING INSPECTION			
	VALID	8/21/2016	8/21/2021

Exam Name	Course Name	Exam Date	Score	Exam Result
3 Months Experience Asphalt Paving Operations or Asphalt Roadway Testing			100	Met
3 Months Experience Asphalt Plant Operations or Testing			100	Met
30 Days Experience on a construction project involving earthwork operations			100	Met
ACI Concrete Field Testing Technician Grade 1 Certification			100	Met
Asphalt Paving - Level 1 Proficiency Exam	Asphalt Paving - Level 1	03/16/2007	100	Pass

Asphalt Paving - Level 1 Proficiency Exam - Rel.5	Asphalt Paving - Level 1	05/01/2012	100	Pass
Asphalt Paving - Level 1 Written Exam - Rel.4	Asphalt Paving - Level 1	03/16/2007	88	Pass
Asphalt Paving - Level 1 Written Exam - Rel.5	Asphalt Paving - Level 1	05/01/2012	81	Pass
Asphalt Paving - Level 2 Written Exam - Rel. 6	Asphalt Paving - Level 2	06/01/2012	92	Pass
Asphalt Paving - Level 2 Written Exam - Rel. 6	Asphalt Paving - Level 2	03/29/2017	94	Pass
Asphalt Plant - Level 1 Proficiency Exam	Asphalt Plant - Level 1	11/30/2006	100	Pass
Asphalt Plant - Level 1 Proficiency Exam - Rel.4	Asphalt Plant - Level 1	11/17/2011	100	Pass
Asphalt Plant - Level 1 Proficiency Exam - Rel.6	Asphalt Plant - Level 1	12/07/2016	100	Pass
Asphalt Plant - Level 1 Written Exam - Rel.3	Asphalt Plant - Level 1	11/30/2006	82	Pass
Asphalt Plant - Level 1 Written Exam - Rel.4	Asphalt Plant - Level 1	11/17/2011	86	Pass
Asphalt Plant - Level 1 Written Exam - Rel.6	Asphalt Plant - Level 1	12/07/2016	90	Pass
Asphalt Plant - Level 2 Written Exam - Rel.7	Asphalt Plant - Level 2	11/29/2007	76	Pass
Asphalt Plant - Level 2 Written Exam - Rel.8	Asphalt Plant - Level 2	03/13/2013	84	Pass
Asphalt Plant - Level 2 Written Exam - Rel.8	Asphalt Plant - Level 2	02/23/2018	88	Pass
Drilled Shaft Inspection Proficiency Exam - Rel.4	Drilled Shaft Inspection	03/01/2013	100	Pass
Drilled Shaft Inspection Written Exam - Rel.5	Drilled Shaft Inspection	03/01/2013	80	Pass
Drilled Shaft Inspection Written Exam - Rel.7	Drilled Shaft Inspection	02/10/2018	86	Pass
Earthwork Construction Inspection - Level 1 Proficiency Exam - Rel. 3	Earthwork Construction Inspection - Level 1	01/27/2012	100	Pass
Earthwork Construction Inspection - Level 1 Proficiency Exam - Rel. 3	Earthwork Construction Inspection - Level 1	03/22/2017	100	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	01/27/2012	88	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	03/22/2017	98	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 6	Earthwork Construction Inspection - Level 2	05/18/2018	82	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.4	FDOT Concrete Field Inspector Spec	12/19/2012	76	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.4	FDOT Concrete Field Inspector Spec	05/04/2018	78	Pass
Monitored 10 Shafts, at least 5 Shafts constructed with wet method			100	Met
Monitored 15 Driven Piles, at least 10 Piles driven with Open Diesel Hammers			100	Met
Nuclear Safety Certification			100	Met
Pile Driving Inspection Written Exam - Rel.8	Pile Driving Inspection 1	08/21/2016	74	Pass

ROBERTO MARTINEZ

SENIOR INSPECTOR
16 Years of Experience

RELIABLE IN-DEPTH SOLUTIONS
Geotechnical Engineering | Material Testing | Inspection Services

PROFESSIONAL QUALIFICATIONS

EDUCATION

- Instituto Salvador Allende, Havana Cuba

PROFESSIONAL ORGANIZATION AND REGISTRATION

- TIN # [redacted]
- Certified Troxler Gauge Technician
- ACI Concrete Field Testing Technician – Grade I
- CTQP Earthwork Construction Inspection – Level I and II
- CTQP Concrete Field Technician – Level I and II
- CTQP Pile Driving Inspection
- CTQP Final Estimates – Level I

PROFESSIONAL EXPERIENCE

Mr. Martinez has more than 16 years of experience in construction and materials testing Services involving concrete testing and soils testing activities throughout South Florida.

RELEVANT PROJECT EXPERIENCE

I-75 Express Lanes Segment C, from south of Miramar Parkway to Sheridan Street, Broward County, Florida. Mr. Martinez provided QA/QC concrete and earthwork testing for Segment C of the I-75 Express Lanes Project which extends from approximately 2,400 feet south of Miramar Parkway at milepost 1.080 to approximately 4,000 feet south of Sheridan Street at milepost 4.645 in Broward County, for a total distance of approximately 3.6 miles. *Role: Senior Inspector; Prime Consultant: Ranger Construction Industries, Inc.; Consultant Manager: Gregory W. Reilly; Phone: (561) 784-3481* Greg.Reilly@rangerconstruction.com

I-75 Express Lanes Segment D from South of Sheridan Street to North of Griffin Road, Broward County, Florida. Mr. Martinez provided QA/QC concrete and earthwork testing for the design and construction of Segment D of the I-75 Express Lanes Project which extends from approximately 4,000 feet south of Sheridan Street at milepost 4.645 to approximately 800 feet north of the South Florida Water Management District (SFWMD) C-11 Canal Bridge (north of Griffin Road) at milepost 8.344 in Broward County, for a total distance of approximately 3.7 miles. *Role: Senior Inspector; Prime Consultant: Ranger Construction Industries, Inc.; Consultant Manager: Tyler D. Smith, P.E.; Phone: (561) 793-9400 Tyler.Smith@rangerconstruction.com*

SR-710 Reconstruction from Martin/Palm Beach County Line to Pratt Whitney Entrance, Palm Beach County, Florida. TSF provided QA/QC services for the improvements to SR-710 which includes the reconstruction from Martin/Palm Beach County line to Pratt & Whitney entrance from 2 to 4 lanes. Improvements included new embankment, subgrade, base, milling and resurfacing of the existing lanes, new shoulders, proposed guard rail placements, drainage modifications, new signing and pavement markings and other minor improvements within the construction limits. *Role: Senior Inspector; Prime Consultant: Ranger Construction Industries, Inc.; Consultant Manager: Patrick Flynn.; Phone: (321) 288-2484; Patrick.Flynn@rangerconstruction.com*

MDX System-Wide Implementation of Dynamic Message Signs, Miami-Dade County, Florida. (12/2013-9/2015). TSF provided drilled shaft inspections, concrete sampling and strength tests, and concrete field plastic tests for the MDX System-wide Implementation of Dynamic Message Signs.

Improvements to State Rd 70, Kings Highway, St. Lucie County, Florida. Performed inspections on all roadway inspections such as embankment, pipe, sidewalks, and concrete structures

SR-812/SR80 Hooker Highway, Belle Glade, Florida. Mr. Martinez provided quality control and testing services during construction. Provided soils and concrete testing for contractor's Quality Control. Provided laboratory testing and density log book for compliance with FDOT and project specifications

RELEVANT PROJECT EXPERIENCE, continued

Dixie Highway Flyover from South of Hillsboro Boulevard to north of the Hillsboro Canal, Broward and Palm Beach Counties, Florida. (12/2009-7/2012) Provided quality control for the new fly-over construction in Palm Beach & Broward Counties, Florida. Provided sampling of soils and concrete for laboratory testing. Performed soil testing (density testing) on utility backfill, embankment, MSE Wall construction, foundations for pile caps, subgrade and base materials. Concrete testing was provided for foundations, columns and decks including all concrete physical properties.

Ocean Avenue Bridge over Intracoastal Waterway, Lantana, Florida. Mr. Martinez performed verification testing on soils for embankment, drainage, subgrade, and base. Performed testing on concrete for bridge widening including bents, decks, columns, and drilled shafts

ADDITIONAL ABBREVIATED PROJECT EXPERIENCE

- Central Broward ATMS, Broward County, Florida
- MDX - SR878 ORT Monotube Foundation, Miami, Florida
- US-1/SR-5 Low Level Bridges Replacement from North of SR 706 at Coastal Way to South of CR A1A (Ocean Boulevard), Jupiter, Florida
- SR 710 Big John Monahan Bridge Design-Build from SW Trail Dr. to E of the SR-76 Connector Ramps, Martin County, Florida
- US 1 & Cove Road Improvements, Martin County, Florida
- Lyons Road from Atlantic Ave to L36, Palm Beach County, Florida
- Persimmon Boulevard, Palm Beach County, Florida
- Jog Road from Atlantic Ave, Palm Beach County, Florida
- Sheridan Street, Broward County, Florida
- Vista Parkway Resurfacing, West Palm Beach, Florida
- Congress Avenue, Palm Beach County, Florida
- Haverhill Rd & Dyer Blvd Intersection Improvements, Palm Beach County, Florida
- I-95 Widening Design Build E4L94 in St. Lucie County, St. Lucie County, Florida

Florida Department of Transportation's
Construction Training Qualification Program

Certification of Qualification

Roberto A. Martinez

Has completed the requirements for:

Earthwork Construction Inspection - Level 1

Expiration Date: June 24, 2024*

CTQP
Construction
Training Qualification Program
www.ctqpflorida.com

Melissa Wildermuth
Melissa Wildermuth
CTQP Program Administrator

*Continued Qualification is subject to FDOT procedure 700-000-01.

Technician CTQP Qualification Report

Date Ran: 9/6/2019 2:05:59 PM

Technician Name: Roberto Martinez

Qualification Area	Qualification Status Code	Qualification Date	Expiration Date
99997 - FINAL ESTIMATES LEVEL 1			
	VALID	10/26/2018	10/26/2023
QQ060204 - CONCRETE FIELD TECHNICIAN - LEVEL 1			
	SUPERSEDED	4/28/2012	4/28/2017
	SUPERSEDED	4/28/2012	4/28/2017
	SUPERSEDED	4/28/2012	4/28/2017
	VALID	4/28/2017	4/28/2022
QQ060210 - CONCRETE FIELD TECHNICIAN - LEVEL 2			
	SUPERSEDED	4/28/2012	4/28/2017
	VALID	4/28/2017	4/28/2022
QQ060301 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 1			
	SUPERSEDED	9/16/2009	9/16/2014
	VALID	6/24/2014	6/24/2019
	VALID	2/5/2019	6/24/2024
QQ060304 - EARTHWORK CONSTRUCTION INSPECTION - LEVEL 2			
	SUPERSEDED	1/17/2014	1/17/2019
	VALID	11/3/2018	1/18/2024
QQXX8888 - DRILLED SHAFT INSPECTION			
	INPROGRESS	1/1/0001	1/1/0001
QQXX9999 - PILE DRIVING INSPECTION			
	VALID	3/31/2017	3/31/2022

Exam Name	Course Name	Exam Date	Score	Exam Result
30 Days Experience on a construction project involving earthwork operations			100	Met
ACI Concrete Field Testing Technician Grade 1 Certification			100	Met
ACI Concrete Transportation Construction Inspector Certification			100	Met
Drilled Shaft Inspection Proficiency Exam - Rel.7	Drilled Shaft Inspection	12/16/2017	100	Pass
Drilled Shaft Inspection Written Exam - Rel.7	Drilled Shaft Inspection	07/31/2017	60	Fail
Drilled Shaft Inspection Written Exam - Rel.7	Drilled Shaft Inspection	08/24/2017	88	Pass
Earthwork Construction Inspection - Level 1 Proficiency Exam - Rel. 3	Earthwork Construction Inspection - Level 1	09/16/2009	100	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	09/16/2009	92	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	02/05/2019	98	Pass
Earthwork Construction Inspection - Level 1 Written Exam - Rel. 3	Earthwork Construction Inspection - Level 1	06/24/2014	98	Pass

Earthwork Construction Inspection - Level 2 Written Exam - Rel. 5	Earthwork Construction Inspection - Level 2	01/28/2010	56	Fail
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 5	Earthwork Construction Inspection - Level 2	01/17/2014	86	Pass
Earthwork Construction Inspection - Level 2 Written Exam - Rel. 6	Earthwork Construction Inspection - Level 2	11/03/2018	82	Pass
FDOT Concrete Field Inspector Spec Written Exam - Rel.3	FDOT Concrete Field Inspector Spec	07/18/2007	56	Fail
FDOT Concrete Field Inspector Spec Written Exam - Rel.4	FDOT Concrete Field Inspector Spec	04/28/2012	72	Pass
Final Estimates - Level 1 Written Exam - Rel.5	Final Estimates - Level 1	10/26/2018	92	Pass
Monitored 15 Driven Piles, at least 10 Piles driven with Open Diesel Hammers			100	Met
Nuclear Safety Certification			100	Met
Pile Driving Inspection Written Exam - Rel.8	Pile Driving Inspection 1	03/31/2017	90	Pass

RAJ KRISHNASAMY, P.E.

PRESIDENT, PRINCIPAL ENGINEER
32 Years of Experience

RELIABLE IN-DEPTH SOLUTIONS
Geotechnical Engineering | Material Testing | Inspection Services

PROFESSIONAL QUALIFICATIONS

EDUCATION

- MS in Geotechnical Engineering, University of Memphis, 1995
- BS in Civil Engineering, Christian Brothers University, 1987
- Diploma in Electronic Engineering, Malaysian Air Force Institute, 1984

PROFESSIONAL ORGANIZATION AND REGISTRATION

- Professional Engineer: Florida, 53567
- Water Well Contractor, Florida, 11346
- Certified OSHA Supervisor
- Certified Environmental Consultant

PROFESSIONAL EXPERIENCE

Mr. Raj Krishnasamy, P.E., President and Principal Engineer of TSF, is a Florida State registered Geotechnical Engineer with over 32 years of experience. Mr. Krishnasamy oversees the geotechnical engineering, construction materials testing, and inspection services operations. His experience consists of successfully completing over 5,000 public and private projects, over 200 roadway projects, and design-build projects totaling over $2 billion in construction costs. He serves as Project Manager for continuing contracts with over 20 Florida public agencies. He has a history of repeatedly retaining those contracts through successful, cost-effective and prompt execution of each task order. Mr. Krishnasamy's daily involvement with the in-house and field operations of the construction and geotechnical services departments provides him the "hands-on" experience and knowledge of current construction codes and construction practices throughout the State of Florida. Mr. Krishnasamy and his highly experienced team focus on providing the client with a consistently accurate, cost-effective quality product that is delivered on time and within budget.

RELEVANT PROJECT EXPERIENCE

SR 820/Pines Boulevard/Hollywood Boulevard From east of US-27 (MP 0.100) to east of Young Circle (18.900), Broward County, Florida) Mr. Krishnasamy was the principal in charge of the geotechnical engineering services for several roadway improvements under consideration on Flamingo Road, Pines Boulevard and Hollywood Boulevard in Broward County. The study was performed to obtain information on the existing subsurface conditions at the proposed project site to assist in the design and preparation of construction plans for the proposed improvements. Reviewed the existing data from previous geotech studies. Provided geotechnical recommendations regarding general site development, permanent cut and fill slopes, excavations, groundwater control, pavement design, on-site soil suitability, Permanent Sheet Pill Wall, Light Pole installation, and construction considerations

SW 4th Avenue at SW 28th Street, Broward County, Florida. Mr. Krishnasamy was the principal in charge of the geotechnical engineering services for the safety improvement project at the intersection of SW 4th Avenue at SW 28th Street in Broward County. The improvements included the installation of a mast arm structure, and roadway widening in the general intersection areas. The study was performed to obtain information on the existing subsurface conditions at the proposed project site to assist in the design and preparation of construction plans for the proposed improvements. Field work included Standard Penetration Test (SPT) borings. Provided geotechnical evaluations and recommendations regarding foundation design and drilled shaft construction

RELEVANT PROJECT EXPERIENCE, *Continued*

I-75 Express Lanes Segment D from South of Sheridan Street to North of Griffin Road, Broward County, Florida. Mr. Krishnasamy was the principal in charge of the geotechnical engineering services for Segment D of the I-75 Express Lanes Project which extends from approximately 4,000 feet south of Sheridan Street at milepost 4.645 to approximately 800 feet north of the South Florida Water Management District (SFWMD) C-11 Canal Bridge (north of Griffin Road) at milepost 8.344 in Broward County, for a total distance of approximately 3.7 miles.

CR-811/Dixie Highway Fly-Over, Broward & Palm Beach Counties, Florida Performed a geotechnical engineering study for the new overpass. Provided a geotechnical report with analysis and recommendations for bridge foundation, MSE Wall and roadway soil survey. Prepared TSP for surcharge, settlement monitoring and vibration monitoring. Geotechnical recommendations also included a discussion of soil suitability, groundwater, and other site/construction considerations. Prior to construction, performed baseline vibration monitoring for the railroad track with both a loaded train and empty train. During construction monitored the vibration due to the construction activities and found that vibration due to construction did not exceed the baseline. Provided pile driving inspection and foundation certification as well as pile load tests. Also provided Quality Control during construction.

ADDITIONAL ABBREVIATED PROJECT EXPERIENCE

- Flashers on Strain Poles – Sample Road, West of University, Coral Springs, Florida
- Parking Lot Pavement Cores, 11540-11550 Wiles Road, Coral Springs, Florida
- Nob Hill Road, Coral Springs, Florida
- SW Wiles Rd & 441 (Super Target), Coral Springs, Florida
- Turtle Crossing Boat Ramp, Coral Springs, Florida
- Pine Island Road Widening from SR 84 to Nova Drive, Broward County, Florida
- All Electronic Tolling (AET) Phase 5A Conversion, Broward and Palm Beach Counties, Florida (2014)
- SW 36th Street Relocation from SW 73rd Avenue to SW 76th Terrace, Davie, Florida
- Wiles Rd Widening from Rock Island Rd to US-441, Broward County, Florida
- SW 67th Avenue from SW 41st Court to Orange Drive, Davie, Florida
- Hiatus Road Extension from Sunrise Boulevard to Oakland Park Boulevard, Broward County, Florida
- South Florida AET Phase 4B, Broward and Miami-Dade Counties, Florida
- Improvement of SR A1A from south of SE 3rd Street to north of NE 7th Street, City of Deerfield Beach, Florida
- SW 36th Avenue Pedestrian Bridge and Path, City of Pompano Beach, Florida
- ATMS Deployment in Southern Broward County (Design-Build Project), Broward County, Florida
- SFRC Bascule Bridge Replacement over the New River, Broward County, Florida
- I-95 Express Lanes in Broward and Miami-Dade Counties - Design-Build
- NE 34th Court Roadway Improvements, Oakland Park, Florida
- SW 202 Avenue, Southwest Ranch, Florida
- Safety Projects - Intersection of SR 824 & SW 31st Avenue and Intersection SR 817 & Miramar Parkway, Broward County, Florida
- ATMS Installation in Central Broward County, Broward County, Florida
- SR 823/Flamingo Road from North of SR 818/Griffin Road to South of SR 84, Broward County, Florida
- Pedestrian Bridge at Floranda Road, Oakland Park, Florida

Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

KRISHNASAMY, RAJ

2765 VISTA PARKWAY, SUITE 9
WEST PALM BEACH FL 33411

LICENSE NUMBER: PE53567

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

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Chang Du RLA, ASLA & LEEDAP

Landscape Architect

Ms. Du started professional career as an architect at Zhejiang South Architecture Inc. in China. She then came to the US to receive Master's Degree in Land Planning & Landscape Architecture from University of Minnesota. After many years of global practice at EDSA Inc., she co-founded DUMON DESIGN in 2010, which later became DULAND DESIGN. She has been involved in designing high-end hotels & resorts, urban areas, communities around the world for over two decades, focusing on sustainable planning and design. Ms. Du has been involved in all aspects of landscape architecture, ranging from large scale planning to detail design and has participated in numerous projects, many of which are located in United States, the Caribbean and China.

She has been invited to speak at the Green-build Conference in China in 2010, Asia Pacific Landscape Architecture Summit in 2015, and several universities in China. She was also invited to speak at 2015 Governor's trade mission lecture series.

Ms. Du believes in community building and culture diversity. With her global experience and cultural background, she has worked extensively in China leading design teams from US and with Chinese clients on projects in the US. In 2015, she co-founded China Council Florida to actively promote Florida to Chinese investors, bridging investment opportunities and bringing cultural awareness into local communities.

Relevant Experience and Qualifications

Broward County/Port Everglades Terminal 4 Parking Garage | Fort Lauderdale, FL
The project consists of a new structure to hold 1700 to 2400 parking spaces within five to six levels. The structure will provide parking spaces Terminal 2 and 4, to replace the removed parking spaces from the existing Northport Parking Garage partial demolition due to the expansion of the convention center and the new proposed hotel. The parking structure is to provide both vehicular and pedestrian connections to terminals. The project is currently in Construction Document phase.

Port Everglades International Logistics Center | Hollywood, FL
This project site is a 16.65 acre area located in Port Everglades. The development program is to building two built-to-suit warehouse buildings with total building area of 280,000 SF. The project is currently pursuing Florida Green Building Certification. Design documentation is at Construction Documents phase.

Aerotropolis Panama | Panama City, Panama
Our Team provided master planning services for this146-hectare Ciudad Aeroportuaria Tocumen. The project is located adjacent to the existing Tocumen International Airport in Panama City and it is planned to supply new business demands generated by the new Tocumen International Airport designed by Norman Foster of Foster + Partners. The project includes a logistic and JIT center, a business and industrial park, a tax free zone center, hotel and entertainment center, an outlet mall, and a moving system connecting the complex with the airport and the line 1 of the future metro system.

Hillsboro Boulevard Streetscape | Deerfield Beach, FL
The Streetscape Improvement Plan along Deerfield Beach's gateway to its beachfront included spacious sidewalks with special paving, landscape, decorative pedestrian and vehicular lights, bus stops, site furniture, a bike lane and on-street parking.

Sheridan Street Transit Village | Hollywood, FL
The 38-acre site includes 18 acres at the Sheridan Street Rail Station and an additional 20-acre property adjacent to the south which is currently a mobile home park with significant existing oak hammocks. The vision for the site is to develop a mixed-use transit village which could include workforce rental housing product, neighborhood retail and possibly office space. A Publix grocery store, a K-8 charter school and some type of government office facilities are considerations.

Balboa Torre Financiera | Panama City, Panama
The Torre Financiera Balboa is located in a 20,550 m2 parcel on Avenida Balboa in Panama. Project scope includes Landscape Architectural design services related to the hardscape and landscape of the new financial tower. The design scope included the Balboa plaza located to the west of the financial tower, the financial plaza and arrival areas, the interior food court and the streetscape treatment for pedestrian connections to the proposed Metro System.

Century Grand Park | Beijing, China

This transit oriented development has a land area of 6 hectares on-structure planned and designed to be the Central Sports Park. It serves 13,000 nearby residents. It is the heart of the community artfully blending all activities together in a mountain forest like settings. The cohesive overall natural flowing berm landscape creates an interesting, lush, beautiful and comfortable space for residents. The Park provides grand amphitheater, the great lawn, playgrounds, jogging hills, yoga pavilion, BMI course, state of the art fitness center and café and a variety of ball courts.

Coconut Creek PMDD | Coconut Creek, FL
The 19-acre project located within the City's new Planned MainStreet Development District promotes the development of a pedestrian oriented, mixed-use community organized around substantial, centralized and contiguous recreational open space. The efficient development of land resources, compact development of a variety of housing choices, flexibility in use and design, and green building and planning techniques are fundamental criteria of the district development.

Deerfield Beach Oceanway Promenade and the Boardwalk | Deerfield Beach, FL
The team was responsible for the redesign of the Ocean Way Promenade and the Boardwalk at the City's main public beachfront. It is located in one of the most beautiful beaches in south Florida. Design services include landscape, hardscape and lighting design. The Promenade and Boardwalk have given the City beachfront an instant facelift and have since become the hot spot amongst local residents and tourists.

Pioneer Park | Deerfield Beach, FL

The master plan for the renovation of a 16 acre active park at the City of Deerfield Beach, located at Dixie Hwy and Hillsboro Canal includes a community center, two major league baseball fields, basketball courts, playground, tennis center, concession building, outdoor plazas, boat ramps and trails along Hillsboro Canal to be connected to a regional trail system.

EDUCATION	PROFESSIONAL LICENSES/ REGISTRATIONS/CERTIFICATIONS	PROFESSIONAL AFFILIATIONS
Bachelor of Architecture - Magna Cum Laude: Zhejiang University, China Masters of Landscape Architecture - Magna Cum Laude: University of Minnesota, Twin Cities	Florida Registered Landscape Architect LEED Accredited Professional BD+C	American Society of Landscape Architects Urban Land Institute

9/23/2019

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF LANDSCAPE ARCHITECTURE
2601 BLAIR STONE ROAD
TALLAHASSEE FL 32399-0783

(850) 487-1395

DU, CHANG
737 NW 42ND AVE
PLANTATION FL 33317

Broward County Board of County Commissioners

Congratulations! With this license you become one of the nearly one million Floridians licensed by the Department of Business and Professional Regulation. Our professionals and businesses range from architects to yacht brokers, from boxers to barbeque restaurants, and they keep Florida's economy strong.

Every day we work to improve the way we do business in order to serve you better. For information about our services, please log onto **www.myfloridalicense.com**. There you can find more information about our divisions and the regulations that impact you, subscribe to department newsletters and learn more about the Department's initiatives.

Our mission at the Department is: License Efficiently, Regulate Fairly. We constantly strive to serve you better so that you can serve your customers. Thank you for doing business in Florida, and congratulations on your new license!

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

LA6666948 ISSUED: 11/12/2017

REGISTERED LANDSCAPE ARCHITECT
DU, CHANG

HAS REGISTERED under the provisions of Ch.481 FS.
Expiration date : NOV 30, 2019 L1711120002069

DETACH HERE

RICK SCOTT, GOVERNOR JONATHAN ZACHEM, SECRETARY

PNC2119168P1
p. 307

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF LANDSCAPE ARCHITECTURE

LICENSE NUMBER
LA6666948

The LANDSCAPE ARCHITECT
Named below HAS REGISTERED
Under the provisions of Chapter 481 FS.
Expiration date: NOV 30, 2019

DU, CHANG
811 E. LAS OLAS BLVD.
SUITE 4
FORT LAUDERDALE FL 33301

ISSUED: 11/12/2017 DISPLAY AS REQUIRED BY LAW SEQ # L1711120002069

LEED AP BD+C

GREEN BUSINESS CERTIFICATION INC. CERTIFIES THAT

chang du

HAS ATTAINED THE DESIGNATION OF

LEED AP® Building Design + Construction

by demonstrating the knowledge and understanding of green building practices and principles needed to support the use of the LEED green building program.

10299759-AP-BD+C

CREDENTIAL ID

11 AUG 2011

ISSUED

08 AUG 2021

VALID THROUGH

MAHESH RAMANUJAN
PRESIDENT & CEO, U.S. GREEN BUILDING COUNCIL
PRESIDENT & CEO, GREEN BUSINESS CERTIFICATION INC.

EXPERIENCED LEADER

Advertising, Marketing, Government & Public Relations • 20+ years

EXPERTISE

Strategic Partnering with Private and Public Sectors. Excellent understanding of South Florida Transportation (Port, Rail & Transit) and Infrastructure Programs (Existing & Planned). Well rounded in advertising, media and governmental relations. Leader in Developing Economic and Small Business Opportunities. Stakeholder Liaison.

EDUCATION

Master Degree in Management • Polytechnic University

Bachelor of Arts, Environmental Policy & Law • University of Kansas

EXPERIENCE

Mr. Pollitt has nearly 20 years of experience working with the private sector and local, state and federal government. He excels in influence marketing, business development and strategic communications and has participated in some of the nation's largest transportation and infrastructure projects.

Mr. Pollitt is actively involved in the Broward County community and with philanthropy, having served on numerous boards and committees. He currently serves as the **2019 Chair for the Broward County Office of Economic and Small Business Development Advisory Board**, the Executive Board of the **Downtown Fort Lauderdale Transportation Management Association (Sun Trolley)**, the Executive Board of Directors for **Envision Uptown Inc.**, Vice-chair of the Fort Lauderdale Transportation & Infrastructure Committee, Fort Lauderdale Chamber of Commerce Government Affairs Committee, the **Six-Year Term on the City of Fort Lauderdale Executive Airport Advisory Board** and the Sustainability Advisory Board. Mr. Pollitt is a member of the Broward League of Cities, the Riverwalk Trust, the Historic Stranahan House Museum and the Fort Lauderdale Chamber of Commerce. He has chaired the last two Transit Receptions in Broward County and has served multiple years as a Judge for the South Florida Sustainability Awards. Dana is a Broward County City of Fort Lauderdale small business owner. He is fluent in English, Spanish and Portuguese.

PROFESSIONAL EXPERIENCE

City of Key West Advertising & Marketing Services Contract for Key West Historic Seaport. Role: brand development and management, advertising, marketing, media buying, media planning, digital and print media, website and social media strategy, implementation and management and market research. The overall plan is to position the Key West Historic Seaport as a premier tourist destination, promote initiatives, events, and programs, production of advertising and communication materials, recommend and implement media strategies, including media buys and negotiate with advertising media. Date: 2015-2020.

Broward County Convention Center Hotel and Expansion. Role: Public Relations, Stakeholder Liaison. In 2015, the Board of County Commissioners approved moving forward with expanding the size of the Broward County Convention Center and adding a new headquarters hotel. After an extensive procurement process, Matthews Southwest Inc., (MSW) a nationally renowned and highly accomplished developer and team, was ranked as the #1 development firm by the Board. Source: http://broward.org/ccexpansion/Pages/Default.aspx Date: 2017-Present.

Broward County 2018 Port Everglades Master/Vision Plan Third Update. Role: Community Outreach, Stakeholder Liaison and Public Involvement Officer Support Services. For the third update to the Broward County Port Everglades Master/Vision Plan, the team will review the 2014 adopted Master/Vision Plan, related economic activity, financial and market forecasts and conditions and other relevant port/county planning documents as approved by the Contract Administrator. Date: 2018-Present.

Broward County Port Everglades Public Relations and Stakeholder Liaison. Design & Engineering Services Slip 1 Expansion. Subconsultant to HDR. Role: Community Outreach, Stakeholder Liaison and Public Involvement Officer Support Services. Provide support to the Design Team by providing project team facilitation, document control support to the port director's office, port clients and petroleum sector industry located at Port Everglades. Date: 2015-Current.

FDOT D4 Design Services for Transit Improvements along SR-5/US from the Miami Dade County Line to SR-842/ Broward Blvd. Subconsultant to Caltran Engineering. Role: Community Outreach, Stakeholder Liaison and Public Involvement Officer Support Services. Date 2017-Current.

City of Fort Lauderdale Transit Master Plan. Role: Community Outreach Services. Website Development, Public Opinion Polling. Provide Public Involvement and Marketing Services to assist in the analysis of the City of Fort Lauderdale Community Bus System in order to enhance mobility for all users of the System for the City's Transportation and Mobility Department. The City of Fort Lauderdale was successful in obtaining a two-year grant from the Federal Transit Administration's (FTA) New Freedom Program as a sub-recipient to the South Florida Regional Transportation Authority (SFRTA). Date: 2016.

City of Fort Lauderdale. Fort Lauderdale Executive Airport (FXE) Disadvantaged Business Enterprise (DBE) Program for Fiscal Years 2015-2017. Role: Provides support services to assist the City of Fort Lauderdale Executive Airport in updating their current Disadvantaged Business Enterprise (DBE) program and establish a new DBE program goal for Fiscal Years 2015 to 2017 in anticipation of receiving Federal grant funding. Date: 2014-2017.

City of Fort Lauderdale, Envision Uptown, Inc. Role: Community Placemaking, Public Relations, Marketing, Creating an Urban Village. Envision Uptown, Inc. is a nonprofit group of front runners in business, education, and government working to develop a specific 50-year physical vision plan for the transformation of Uptown Fort Lauderdale to transform the area, serving as the largest employment hub in Broward County, from its present workplace-based and car-dependent development into a livable, walkable, and transit-ready urban neighborhood of offices, residences, parks, and hospitality, civic and retail buildings.

ADEPT, with an aligned vision in transforming Uptown Fort Lauderdale into a transit-ready economic development space and business community, support the redevelopment efforts to establish this area. Our team is responsible for the coordination and execution of all Board meetings, marketing strategy creation and informational email newsletter (e-blast) development and distribution to targeted lists of businesses in Uptown Fort Lauderdale, with a Website Development and Design contract pending. Date: 2013-Present.

ADEPT

JULIE RUFFOLO | TRILINGUAL

ADEPT Strategy & Public Relations

CERTIFICATIONS **ACDBE - DBE - SBE - CBE - MWBE**

EXPERIENCED LEADER

Community Outreach, Public Involvement & Public Relations • 16 years

EXPERTISE

Multicultural Strategy And Foreign Public Relations, Community Outreach, Stakeholder Coordination, Promoting Business/Corporate and Special Events, E-Commerce Brand and Program Management. Stakeholder Liaison.

EDUCATION

Bachelors of Arts, Hospitality Management & Event Planning • UNIESP, Brazil

EXPERIENCE

Ms. Julie Ruffolo is responsible for overall advertising, marketing and public relations operations. Ms. Ruffolo has handled all aspects of campaign development, monitoring, reporting, accounting for public involvement/awareness campaigns, events, trade and trunk shows and catering. Her ability to engage with minority and under-represented groups through implementing outreach strategies, developing innovative methods and direct public involvement campaigns help clients reach every spectrum of the community.

Ms. Ruffolo oversees how ADEPT informs the public, develops memorandums to local governments, press releases, display ads, agendas, marketing materials and flyers. She has the ability to facilitate the public involvement process by distributing plans, agendas and brochures written to familiarize the public with infrastructure projects. Her team can arrange television or radio appearances, create videos, CDs or audiotapes and publish newsletters specific to transportation and infrastructure projects. As an avid bicyclist, Mr. Ruffolo is passionate about increasing awareness, promoting bike lanes, complete streets and ensuring the safety of pedestrians and bicyclists in Broward County. **Julie currently serves as the communications chair for the South Florida Chapter of Advancing Women in Transportation [WTS] and is very involved in airport and seaport activities.**

Julie is a City of Fort Lauderdale small business owner. She is actively involved in volunteering with the **City of Fort Lauderdale Community Service Volunteer office.** She serves on the **Board of the Imperial Point Civic Association** and acts as the communications chair to over 1,400 Fort Lauderdale residents.

Ms. Ruffolo has been recognized by **Broward College as Supplier of the Month, Celebrating Women's History Month, by the National Association of Professional Women as their Women of the Year and was awarded the Rosa Parks Diversity Leadership Award** by the South Florida Chapter of the Advancing Women in Transportation (WTS). **Ms. Ruffolo is fluent in English, Spanish and Portuguese.**

PROFESSIONAL EXPERIENCE

Broward County Regional Transmission System Master Plan. Role: Public Relations, Stakeholder Liaison. Risk-based asset prioritization approach will be used to identify critical assets as part of the Regional Master Plan. This approach will allow the County to effectively provide risk analysis and prioritization with the objective of maintaining a desired level of service for its customers, communities and the environment at an acceptable level of risk. Date: 2019-Present.

City of Key West Advertising & Marketing Services Contract for Key West Historic Seaport. Role: Brand development and management, advertising, marketing, media buying, media planning, digital and print media, website and social media strategy, implementation and management and market research. The overall plan is to position the Key West Historic Seaport as a premier tourist destination, promote initiatives, events, and programs, production of advertising and communication materials, recommend and implement media strategies, including media buys and negotiate with advertising media. Date: 2015-2020.

Broward County Convention Center Hotel and Expansion. Role: Public Relations, Stakeholder Liaison. In 2015, the Board of County Commissioners approved moving forward with expanding the size of the Broward County Convention Center and adding a new headquarters hotel. After an extensive procurement process, Matthews Southwest Inc., (MSW) a nationally renowned and highly accomplished developer and team, was ranked as the #1 development firm by the Board. Source: http://broward.org/ccexpansion/Pages/Default.aspx Date: 2017-Present.

Broward County Port Everglades Master/Vision Plan Third Update. Role: Community Outreach, Stakeholder Liaison and Public Involvement Officer Support Services. For the third update to the Broward County Port Everglades Master/Vision Plan, the team will review the 2014 adopted Master/Vision Plan, related economic activity, financial and market forecasts and conditions and other relevant port/county planning documents as approved by the Contract Administrator. Date: 2018-Present.

Broward County Port Everglades Public Relations and Stakeholder Liaison. Design & Engineering Services Slip 1 Expansion. Subconsultant to HDR. Role: Community Outreach, Stakeholder Liaison and Public Involvement Officer Support Services. Provide support to the Design Team by providing project team facilitation, document control support to the port director's office, port clients and petroleum sector industry located at Port Everglades. Date: 2015-Current.

City of Fort Lauderdale Transit Master Plan. Role: Community Outreach Services. Website Development, Public Opinion Polling. Provide Public Involvement and Marketing Services to assist in the analysis of the City of Fort Lauderdale Community Bus System in order to enhance mobility for all users of the System for the City's Transportation and Mobility Department. The City of Fort Lauderdale was successful in obtaining a two-year grant from the Federal Transit Administration's (FTA) New Freedom Program as a sub-recipient to the South Florida Regional Transportation Authority (SFRTA). Date: 2016.

City of Fort Lauderdale. Fort Lauderdale Executive Airport (FXE) Disadvantaged Business Enterprise (DBE) Program for Fiscal Years 2015-2017. Role: Provides support services to assist the City of Fort Lauderdale Executive Airport in updating their current Disadvantaged Business Enterprise (DBE) program and establish a new DBE program goal for Fiscal Years 2015 to 2017 in anticipation of receiving Federal grant funding. Date: 2014-2017.

City of Fort Lauderdale, Envision Uptown, Inc. Role: Community Placemaking, Public Relations, Marketing, Creating an Urban Village. Envision Uptown, Inc. is a nonprofit group of front runners in business, education, and government working to develop a specific 50-year physical vision plan for the transformation of Uptown Fort Lauderdale to transform the area, serving as the largest employment hub in Broward County, from its present workplace-based and car-dependent development into a livable, walkable, and transit-ready urban neighborhood of offices, residences, parks, and hospitality, civic and retail buildings.

ADEPT, with an aligned vision in transforming Uptown Fort Lauderdale into a transit-ready economic development space and business community, support the redevelopment efforts to establish this area. Our team is responsible for the coordination and execution of all Board meetings, marketing strategy creation and informational email newsletter (e-blast) development and distribution to

targeted lists of businesses in Uptown Fort Lauderdale, with a Website Development and Design contract pending. Date: 2013-Present.

City of Fort Lauderdale, Imperial Point Civic Association. Advertising, Marketing, Public Relations & Communications, Web Design and Maintenance. Imperial Point is a neighborhood of 1,470 homes established in October 1960. ADEPT was hired to provide design and maintenance of a new, robust website for the volunteer-run Association, develop the organization's Facebook page and conduct daily management duties, including relaying of updates to residents, community event information and City news. Additionally, services provided by ADEPT include the development of graphic materials, email newsletters and social media updates. Date: 2014-Present.

South Florida Chapter of Advancing Women in Transportation [WTS]. Role: Communications Chair. Responsible for outbound communications including digital and print media. Successfully implement event and campaign strategies in conjunction with fellow WTS members and the Chapter's Board of Directors. Website and social media management and maintenance. Coordinate chapter events with elected officials, government agency leadership and staff. Press release development and distribution to local and regional media. Video production, storyboard creation and photography services. Date: 2014-Present.

Broward County Future Conditions 100 Year Flood Elevation Map. Subconsultant to Geosyntec Consultants. Role: Community Outreach, Stakeholder Liaison and Document Control support. This update will mark a vital ad- vancement in our region's resiliency efforts, with improved standards for flood protection and benefits relating to our participation in the National Flood Insurance Program. Date: 2018-Present.

FDOT D4 Design Services for Transit Improvements along SR-5/US from the Miami Dade County Line to SR-842/ Broward Blvd. Subconsultant to Caltran Engineering. Role: Community Outreach, Stakeholder Liaison and Public Involvement Officer Support Services. Responsible for Community Awareness Plan (CAP) which its objective is to notify local governments, affected property owners, tenants and FDOT staff of proposed construction and the an- ticipated impact of that construction. Date: 2017-Present.

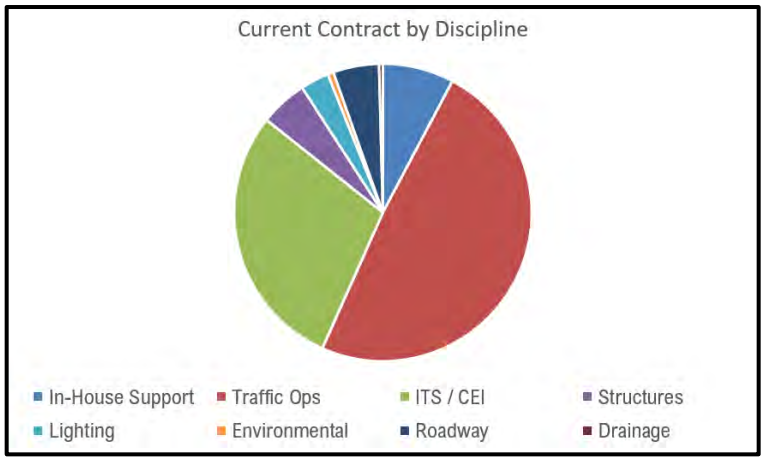
Port Everglades Public Relations and Stakeholder Liaison for Design & Engineering Services Slip 1 Expansion. Sub- consultant to HDR. Role: Community Outreach, Stakeholder Liaison and Public Involvement Officer Support Ser- vices. Provide support to the Design Team by providing project team facilitation, documento control support to the port director's office, port clients and petroleum sector industry located at Port Everglades. Date: 2015-Present.

EVALUATION CRITERIA

2) Project Approach

(2) PROJECT APPROACH

A. Describe the Prime Vendor's understanding of the project scope and its approach to managing project work orders. Discuss the management challenges your team foresees and how your approach will resolve any issues. Include how the Prime Vendor will use and manage subconsultants in the project.



As previously mentioned, Metric has served Broward County for the past eight years, starting with the Traffic Signalization Improvement Program Continuing Services Contract (2011), and more recently, our current Continuing Engineering Services for Traffic, Roadway, and Civil Engineering Services (since 2015). The current contract includes a full spectrum of engineering services including Traffic Operations, ITS, CEI, Structures, Lighting, Environmental, Roadway, Drainage, and In-House Support. In fact, the adjacent Figure shows just how comprehensive and diverse the Metric Team's service offerings have historically been for the County. Because of this experience, we have an unmatched understanding of the project scope, what projects to expect, and have a tried-and-true approach on how to tackle ANY task/project that may be assigned to the Metric Team.

We are also aware of the impact that the November 2018 passage of the one-cent surtax has on the project load for this contract and the expectations to deliver the projects in a very timely manner. The Metric Team offers the depth of experienced personnel, responsiveness and experience to be the team that Broward County needs that can hit the ground running with absolutely no learning curve, which is key to the County's success in delivering their many projects for the citizens of Broward County.

Understanding of Project Scope

As stated in the Request for Proposals (RFP), this contract requires assistance with engineering, design, plan preparation, implementation, construction management and related services for proposed traffic, roadway and civil engineering improvements. The improvements proposed include traffic signal span-wire to mast arm conversion projects, school zone flasher improvements, video vehicle detection upgrades, traffic signal engineering and communications systems improvements, street lighting, Complete Streets, and roadway infrastructure improvements.

These services will also include the following types of work efforts: field surveying and base mapping, geotechnical investigations, subsurface utility engineering, utility coordination, civil and roadway engineering, overhead and underground infrastructure design, environmental engineering, traffic engineering, communications and network design and implementation, right-of-way, structural analysis and design, foundation engineering, permitting, Maintenance-of-Traffic (MOT), Construction Engineering and Inspection (CEI), public involvement, etc. **We also understand that these services are to be issued based upon projects identified with the highest priority.**

We have completely reviewed the scope of services for this project and have performed services that mirror this scope for the County over the past nine years. This review combined with our understanding of these types of projects and understanding of the County's preferences and procedures will enable us to manage this project effectively for Broward County. We also meet the Unique Challenges of the Continuing/Miscellaneous Contract - The main difference between this contract and a project specific agreement is having the ability to assign personnel anywhere in the County; provide them anytime they are needed; and provide them on very short - or (in an emergency) - no notice. Metric offers you a TEAM that includes qualified personnel from a combination of large, small, and specialty firms that have offices countywide and

statewide. We understand that we will have multiple, simultaneous working, supporting and reporting relationships with personnel in the County Office and that the related administrative tasks for managing the workload is as important as the field services we provide. Our past experience will allow us to meet your needs quickly and effectively.

For Consideration

Potential Projects

With this contract, we anticipate early projects to be mainly intersection re-design to enhance smoother traffic flow, potentially with right turn lanes and/or longer left turn lanes, sidewalks, bicycle lanes, etc. – in essence, similar to what we are doing on our current contract. We are aware of the transportation sales surtax that was passed in November 2018, which will largely fund mast arm upgrades and be applied to signal installation projects. The Surtax Projects will increase the number of design and construction projects over the next 30 years, which means the County needs to utilize qualified consultants *(we have 16 capable subconsultants on our Team!)* to assist in much of these improvements, and to help ensure that we are a key community collaborator in ***creating connectivity, relieving traffic congestion, improving transit service, and expanding the availability of multimodal transportation.*** For instance, Metric recently met with the County to discuss CEI "punchlist" items (discussed below) that our designers as well as our CEI staff will consider moving forward with every project.

We understand that in addition to traffic signal updates (while always making sure we identify R/W early to ensure signal improvements can be accomplished without obtaining easements), other focused projects may include fiber optic network projects, roadway intersection expansions, School Zone Flasher, and Complete Streets Projects. Broward County's current focus is on School Zone Flasher Projects in order to improve pedestrian mobility in areas near schools throughout the District. The scope elements include records research, signalization, signing and pavement markings, surveying and mapping (control and base map), utility coordination, subsurface utility engineering, permitting, soil borings, structural analysis of mast arms and public notification. Our Team anticipates removal of the existing power ground mounted flashers and installing new Solar Dual LED Ground Mounted Flashers. We are intimately familiar with Broward County's design process and preferences for school zone upgrades and the latest FDOT school zone treatment criteria – there will be no learning curve in our methodology and approach to these projects.

A Look to Future Technologies & Incorporation of TSM&O Principles

Our understanding of this contract and approach to any project that may be assigned begins with the foundation of Transportation Systems Management & Operations (TSM&O) initiatives, which call for a systematic, performance-driven approach to improve safety, manage congestion, and maximize highway operations. Employing our knowledge and experience with TSM&O strategies and technology, we aim to improve the County's existing roadway infrastructure. Some of these strategies include Active Arterial Management (AAM) and Integrated Corridor Management (ICM) which applies active arterial signal retiming to help divert traffic more efficiently when incidents occur. Metric provides AAM and ICM for numerous clients such as the City of Miami Beach and FDOT Districts 2 and 5. In addition, our Team will look to adaptive traffic signal control, superior vehicle detection systems, dynamic traveler information, School Zone Flasher Systems, alternative intersection designs and more to be used as tools to help the County improve their overall transportation system. Another large part of TSM&O is making sure to plan for Operations & Maintenance (O&M) costs. Metric will work closely with O&M staff to learn what equipment and strategies work or won't work within the County.

Metric has assembled a team of proven leaders in the TSM&O field who have demonstrated time and time again their commitment to the State of Florida and its transportation system. We are uniquely qualified to assist the County in achieving its goals through this contract because of the Metric Team's unmatched experience in the areas of TSM&O, arterial analysis for congestion improvement, and local South Florida experience. Our Team understands the challenges associated with this contract and knows how to convert them into opportunities with a keen eye on future technology incorporation.

CEI "Punchlist" Considerations

As mentioned, Metric met with the County to understand what types of concerns are occurring near construction project closeout and what seems to be recurring issues throughout the County identified by maintenance personnel. It will be our Team's focus to address these issues as our CEI staff continue to oversee construction. They will be mindful of asphalt issues (uneven asphalt joints and more); ADA ramps not installed per ADA requirements - starting to collect water because of this; Signing & Pavement Marking (S&PM) issues (damaged signs or missing RPMs); concrete/paver issues, drainage issues, landscape issues, and miscellaneous issues in general. Our Design group will implement changes to help increase the constructability of projects and create plans sets that give CEI staff more enforceability during construction.

For instance, for cracked sidewalk and curbs, our inspection staff will need to enforce saw cutting concrete and removal of any cracked concrete sidewalks/curbs with a clean joint and a full concrete flag. We will pay greater attention to areas that the contractor damages and ensure they replace them. Also, our designs will incorporate notes for intersections to include removing and replacing all damaged concrete within construction limits in the takeoff of quantities for the new intersection projects.

Approach to Managing Project Work Orders

Although the design requirements, procedures and engineering products may vary from one project type to another, **Metric adheres to a standardized project approach that provides a timely and cost-effective design solution for each task authorization.** Metric Engineering's specific experience gained from our Broward County Traffic Signalization Improvements project and Broward Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services - coupled with experience gained from more than 50 similar FDOT, County, and City continuing services contracts - enables us to maintain multiple short, overlapping project schedules on simultaneous assignments while efficiently providing the required engineering services. We also offer a Broward County office (housing both ITS, Signalization, and CEI staff) that is fully supported by our Miami, Jacksonville and Orlando-based offices.

Immediately following receipt of Notice-to-Proceed for each Task Assignment, a kickoff meeting will be held with the Broward County Project Manager, staff, and the key assigned Metric Team members (including any subconsultants). The purpose of this meeting will be to introduce the roles of various team members and to recognize the overall project objectives. At this meeting, a detailed schedule utilizing MS Project with project tasks, milestone events, and agency review periods will be provided for review. Metric will meet with jurisdictional agencies, utility owners, property owners, etc., as required. Within five working days of every meeting, Metric will prepare and distribute meeting minutes summarizing discussions and assigning upcoming task responsibilities and timeframes. An engineer's construction cost and time estimate will be included with each submittal. Metric will maintain close and continual coordination with utility owners through meetings and the transmittal of updated plans and schedules. Invoices will be prepared in the format prescribed by the County and submitted along with written project reports describing completed and upcoming work efforts.

A specific approach to TWO-based management is detailed below under B. *General Approach to Task Work Order-Based Contracts.*

Metric will perform roadway design tasks using GEOPAK Roadway Design Software. If required, the end product can be translated into the latest version of AutoCAD and/or plotted on 24" x 36" plan sheets. Metric will provide all required pavement designs other than those standard designs provided by the County. The Metric Team will conduct topographic and right-of-way surveys when such services have not already been provided by the County. In addition, we will provide permitting, environmental assessments, and geotechnical services as required. Metric will comply with the latest FDOT Design Criteria as modified by the specific requirements of the Broward County Public Works and Engineering Departments.

Management Challenges & Potential Resolutions

The following management challenges and potential resolutions are from Metric's 100+ Continuing Services / Districtwide / Miscellaneous contracts over the history of our firm.

Challenge	Resolution
Resources	The ability to successfully handle multiple concurrent TWOs with accelerated schedules while maintaining quality and consistency requires not only similar experience, but a consultant with LOCAL Broward County experience. We have an abundance of resources including 16 subconsultants (eight certified CBE's) that allow a duplication in qualifications to tackle multiple projects at once. These resources are located throughout Florida with a central focus on South Florida.
Schedule	Our solution to expedited or aggressive schedules (or multiple TWOs at the same time) is based on our familiarity with Broward County staff (Project Manager and Highway, Traffic and EMO divisions, etc.). Our Team will coordinate very closely with staff to identify any critical issues and concerns and update design plans, even if it means working with a short time frame. In addition, we perform utility, R/W, and permitting coordination as soon as possible in order to get ahead on these elements that can significantly delay a design schedule.
Quality	On any TWO-based contract, the turnaround times are typically short with aggressive schedules, and the critical issue is always making sure that quality is not jeopardized for the sake of meeting the schedule. Our many solutions to this challenge include: **Resources –** As we have mentioned, we have a large number of resources so we can truly provide an independent review. We will schedule QC Reviewers early on and build this into the schedule. This will also be discussed at our weekly internal meetings as action items throughout the life of the TWO to ensure QC is properly maintained. Metric's QA Manager ensures that quality control was maintained not only within Metric but our entire team (our subconsultants will follow the same QC plan as Metric). **Constructability –** We perform concurrent reviews with our CEI/field Team to ensure the design is constructible as shown. **Consistency -** We also conduct a Lessons Learned meeting internally after each submittal in order to discuss the comments and responses with all of the Team to ensure that the same mistakes/comments are addressed with any future submittals or other TWOs. We have a database of major comments that have come up and have it available to the Team. This could be utilized as a checklist for the QC reviewers to ensure no recurring mistakes. ***With this solution, we will ensure that quality is never sacrificed for the sake of the schedule.***
Flexibility for Future Technologies	With Connected Vehicles (CV) and Automated Vehicles (AV) technologies becoming a prominent subject in the transportation industry, we will manage this contract with an eye for the future. This includes adaptive signal technologies and more. We can bring awareness to County members and partnering agencies regarding future CV/AV plans, keeping the County abreast of changes in these ever-evolving technologies. If the County is acceptable to advanced technological considerations, our Team can provide early coordination with roadway, traffic, and construction teams to try and include elements to aid in CV readiness. In addition, new technology brings its own challenges including data management and utilization. Our Technology team can assist with this and identify the County's role and help define the type of data needing to be collected, how to leverage it, how long to retain it, and more.

Problem Solving Approach

At Metric, we work diligently to incorporate our philosophy of early issue resolution, during both the design and construction phases, to address and resolve issues as quickly as possible. We will proactively anticipate issues at every stage of development, such as changes in the design and unforeseen conditions that may develop despite the diligent efforts made by the client, our team, contractors, and other stakeholders.

With regards to methods used to prevent and/or resolve conflicts, Metric uses a hands-on approach to keep the lines of communication open with the team. During the design phases, Metric will aggressively seek out and address any design problems during our weekly design review meetings. We will collaborate with any necessary design disciplines to identify and present design solutions to the County Project Manager. We will prepare detailed meeting minutes from our regular progress team meetings to include specific action items and milestone dates to accomplish issue resolution as early as possible.

During the construction phase, the project team leader will continue to oversee and maintain continuity with the entire team on a weekly basis. This oversight helps monitor and confirm project progress and solves any field issues occurring through the course of the construction activities. Our project team's priority is on-going construction progress, your satisfaction with our observation, and confirmation of weekly project progress.

The Metric Team is available 24/7 via cell phone to immediately respond to and record any issues in construction activities and to provide follow-up actions to track resolution with all team members. Our established communication approach maintains positive contact from design to project close-out.

We will ensure timely and detailed review of all submittals in order to expedite the design and construction process. We also respond and visit the site to address immediate problems in response to unforeseen conditions, along with weekly report(s) to confirm issues are resolved in a timely manner. Early issue resolution provides a savings in time and money for the client and all stakeholders.

Management of Subconsultants

Metric has assembled a second-to-none team of experts specifically chosen to provide the best possible services for this project. Coordination and communication with our subconsultants will remain a priority from the beginning of each issued work order through the delivery of the final product. We host kick-off meetings, weekly team meetings, project management meetings, and hold additional opportunities for project issues to be resolved/discussed. Metric has established a close working relationship with nearly all of the subconsultants on our team through teaming on previous similar projects. Those relationships will directly translate into this project and be fostered even further during this contract.

Of note, we are committed to exceeding the County's CBE goal of 25% on this contract. As you can see below from our previous and current contract(s), we have typically met or exceeded this goal. We specifically have eight CBE-certified firms committed to this contract so that we can maintain our high CBE utilization percentages.

Traffic Signalization Improvement Program Continuing Services ***(CBE Goal of 22%)***

- Prime Paid to Date - $4,704,968.81 | CBE Paid to Date - $1,139,642.53 → **CBE Percentage: 24.22%**

Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services ***(CBE Goal of 19%)***

- Prime: Paid to Date - $4,097,215.93
- Allotted Funds to CBE (upcoming billing cycle) - $743,852.47* → **CBE Percentage: 18.16%***
- **[Actual CBE Paid to Date - $591,222.74 → **CBE Percentage: 14.43%]***

B. Describe the Prime Vendor's approach and understanding of engineering services and responsibilities under a continuing engineering services contract.

Approach to Task Work Order (TWO)-Based Contracts

This contract requires engineering services for a variety of traffic engineering and planning services. From past experience, we are aware that project requirements, procedures, and engineering products vary significantly from one contract type to another. Our standardized project approach enables us to efficiently provide engineering services and maintain short, overlapping project schedules on a number of simultaneous assignments. The following paragraphs summarize our approach to successfully completing the critical elements of the primary work categories listed above.

Project Management

Our approach combines outstanding leadership and experienced personnel with a record of success in contract administration. Our key management staff for this project utilizes the expertise and experience of our Project Manager, Dale W. Cody, PE, PTOE, combined with the strong support of lead experts in each of the varying tasks, and a highly skilled traffic operations & planning staff. We have excellent support and specialty staff for the many facets of this contract (for instance; S&PM engineers, signal retiming engineers, signal design engineers, ITS engineers, data collection staff, PD&E and modeling experts, etc.). These key individuals have worked together on literally hundreds of studies and designs and will work together to handle all aspects of contract administration for this contract.

As with all of our prior and current TWO-based contracts, Metric will focus on schedule, constant communication, quality control and cost controls to ensure responsive and quality services. Monthly progress meetings will be held (or as desired by the County) to discuss all work assignments, status, project issues and action items. We will document all meetings with meeting minutes and distribute to all involved agencies and stakeholders. Having worked for the County for almost a decade, we understand the quality, cost effectiveness, and time requirements that the County demands, and are familiar with the format in which the County prefers their information. Essentially, we have eliminated the learning curve and will be able to provide a product that meets or exceeds your requirements in the format you desire.

General Approach to Task Work Order-Based Contracts

Our approach to an assignment will begin with developing a complete understanding of project objectives starting at the notification of a pending assignment. The notification will typically include a brief description of the proposed work and possibly a concept drawing. Through experience gained on past and current continuing services and minor design contracts, Metric has developed a project approach that will maintain quality production and meet schedule while reducing cost (when possible). The below approach highlights our process for all tasks:

- Initial Field Reviews. Metric will visit the project site to verify project intent, validate the feasibility of the project goals and determine the need for additional improvements. This visit will provide first-hand knowledge of potential issues for each project including existing drainage, ADA concerns, environmental impacts, R/W concerns, utilities and more. These findings and the resulting recommendations for a practical solution will be shared with the County's Project Manager so that a mutual understanding of the project and concurrence on the scope of the improvements can be obtained.
- Scope and Fee. The proposed scope will be utilized to document the improvements that will be included with the project and to identify elements that are not included in the scope. Any needed edits to the scope will be expeditiously resolved between Metric and Broward County, and the scope will then be utilized to determine the necessary man-hours and staff requirements for the project. The scope will also be used to evaluate the current project schedule. The finalized man-hours, scope and updated schedule will then be sent to the County's Project Manager for review. Metric understands the value of getting the proposed fee estimates to the County quickly to allow plenty of review time before the negotiations meeting. This allows for timely execution of the task. With the execution of the work authorization - we will immediately get to work!

- Contract Management / Coordination. Our management/coordination approach enables us to administer multiple, short, overlapping project schedules that are being performed by multiple design teams. Dale Cody will be the primary point of contact for the County Project Manager and will act as liaison between the County and our Team. A kick-off meeting will be scheduled for each project. Metric will also implement weekly internal team meetings that track new task work authorizations, on-going task work order progress, issues/resolutions, resource distribution, and more in an action item list, which will be available for the County's Project Manager. Coordination meetings will be held, as required, to apprise the County of the contract's progress. Mr. Cody will coordinate with all stakeholders involved with these projects.
- Resources. Metric's resources include six (6) regional offices statewide, and as mentioned, more than 140 traffic and planning personnel to handle multiple tasks while maintaining strict QA/QC processes. This allows us, oftentimes, to exceed project schedules. Additionally, Metric's large and experienced Senior CEI staff will be utilized to provide constructability reviews for all projects.
- Post-Design. Our team members are committed to each project until construction is complete and will respond quickly to any post design needs.

We understand that the term of this contract is for a period of three (3) years with two (2) one-year renewals with a budget of $3,000,000 each year. Our team is equipped and available to provide these services to the County during this timeframe. As with everything we do at Metric, we will spare no resource in giving Broward County our very best effort and commit to serving as an extension of your staff with the utmost professionalism.

Quality Assurance/Quality Control (QA/QC) Program

Metric's QA/QC Program promotes efficient procedures that yield a high-quality product meeting all task requirements and goals. The plan ensures that all documents, studies, and reports will be complete, orderly, appropriate for the intended purposes, and will conform to Broward County requirements. To assure that this quality is consistently achieved, Metric's staff follows standardized procedures for the duration of each project. Quality work is assured by assigning highly qualified, responsible professionals and staff, trained in their field of expertise, to Metric's in-house QC program. These professionals produce or directly supervise the work that is generated and are required to personally check the work for conformance to all project requirements. Quality submittals are also assured through peer reviews conducted by key Metric members not charged with the production of the project's deliverables. Reviewers are selected based upon their experience, qualifications, and licensing status, while they are directed to assure that the reviewed work conforms to the task requirements. One of the most significant strengths of our Team is the redundancy of qualifications that we have for ALL tasks. This means that a high-quality peer reviewer is ALWAYS available for performing a QC review.

METRIC ENGINEERING, INC. QUALITY ASSURANCE / CONTROL				
RESPONSIBILITY	TASK OR DISCIPLINE			
	INITIAL	DATE	INITIAL	DATE
PLOT SET DATE				
CHECKING (YELLOW/RED)				
CONCURRENCE (BLUE)				
INCORPORATION (YELLOW)				
VERIFICATION (GREEN)				

QC Process

QC procedures will be implemented that ensure the technical adequacy of all work products through the use of repeated rounds of technical review and confirmation. The scope of services will be reviewed and referenced throughout the project and checked before each submittal to ensure all requirements are met. Comments and recommendations from the County will be checked prior to each submittal to ensure that all comments were addressed. The following process identifies our general QC procedures and our QC plan specific to traffic data collection.

Our Team's QA Managers, Charles B. Stratton III & Robert Linares, PE, will identify the responsible professionals performing the work and identify QC Reviewers (not involved with the task directly) and indicate the process for submission preparation and checking.

- The review process includes:
  - All aspects of the deliverable will be reviewed.
  - Responsible Professional constantly checks throughout the process.
  - QC reviewers check during critical junctures of the process.
  - Checker/Back-Checker.
  - Check sets are produced QC Stamp.
  - Certification Statement signed by QC Peer Reviewer.
- QC Checklist Form – Checked and Back-Checked.
  - Signed by PM, QC Checker, QC Back-Checker.
  - All of our subconsultants will also adhere to our QA/QC processes and be checked by Metric
- QC documentation, including subs, is compiled and reviewed.
- QA/QC Manager ensures that the process has been appropriately followed and certifies as such. Key components to our Team's entire QC process is:
  - Making sure our Team has enough experienced independent QC reviewers.
  - Performing monthly/quarterly reviews of workload balancing and duties.
  - Never cutting corners when it comes to QC.

QA Process

QA reviews of the project submittals will be conducted by a team consisting of experienced personnel who are not directly responsible for performing the initial work activity. Our Team's P-I-C & QA Manager, Charles B. Stratton, oversees all Production activities in Central Florida and will conduct an in-depth QA Review to ensure overall quality prior to submittals. We are committed to providing Broward County with the highest quality finished product. Our QA/QC Plan helps to ensure success in all phases of the project. Our Team has a reputation for its commitment to providing a high-quality product and we are proud of our standard of excellence in civil engineering services.

In addition, our Team's approach to continuing engineering services such as handling multiple TWOs, we have also provided our Team's approach for the following questions (C – E) and several additional scope items following Question E.

C. Describe the Prime Vendor's approach to alternative analysis and design for an intersection improvement project that includes new mast arms, right-of-way constraints, overhead and underground utility utilities, complex signal operation, and heavy congestion throughout the day.

Alternative Analysis & Design for Intersection Improvements

Metric has a wealth of experience in all types of traffic studies, ranging from the more traditional ones such as signal warrant analyses to more complex or technological studies such as roundabout analyses, intersection control evaluation (ICE) analyses, studies on the best type of adaptive signal control for corridors and systems, and various Transportation Systems Management and Operations (TSM&O) studies. We perform these services for an array of clients, including FDOT, various cities and counties, and Broward County, where we are currently conducting an adaptive signal control study to determine the best adaptive technologies for numerous corridors throughout the county.

Because of our strong focus on ITS & Traffic Operations, our traffic group routinely works side-by-side with our technology and integration groups. This gives Metric the unique ability to understand and work within the area where Traffic Engineering and ITS come together. For instance, Automated Traffic Signal Performance Measures (ATSPM) increase safety and efficiency by providing high-resolution data to the Traffic Management Center (TMC). Metric has performed initial feasibility analyses for ATSPM for FDOT District 1, 3 and 5, designed ATSPM upgrades for corridors such as SR 3 in Brevard County for FDOT District 5, and even provides maintaining agencies assistance on operating with ATSPM through our FDOT TMC Operations and other continuing services contracts. Each of these tasks has given our groups the opportunity to work together to solve problems and determine the best ATSPM system for our clients. Broward County is well situated to employ ATSPM with a comprehensive communication network that is currently being converted to fiber optic cable, modern TMC that is shared with FDOT District 4, and focus on upgrading controller cabinets to the newer Type VI with all new intersection designs. Metric is poised to help Broward County take its signal technology and roadway infrastructure to the next level and become the best in the State.

Technology is not the only way to gain more efficiency out of saturated or even oversaturated corridors with no right-of-way. Metric is familiar with innovative intersection designs, including those in FDOT's ICE process, as we help FDOT find solutions to growing congestion. It is important to gain as much information on Right-of-Way (R/W), current and future projected traffic volumes and other roadway features as possible when looking into innovative intersections. This will guide the decision process for a possible innovative design and help to quickly rule out alternatives, simplifying and expediting the analysis process. Metric has the experience in modeling traffic, performing construction cost estimates, and calculating benefit-cost analyses to help Broward County vet innovative designs.

Traffic Signalization Intersection Improvements

Metric's staff has designed numerous traffic signals for Cities, Counties, and the Florida Department of Transportation and specifically for Broward County. We are proud to have experience in designing mast arm traffic signals for Broward County and will utilize this experience, including lessons learned and knowledge of the County's design preferences in preparing our designs, as will be noted in greater detail later. The Scope of Services includes the design of new mast arm traffic signals, the conversion of span-wire signals to mast arms and overhead school flashers to structural mast arm signals. Metric's approach to these designs follows:

Traffic Signal Design

The design process will begin with the Design Team performing an initial field visit to determine the overall constraints and identify challenges. These will be incorporated with the project survey into the "schematic design" that is submitted to the County. A plans-in-hand review will ensue, where County staff and Metric share ideas for the design. Metric believes it is important to share multiple schematic alternatives for an intersection if a known problem needs to be addressed. We did this for the intersection of Broward Boulevard and 15th Street by offering multiple mast arm and pedestal signal configurations, as we knew that very limited right-of-way and numerous utilities would restrict proposed upgrades. The schematic meeting typically discusses various topics, such as: (1) pedestrian features, (2) left turn phasing and signal

timing design, (3) concerns on lane alignments requiring split phasing, (4) pre-emption, (5) existing interconnect, (6) installation of fiber optic cable if applicable, (8) utilities conflicts, (9) applicability of Broward County mast arms, (10) any internal issues specific to the intersection, such as the need for blank-out signs, (11) maintenance concerns, such as areas with poor drainage and (12) project schedule. Metric believes that the schematic meeting could also be conducted as a field review to add value.

The design process will begin immediately after completion of the schematic meeting. The Design Team will schedule geotechnical borings and call in a design ticket to the "Florida Sunshine One Call" system, which will result in field locates and kick off utility coordination. The names of all utilities with contact names and phone numbers will be included on the signal plans, to ensure the Contractor knows who needs to be contacted prior to beginning construction.

The existing field conditions will be drafted in CADD from existing plans provided by the County if available or developed using field survey. Metric will also incorporate data from County GIS maps, such as locations of underground water systems. With the existing conditions in CADD our Design Team will place poles based on clear zone requirements, power service locations, overhead power, underground utility locations, right of way lines and constructability, including limiting conflicts with the existing intersection components. The Design Team Engineer of Record (EOR) will meet with all involved utilities on site prior to digging any test holes to discuss the proposed work and define the proposed pole locations. The Design Team EOR will then direct the subsurface team where to dig the test holes. Approximately three test holes will be dug at least 8 feet deep per proposed pole location. Our intent is to positively identify a location where there are no utilities and a mast arm can be installed; Metric policy is to be on-site during soft digs to ensure that this can accurately happen. Being present during soft digs also allows us to coordinate with the soft dig team to shift mast arm positions based on actual underground utility locations. A standard utility form will be filled out for each intersection, which shows the location of all utilities found near the proposed poles. Every effort will be made to avoid relocating utilities. If no location can be found free of utility conflicts, the Design Team has the experience to know which utilities are the least difficult to relocate. The Design Team will then meet with the utility companies and coordinate all utilities needing relocation. They will discuss the amount of time needed for relocation and the contacts to be notified prior to beginning construction. This information will be included in the plan notes. After the plan is complete, a copy of the plan showing the relocation along with a letter stating the work to be done and the timeline agreed upon will be sent to the utility company. Completed plans along with a letter stating no relocation is necessary will be sent to all remaining on-site utilities.

Initial plans design is also when coordination with the local jurisdiction will occur. Metric has the experience through our previous signal designs to understand how to coordinate with the various cities within Broward County and how to navigate their individual permitting and review processes. Initiating this step early on and continuing coordination with the local agencies is key to ensuring that the intersection design is not held up. Metric also has experience with environmental permitting needs and has the expertise and flexibility to meet the requirements of the South Florida Water Management District and U.S. Army Corps of Engineers (USACE). This was done recently when we gathered extra field measurements and created a canal cross-section sheet and special environmental plan sheet to gain USACE permit approval for the intersection design of Griffin Road at Dykes Road, which is adjacent to the South New River Canal.

With pole locations determined, the design will move to the next phase, walking the job to ensure the best location for conduit and pull boxes keeping in mind the following: (1) locations with the least amount of sidewalk to minimize directional bores (2) location of ditch bottoms to minimize standing water in pull boxes, (3) location of drainage structures to eliminate conflicts, and (4) overall constructability. These things will also be considered when placing the controller cabinet, along with power source and interconnect locations. Additional items that will be considered during design are: (1) Sight distance issues caused by horizontal or vertical curves and bridges, which would require signal ahead signs, horizontally mounted signal heads, and/or flashers, (2) mast arm location with regards to existing overhead power lines (3) whether the nearest signal head will meet the minimum 40 feet and the farthest will meet the maximum 180 feet from the stop bar as defined in MUTCD. The Design Team will ensure adherence to FDOT standards, Broward County standards, and the MUTCD.

The Design Team will proceed with locating the signal heads in accordance with the MUTCD and County criteria using horizontal signal heads, a minimum of 8 foot spacing between signal heads, backplates with retroreflective borders on all

approaches, polycarbonate signal heads in corrosive environments and aluminum signal heads in non-corrosive environments. This information will then be forwarded to Structures for analysis, where the Structural Engineer will use the result of the analysis and geotechnical information to complete a mast arm assemblies data table. The Design Team will verify that clearance heights are met for the signal heads per MUTCD and County Standards.

Internally illuminated street name signs will be designed in GuideSign using Broward County's most recent design standards and will be included on the signal plan sheets. General notes, signal head and pedestrian head details, signal phasing, controller timing chart, pre-emption information (if any), and utility contact information will be included on the signal plan sheet. Type VI cabinets with 2070 NEMA traffic controllers, compatible with the County's ATMS system, will be used. The plans will ensure that copper communications will be able to be replaced with fiber optic and cellular communications. In addition, Video Detection Systems (VDS) mounted on the mast arms will be included in the design, with a single camera on the lane line between the inboard through lane and left turn lane or two cameras per approach for approaches with more than 5 lanes. The signal design will also include the installation of new signal cables, power cables, video detection cable, pre-emption cables (if any), and communication cable from the controller cabinet to the equipment. The existing controller timings will remain with exception of additional pedestrian phases and timings associated with the installation of new pedestrian crosswalks to be coordinated with the county. The controller timings for new pedestrian signals will take into account the pedestrian walking speed per the MUTCD, the traffic volumes (if any) in the study to determine the maximum green times, and the yellow and red times as dictated by FDOT TEM and Broward County standards. The pedestrian pushbuttons will be installed within ten (10) feet of the edge of the road and within five (5) feet of the edge line of the crosswalk to ensure pedestrian pushbuttons are within easy reach of pedestrians who intend to cross each crosswalk. The design will avoid combined curb ramps or curb ramps bordered by sidewalk curb, such as types D through G per Broward County preference.

For the installation of new traffic signals, Metric will review the signal warrant study for phasing, sight distance issues, or any other observed concerns that should be addressed by the design. The general notes will include information to flash the signal for no less than 7 and no more than 14 days prior to the turn-on inspection, with contact information for scheduling with the County. Typically, new signals require the use of Portable Changeable (Variable) Message Signs for this same time frame as a reminder to the public of the new traffic signal. This is especially critical when a flashing beacon is converted to a fully operational signal.

The Design Team will place all striping, signal pay items, and quantities on separate plan sheets for clarity and will also include a signal detail sheet. A Tabulation of Quantities (excel spreadsheet) will be completed showing the total quantities and estimated project cost. Once the initial plan and Tabulation of Quantities is completed, the plans will go through Metric's Quality Assurance/Quality Control (QA/QC) process before forwarding them to the County in PDF format for initial review. After the review is completed, a final field evaluation will take place to discuss review comments and solidify the design. Comments from the review will be implemented into the final design and quantities updated. The plans will then be sent for a final QA/QC peer review and then submitted once again to the County in PDF format. After approval, the Design Team will submit electronically signed and sealed plans, the electronic files including CADD files and project correspondence, and the Tabulation of Quantities.

School Zone Flashers

There has recently been a focus on school zone flashers upgrades within Broward County. The scope elements for the design of these upgrade include records research, signalization, signing and pavement markings, surveying and mapping (control and base map) unless provided by the County's own surveyors, utility coordination, subsurface utility engineering, permitting, soil borings, structural analysis of mast arms and public notification. Overhead school flashers are typically installed for school zones along multilane roadways. Recent updates to the Florida Statutes and the FDOT's Speed Zoning Manual have changed the way school zones are designed. Metric is very familiar with the updated process from our work with Broward County and other local agencies. We are also familiar with the plan's requirements for Broward County

school flasher upgrades. The Design Team will set up an initial field visit with County and school representatives if applicable to discuss the primary work requirements, observe existing conditions and determine issues/concerns surrounding the design. At the field meeting, the Design Team will discuss issues such as (1) length of the school zone, (2) proximity of signalized intersections, (3) location of school crossings, (4) proximity of school and walking patterns, (5) location of overhead and post-mounted flashers as opposed to time-of-day signs, (6) treatment of parking restriction signs, as well as items discussed at the process for traffic signal designs.

Similar to the process for traffic signal installations, the Design Team will have nearby utilities located and will develop a list of utility companies at the proposed school flasher locations. The Design Team will have an on-site utility meeting and include the utilities contact information on the signal plans prior to construction. The existing conditions will be drafted in CADD. The Design Team will place poles, power service locations (if necessary), overhead power, underground utility locations, and right of way lines. The design team Engineer of Record (EOR) will meet all involved utilities on site prior to digging any test holes to discuss the proposed work and define the proposed pole locations. The Design Team EOR will then direct the subsurface team where to dig the test holes. Approximately three test holes will be dug at least 8 feet deep per proposed mast location; fewer holes dug to a shallower depth are acceptable to confirm post-mounted flasher locations. A standard utility form will be filled out for each sign foundation location. Completed plans along with a letter stating no relocation is necessary will be sent to all remaining on-site utilities.

The Design Team will field review the area to find the best location for conduit and pull boxes, keeping in mind the following: (1) locations with the least amount of sidewalk (2) location of ditch bottoms and (3) location of drainage and other underground structures to eliminate conflicts. These things will also be considered when placing the power source and interconnect locations when applicable. Additional items that will be considered during design are: (1) Horizontal and/or vertical Sight distance issues (2) Mast arm location with respect to existing overhead power lines and (3) Whether the school flasher will meet the minimum 200 foot distance from the marked school crossing, as shown in the latest FDOT Speed Zoning Manual. The Design Team will ensure adherence to FDOT standards, Broward County standards, and the MUTCD.

The Design Team will use FTP-31-06 signs and 12" LED signal head with tunnel visors for the flashing beacons. This information will then be forwarded to Structures for analysis, where the Structural Engineer will complete a mast arm assemblies data table. The Design Team will verify that clearance heights are met for the FTP-31-06 signs per FDOT Standards. Broward County has in storage mast arm assemblies designed and fabricated by Union Metal Corporation. As a cost-effective measure, the County prefers to utilize whenever possible the mast arm assemblies from this inventory to be installed at the locations of the proposed Overhead School Flashing Beacons. We will analyze, design and develop contract documents for mast arm assemblies for warranted and future loading conditions in accordance with Broward provisions. This includes the analysis and design of any gusset plates needed to add strength to the structures as well as extension plates if necessary. It is key that the decision Tree for Broward County Mast Arm Design and Structural Analysis be performed just after 60% review from the County. All designs will include the Florida Design Manual and take into consideration the Florida Department of Transportation Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (commonly known as the Florida Greenbook). As part of the structural analysis, the Mast Arms will need to be designed per the FDOT Modifications to AASHTO LRFD Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals (Modified LTS-1).

The overhead school flashers will be provided with a Pager System or with a two-way digital communication system based on roadway infrastructure, and minimum cabinet dimensions of 17" wide by 26" high by 9" deep. A programmable time clock/scheduler system assembly will also be installed in the cabinet. The school flasher is integrated within the FTP-31-

06 'SCHOOL ZONE 15 MPH WHEN FLASHING' sign, which will have the 'SCHOOL', portion of the sign in fluorescent yellow-green background with black legend. A Signing and Marking Plan Sheet will be included with the school flasher design installation to depict existing signs, speeding fines doubled signs, proposed school signs, pavement markings, speed limit signs (outside the school zone), school crossing warning signs, parking restriction signs, and 'End School Zone' signs. The striping, pay items, and quantities will be placed on the same plan sheet and be accompanied with a Tabulation of Quantities showing the estimated project cost. The completed plans will then go through Metric's QA/QC process before forwarding them to the County for initial review. Once all the evaluations are completed, including comments addressed by the County and outside reviewers, the completed design plans will go once again through Metric's QA/QC process before approval. This process is repeated for subsequent submittals. A digitally signed and sealed copy of the final plans will ultimately be submitted along with the electronic files and final construction cost estimate.

The installation of ground mounted school flashers is typically for 2 lane-2-way school zones or areas where limited right-of-way or other concerns preclude the use of overhead flashers on multi-lane roads. In such scenarios, dual post-mounted flashers could be used instead of overhead flashers when no options for overhead flashers exist. The design of ground school flashers will be for solar-powered flashers with 12" yellow LED signal head type with tunnel visors and a two-compartment flasher cabinet. An R5-1 'SCHOOL SPEED LIMIT 15 WHEN FLASHING' sign is placed under the flashers with the 'SCHOOL' portion of the sign in fluorescent yellow-green background with black legends. As with overhead school flashers, the Design Team will set up an initial field visit with the County/Maintaining Agency and school representatives to discuss the primary work requirements observe existing conditions and determine issues/concerns surrounding the design. The plan sheets will be provided with 360 degrees photographs of the proposed installation area to confirm that there are no conflicts. The plan sheets will depict all existing signs. The final product will go through Metric's QA/QC process before submitting the final signed and sealed plans and the electronic copies to the County.

Signing & Pavement Markings (S&PM)

The S&PM plans will be designed in accordance with current FDOT criteria, the MUTCD (2009), and Broward County Traffic requirements. We understand that this will include S&PMs at new locations and the modification of existing locations. We will do an existing signing inventory to start, consisting of the age, condition, retro reflectivity, spacing, ensuring compliance with current standards, etc. We will then use that information to design the signage as required. A photo of each sign can then be inventoried and tracked and provided for the County's use.

Lighting

In an intersection improvement, lighting is a key factor to be considered, for the obvious safety reasons for pedestrians crossing the intersection. Metric is familiar with troubleshooting the complexities of the installation of several light poles required to meet the vertical lighting criteria along crosswalks in a wide intersection where the density of existing aerials and underground utilities makes it almost impossible avoid conflicts with the proposed light poles. Our first approach is to try to reduce the number of standalone light poles by installing the luminaires on existing or proposed power poles, on proposed mast arms or strain poles. For the first option, we can coordinate with FPL regarding the installation of luminaires on their infrastructure and making our design compatible with their standards. For the second option, we will coordinate with the County the installation of these poles when they will assume the maintenance of these luminaires. If neither of these options works, we can design spread footer light pole foundations to avoid underground conflicts, and low-profile light poles with "extra-large" brackets to minimize the conflicts with aerial power cables.

Additional Considerations

Right-of-Way Constraints

Our Team is aware that the early identification of R/W will be a priority in order to ensure signal improvements can be accomplished without obtaining easements. In addition, we have significant experience obtaining background ownership documentation for establishment of sufficient legal interest and agency jurisdiction. Our environmental staff have worked significantly with Frank Guiliano and Eric Augusto for County R/W and survey support/coordination. Having designed several Roadway, Traffic and ITS Projects in District Four and within Broward County, and dozens more across Florida, we

are aware of the required coordination with Railroads and the design requirements and constraints when working in, under or above Railroad Right of Way.

Overhead/Underground Utilities

Metric takes utility coordination seriously and is proactive, beginning with early communication with utility owners at the onset of the project to determine who owns the facilities in the area and to address early concerns they may have. Utility coordination early in the project schedule may result in the addition and/or relocation of services that will benefit the adjacent property owners. For example, the construction of roadway pavement sloped to one side (no center crown) often times reduces drainage construction and R/W impacts. If flooding is a concern, an analysis of existing drainage patterns, conveyances, outfalls, and storm water facilities may lead to improvements that will rectify these problems. **Early coordination with permitting agencies** will provide valuable input towards the type, size, and location of proposed storm water facilities.

Additionally, the potential for conflicts with utilities is always a very real factor. Metric will start the utility coordination process at the very beginning of any project to identify where potential utility conflicts may exist. During our initial field inspection, we will determine if any conflicts exist between the proposed design and existing utilities, through additional utility coordination with the UAOs and SUE data. Utilizing this information, we will develop plans to avoid the conflicts completely if possible or at a minimum to reduce any potential utility impacts. We will submit plans to utility owners for review and mark/confirm locations of their facilities. After we incorporate their markups into our plans, we will re-distribute plans to utility owners to ensure we have properly identified their facilities. During the design phase, we will develop a utility conflict matrix documenting potential conflicts and will notify the appropriate utility owner to determine the appropriate mitigation strategy of avoidance through design (preferred) or relocation of their facility, if required. Our SUE services will ensure that there is adequate room for the installation of drilled shafts and poles. Of note, a Project Engineer is present during SUE to handle any relocation of ITS in the field to minimize mobilization.

Complex Signal Operation

Metric and its team's experience in signal retiming of oversaturated corridors and unconventional intersections will provide the County with numerous options to increase the capacity of the County's roadways. To increase pedestrian safety Metric has deployed Leading Pedestrian Intervals (LPI) at numerous intersections throughout the State. To increase the flow along corridors, Metric will look to employing lead/lag left-turn operation as well as twice per cycle left turn phasing for oversaturated left turns.

An Emphasis on Designing for Heavy Congestion Throughout the Day

We intentionally design to minimize impacts to traffic, particularly within a heavily traveled thoroughfare. Metric has experience in utilizing special notes to guide construction methods to minimize traffic impacts and can perform lane closure analyses for the County when needed. We are also very familiar with the FDOT Standard Plans Index 102 for Maintenance of Traffic, particularly for pedestrian detours.

Ultimately, we understand most projects will be intersection redesigns to enable smoother traffic flow, with right turn lanes and/or longer left turn lanes, sidewalks, bicycle lanes, etc. Our Team likes to also incorporate any lessons learned from O&M staff to incorporate their notes into the planning and design phases.

Permitting

Through our experience on past designs, we are very familiar with the complexities in permitting. Potential permit needs will be addressed at the earliest phase in the design. Our goal will be to provide a design that limits or eliminates the need for permitting. For instance, bridge-mounting fiber conduit instead of boring under a canal is an effective way to avoid the need to acquire ACOE Section 408 permits. If permitting is required, we have the relationships with the agencies to ensure that the permitting process continues to move forward and the responsiveness to adjust to permit review questions and comments. We will make sure to start the permitting process early and maintain contact with the permitting agency to try and minimize project delays and will communicate with Broward County if any permitting issues arise.

Traffic Network Communications Implementation or Modification

Our approach to the Traffic Network Communications Implementation or Modification is based on our understanding of the County's current program to implement migration services for the traffic signal system for intersections located throughout the County. It is understood that the services include making modifications to the operation of the signals by converting the signal controllers from an analog to a digital networking system or from one type of communication protocol to another (This would include fiber optic expansion, which is discussed in the following section). We have previously been engaged in exactly this type of work for Broward County under the Broward County SEI contract, having successfully converted over 530 intersections to the new digital ATMS.now platform. This experience has allowed us to develop and refine a detailed approach to this activity that has proven results tangible to the County. From this experience we are aware that this process will involve not only the Metric team, but that some steps may be required to be completed by Broward County Traffic and Highway Engineering staff. This makes direct coordination with the County required throughout the process to ensure a successful deployment. The process of this task includes three primary areas:

Field traffic signal controller firmware implementation, operation, updates and verification

We are experienced with the activities required to update the firmware on the existing field traffic signal controllers, having updated over 550 controllers throughout the County. There are two key steps in this process including Field Controller Downloading and Field Controller Firmware Updating which are further detailed below.

The first step in this process will require the downloading of the existing field controller's operational parameters. This step is required to update the firmware on the CPU boards that are in use at locations with earlier, incompatible firmware versions. This task consists of visiting each intersection within the project to access the existing field controller and complete the required download. Our team has streamlined this process using multiple teams as necessary depending on the size of the deployment. Once the operational parameters have all been successfully saved to a portable electronic device the team can progress to the next step in the process.

The second step in the process consists of updating the firmware that resides on the CPU board used in the 2070 model traffic signal controller. These boards are modular and can be recycled from the field. The firmware update involves the following step by step process:

- Copying the desired firmware version from a County provided laptop computer to the CPU board.
- Inputting the field parameters to a 2070 controller running on the newly updated firmware.
- Comparing side by side the newly input parameters to those from the field running on another 2070 controller that has been loaded with the actual field parameters obtained with the portable electronic device. We have developed a Quality Control process related to this task that involves a step by step checklist to help our certified technicians review each of the controller's parameters to ensure accurate programming.
- Testing the newly updated CPU board in a test 2070 controller. This process will be completed in coordination with County staff to ensure accurate programming.
- Returning the updated CPU board to County staff for field swap out (as required, this is based on our understanding of the current program. Should the responsibility of this activity change we will be ready to adjust accordingly.)
- Bring back the original field CPU board after swapping out to repeat the process.

We understand that the County prefers to use a limited number of boards for the initial programming and recycle the existing boards from the field to help minimize material cost to the project. We have developed an approach that allows the Metric Team to proactively pursue the project schedule while any activities that may be assigned to the County are completed.

Communications equipment setup, testing, and field deployment and troubleshooting for fiber optics, Ethernet over copper, and cellular devices

It is understood that this component of the conversion requires knowledge of network and wireless communications, the ability to organize and track thousands of pieces of IP data as well as strong troubleshooting capabilities. This task will require support in both the lab and field environments to successfully complete. The Metric Team is aware that currently

Broward County utilizes three (3) different digital communication mediums depending on the available infrastructure in place. These three mediums include Cellular, Ethernet over Copper or fiber optic communications.

Cellular based communications is used where no infrastructure exists and is typically composed of a cellular modem deployed inside the signal cabinet. In some cases when the signal is weak a secondary cellular antenna is required to be installed to help strengthen the signal to the controller. It is also important to note that in the case of direct cellular or fiber deployments, 2070 firmware at each individual field location may be updated prior to or after fiber switch activation. Ethernet Over Copper (EOC) is used where twisted pair copper is to be reused. The Metric team is very familiar with the Actelis Networks devices typically installed with the EOC deployments, having programmed and deployed hundreds of these units on past projects. The final medium is fiber optic communications, which is typically the most reliable of the three available and offers the most bandwidth and speed. The Metric team has staff well trained and experienced in use of fiber optic cable communications. It is understood that locations where fiber optic cable is available, Cisco fiber optic switches are commonly used by the County.

Migration of the traffic signals from the legacy UTCS based platform to a new ATMS.now operating platform and signal timing methods and procedures

The Metric Team understands that before the individual traffic signals can be migrated from UTCS to ATMS.now, the field communication and firmware deployment must be complete. This is required in order for remote uploading and downloading to occur. Each individual traffic signal utilizes its own set of timing parameters or database. Converting and deploying these databases from raw data in UTCS to the format required for ATMS.now operation is the objective of this activity. While these database conversions may commence at any time, they cannot be deployed until high speed communications and updated 2070 firmware are established in the field. Our approach includes the support of our subconsultant, Albeck Gerken (AGI), to complete this task. The field communication and firmware deployment activities will be closely coordinated by our team to allow for the database conversions to commence as soon as possible in the project schedule. Together, the Metric Team has converted over 530 intersections to the ATMS.now platform, making us a well experienced and highly qualified team to complete this scope requirement.

AGI is currently performing controller database conversions for migration from the legacy UTCS platform to the Trafficware ATMS.now centralized software platform. AGI has performed database conversions and performed deployment of the databases of approximately 675 traffic signal locations. To address section 5 “Traffic Network Communications Implementation or Modification” of the scope of services, AGI is poised to support the efforts of the team to migrate existing traffic signal controllers from the legacy UTCS based platform to the new Trafficware ATMS.now centralized operating software platform. They will perform the translation of all existing signal timing plans, timing data, coordination data, time of day data, as well as all other signal operations data that will be needed to perform database conversions.

Traffic Engineering Studies

Data Collection

Turning Movement Counts, Machine Traffic Counts, Pedestrian and Bicycle Screenline or Mid-block Counts

Metric offers a well-rounded Traffic Operations Team which has performed the data collection for over 9,500 locations throughout Florida. We can perform 4, 6 or 8-hour intersection turning movement counts, including vehicles, trucks, pedestrians, and bicyclists, summarized in 15-minute periods and hourly totals for each lane group. In addition to the volume summaries, the report will include the date, name of technician, an intersection diagram, north arrow, and the weather condition. Pedestrian and bicycle counts will be summarized separately in the format of the County’s Pedestrian & Bicycle Summary sheet for data collection. Additionally, 24-hour, 48-hour and 72-hour directional volumes will be summarized by direction and total, in 15-minute intervals, hourly sub-totals, and daily totals. Speed studies will include, at a minimum, the 85th percentile speed, the 50th percentile speed, and the 10-mph pace. Classification counts will include a breakdown of the number and percentage of vehicles by FHWA class and calculation of the peak hour and 24-hour truck factors for categories 5 through 13. The screenline count will obtain the number of pedestrians and/or bicyclists at several locations along imaginary lines which divide the study area into parts. These may occur at mid-block locations. Metric

recently performed similar counts for FDOT District 5 and District 2, tracking pedestrians and bicyclists at multiple locations along a corridor.

Traffic Studies & Evaluations

We understand that there are over a dozen "Study/Evaluation types" of tasks included in the scope for this project, including: Spot Speed Studies, Intersection Delay Studies, Corridor Travel Time and Delay Studies, Origin and Destination Studies, Traffic Signal Warrant Studies, Multi-way Stop Warrant Studies, Traffic Operational and Safety Studies, School Safety Studies, Road Safety Audits, Pedestrian and Bicycle Safety Studies, Roundabout Evaluations, Access Management Studies, and Traffic Calming Studies. Metric has performed ALL types of traffic and safety related studies under numerous continuing-type contracts, including our 4th consecutive five-year Traffic Engineering & Retiming contract for District 5, our District 2 RSA contract (where road safety audits as well as SRTS and other safety studies are performed), District 2 Miscellaneous Design and District 5 Community Traffic Safety Program (CTSP) contracts. We are fully aware of the integral role that accurate data collection plays in the early stages of each of these studies; as we build upon that data, alongside existing research and field visits, to determine cost estimates, recommendations and summaries. Additionally, we have the experience and knowledge to present effective B/C ratios (more than a dozen B/C representations have been completed in just the past five years for projects ranging from Master Plans to studies) in order to give the County the quantitative tools needed to aid in making the most informed decisions possible.

Studies and Design Review Support

Prior to initiating any plans or study review, the scope of services will be reviewed and discussed with the County's task manager to fully understand the project's intent. The phase submittal checklist will be used as a guide to ensure that all elements required for the submittal have been included. Items that will be reviewed include the use of the appropriate design criteria, constructability, permitability, and cost estimates. As a rule, our research methods typically include literature reviews on nationwide policies, research, and emerging technologies.

Traffic Control/ITS Device Inventory Support

Metric has years of focused ITS installation, integration, and maintenance experience in the State of Florida. Our staff is experienced in the use of MIMS, ITSFM, and SunGuide® software to track maintenance activities, inventory and assets, and operation. Metric provides skilled personnel with knowledge of MIMS data entry and upkeep. Metric provides fiber optic and ITS device troubleshooting and repair, preventive maintenance, and Project Management. As a part of project management, Metric is experienced in providing administrative reports to track all work completed on projects. These reports also include guidelines in which Metric performs any given task. Inventory reports are created to track installation and repair for any ITS device. Preventative Maintenance checklists are submitted to track ITS device maintenance and operability.

Signal & Corridor Retiming

The Metric staff holds several years of knowledge and understanding of traffic signal timing models and traffic signal controllers to produce effective and efficient timing plans along Florida's roadways. Our systematic and organized approach to signal optimization and implementation makes our team more efficient in producing better system timings, reducing durations in signal system implementation and fine-tuning, and minimizing timing related complaints from the travelling public (in most cases no complaints at all). In the few instances where a complaint does occur, we are there quickly to reassess a corridor to make any minor changes.

Our approach to signal timing begins with data collection, which is the basis for many of the decisions related to timing plans, such as identifying appropriate plan transition times, critical intersections, and special emphasis areas (i.e., areas with limited queue storage). We will use Synchro to develop existing conditions of the arterial to be retimed as well as proposed timing plans for the arterials. Following field implementation, the retiming engineer will ride the corridors and make any fine - tuning adjustments as needed.

Once the Synchro model is satisfactory for existing conditions, we determine if ped timings need to be accommodated since this affects minimum splits, mainly on side streets, that will have a progression effect on the mainline. We also calculate the appropriate yellow, red, and ped clearance times per TEM and NCHRP 731. The minimum initial green, vehicle extension, fixed or floating force off phasing parameters are determined, as well as the proposed cycle length per timing plan (usually driven by the intersection with the worst LOS - highest saturation / "critical intersection"). We also ensure vehicles can clear the intersection by checking headways for each movement and optimizing the timing given to each movement, "splits" with a minimum of 15 seconds for minor movements (shortened splits may be allowed). Finally, we evaluate and develop offsets using Tru-Traffic and incorporate into Synchro, optimized by peak direction. We also evaluate the proposed timing plans and coordination using Simtraffic or Vissim. The new timing plans are presented to the maintaining agency for approval and to coordinate implementation. Once the new timings are implemented, Metric will observe each intersection to ensure the correct cycle lengths, splits, offsets, and phase sequences are in operation as designed. Additionally, we will fine-tune each location to include platoon progression and side street/left turn queues. Before and after travel time runs are conducted to evaluate the effectiveness of the retiming, ensuring all issues are addressed. A before and after bottleneck analysis is done to evaluate the corridor and determine the critical intersection(s) and to determine if there are any places along the corridor where a failure could take place. All the retiming efforts and results are included in a final report.

D. Describe the Prime Vendor's approach to fiber optic network expansion for data-intensive technologies; redundancy issues; security control; and advanced traffic signal control systems, including flexibility to respond and adapt to new technologies.

Metric has ITS-related experience with regards to Design, Configuration, Installation, Testing and Inspection of various communications systems technologies. We have designed, tested and installed $500M in ITS projects, totaling in the hundreds of miles, which use fiber optic communications infrastructure and communications equipment. We also have extensive experience with both wireless and cellular equipment and infrastructure. Of note, we are currently designing a project for FDOT District Two which will use cellular technology to communicate with Dynamic Message Signs (DMS) around the JaxPort Talleyrand Terminal to notify truckers and motorists of incidents and congestion.

Metric's Team has experienced staff capable of designing, integrating, testing, and correcting faults related to wireless Ethernet communications systems. Metric has designed numerous successful wireless systems in the United States and in Puerto Rico. Metric has imparted an effective wireless planning process. Our planning process includes conducting multiple site visits of the proposed location to run a Spectrum Analyzer test at different times of day and successfully calculate of the Fresnel zone. This is to achieve the highest signal strength and stable communications between desired locations. Our staff have utilized Spectrum Analyzers to investigate the possible spurious or unwanted signals which may be present.

Technology

Fiber Optic Network Expansions for Data-Intrusive Technologies

Technologies and initiatives such as Connected Vehicles (CV) and Automated Traffic Signal Performance Measures (ATSPM) are becoming more popular and require increased bandwidth and reliable communications. Metric is at the forefront of both of these areas, as we are working on multiple CV projects throughout the state and ATSPM within FDOT District Five. We realize that 10 GB backbones are a necessity today and that higher bandwidths will be needed in the near future. In addition, optical budgeting is critical for overall networks. Finally, network resiliency, failover, and redundancy are key factors in the ability to get all of this information back to the head end where it can be processed and utilized.

Redundancy Issues

Roadways are linear while most networks are not. Most network professionals are used to building, campus or Local Area Network configurations for their networks. ITS network professionals think outside the box to make redundant connections wherever possible along the arterial roadways and use networking protocols to ensure maximum uptime and redundancy. This requires the use of multiple optical paths along different roadways to create "physical" redundancy." This can also include the use of optical bypass switches, which allow communications to pass through a field switch if the switch has no power. This allows only the one site to be down while allowing communications on to the next site to keep the network performing uninterrupted.

Security Control

Today's networks require security in depth. We have extensive experience with WatchGuard, Juniper, Palo Alto, Cisco and other firewalls along with experience with Antivirus software, IDS/IPS solutions VPN, multi-factor authentication, RADIUS and other solutions which allow us to work to create a holistic security environment to strengthen and maintain security for an organization's infrastructure. Of course, with the ever-increasing mobile workforce, our approach includes mobile security. Wired and wireless security are very different and require different forms and levels of security. Our knowledge allows us the ability to ensure that both are secure. A major part of security is policy and procedures. Our team provides leadership and/or guidance as needed for an organization to help ensure conformance with standards and requirements. Along with industry best practices, we have knowledge of security standards and regulations such as PCI, HIPPA, SOX and others.

ITS Software Development

Our Technology Group includes Software Solutions, which creates customized GIS and ITS software solutions. This group has the ability to create software to address a single issue or multiple issues, without needing to retain the services of a third party in most cases.

SunGuide®

Our Team understands FDOT's SunGuide® software is scheduled to release 7.1.2 in the next few months and it is expected to include some applications that can be useful for Broward County's Signal system software provided by Trafficware. Our Team can help assessing the utility of the new features of the enhanced SunGuide® 7.1.2's release for improving the capabilities of the signal system software. If Broward County's Traffic Engineering Division wishes, Metric Team can coordinate with FDOT to get additional interfaces and applications developed for the specific needs of the Broward County Signal system.

Transportation-related Future Technology Adaptation Systems

As stated previously, Metric is working on the forefront of CV technologies in the state of Florida. We have been testing various Road-Side Units (RSUs) and On-Board Units (OBUs) as part of our I-75 FRAME project with FDOT District 5. This testing has been very extensive and has involved multiple vendors with both Dedicated Short-Range Communications (DSRC) and cellular technologies.

Advanced Traffic Signal Control Systems

ITS systems and associated technologies are everchanging, and we see this technology rapidly evolving within the transportation industry as Connected Vehicle (CV) and Autonomous Vehicles (AV) (together referred to as CAV) become more prominent and serve as the catalysts for improvements to our infrastructure as well as internal protocols within government departments in preparation for these deployments. Metric has been fortunate enough to provide exceptional services on some of the most trailblazing CAV-related projects, programs and statewide initiatives - keeping Metric at the forefront of technology and cutting-edge design techniques.

Due to this forward-thinking experience, Metric stays abreast of new products and developments in the industry, working with our customers to prepare for and implement such leading-edge technology. We are currently working with customers on their development and implementation of CV technologies including, Siemens Road Side Units (RSUs), On Board Units (OBUs) and Cisco Systems.

The Metric Team is actively involved in CV testing and readiness assessments for the purposes of deployment of CV technology. As an example, as Systems Manager for the I-75 On- and Off-System F.R.A.M.E. project in FDOT District 5, Metric is responsible for coordinating, testing and providing documentation on the various technologies to include RSUs, vehicular OBUs as well as emulated OBUs (mobile devices, tablets) to ensure device interoperability. This project is in line with the U.S. DOT goals, and will contribute to increased safety, reliability and mobility needs using advanced CV technologies. The Metric test team is responsible for integrating these devices to multiple signal controllers with the goal of verifying the various CV-related applications: Signal Phase & Timing (SPaT), MAP messages, Traveler Information Messages (TIM), Basic Safety Messages (BSM), Emergency Vehicle Protocol (EVP), Transit Signal Priority (TSP) and others related to pedestrian safety. The Metric Team has conducted extensive testing in both lab and field environments with equipment provided by several CV vendors to verify equipment interoperability, including Siemens RSUs and Cisco Systems. As a result of the testing, reports have been generated to guide the Systems Manager in their decision-making process. Metric was involved in the development of CV Specifications to include Technical Special Provisions (TSP) as well as Modified Special Provisions (MSP).

Flexibility to Adapt to new technologies

Our ITS, Traffic and Technology Groups have dedicated professionals who are responsible for keeping abreast of technology advancements and changes to ensure that our projects are designed, configured, installed, tested and inspected appropriately.

TSP

Metric has developed Transit Signal Priority (TSP) timings for District 5 during Phase 1 and Phase 2 of their TSP deployment and wrote the RFP for District 5 for Phase 3. When developing TSP timing Metric identifies the current bus routes and saturation or volume to capacity ratio (V/C) along each corridor to develop a feasibility study. Once the feasibility of implementing TSP timings has been resolved timings are developed. Timing will be based on the volume of traffic at the intersection, the volume of transit passengers, and the location of the bus stop in relation to the adjacent signalized intersection. Much like deploying coordinated signal timings TSP timings will be fine-tuned and monitored to ensure the corridor operates effectively and TSP timings are not negatively impact the corridor as a whole.

ATSPM

We have previously mentioned our Team's Automated Traffic Signal Performance Measures (ATSPMs) experience and we believe the County may have some interest in this new technology. However, this may require signal controller hardware upgrades (2070 1C modules) as well as controller firmware upgrades. The County does not yet have an ATSPM software platform but may have interest in evaluating those available on the market.

The Advanced Transportation Controller (ATC) and Advanced Transportation Controller Cabinet (ATCC) standards have been adopted and are available for use. Although no ATCC are currently on the FDOT TERL Approved Products List (APL), several manufacturers are avidly pursuing getting this equipment through the approval process. This will allow agencies in Florida to start the process of preparing for the future and the next generation of traffic signal equipment to support growing initiatives like Connected and Autonomous Vehicles (CAV) and Smart Cities.

Adaptive Signal Control Technology

Metric has analyzed, designed and developed adaptive signal control technology for various agencies. Our experience has allowed us to work with various adaptive technologies, detection types, and controller types when deploying adaptive signal control technology. When deploying an adaptive system, Metric begins by conducting an initial survey of the corridor, including gathering volumes, existing timings, and taking a complete inventory of each intersection (is there communication to the TMC, what type of detection does the intersection have, controller manufacturer and firmware, as well as the cabinet type and expansion capability). The initial survey is conducted to conclude the feasibility of deployment of an adaptive system and to determine which type of adaptive system would work best for the corridor and maintaining agency. Depending on the type of adaptive system and detection the development of the timing parameters to make the adaptive changes can vary. During the deployment of an adaptive system, after all the timing parameters have been developed, Metric will work closely with the maintaining agency to ensure their staff is properly trained and informed on how to maintain the adaptive system and how/when to make changes to the timing parameters. ***Metric has recently given a presentation to Broward County on adaptive signal control technologies and is currently in the process of evaluating multiple corridors for ASCT.***

E. Describe the Prime Vendor firm's approach and understanding with CEI services, including contract management, issue identification and resolution, project communication and coordination, public concerns, schedule and cost control, claims and change orders, and final certification.

The Metric Team offers qualified ATMS/ITS, roadway, and bridge inspection staff in South Florida, as well as support in Central and North Florida. Metric will do more than just provide inspection resources. We will assist you in forecasting your needs, developing courses of action and project workload analyses, and integrating the right people to accommodate your needs. We will also actively manage the quality of our work and continually seek your feedback so we can adjust our staffing and reporting to best serve you.

Project Construction Management Services

The Metric Team's approach to the Project Construction Management Services is based on extensive experience on ATMS/ITS and roadway CEI contracts throughout the state, and particularly with Broward County itself. The Metric Team has successfully completed the Construction Management Services of over $2.8M on Broward County Traffic Signalization projects, including the conversion of over 11 signalized intersections to mast arm construction as well as the installation of new school flasher locations throughout the County. In addition, we have supported the County by providing the CEI services for a major Design-Build project that involved the conversion of 20 intersections to mast arm deployments *(photos below)*. And of course, Metric's most recent Continuing Services where Metric and subconsultant staff have also supported the County on numerous CEI-related task work orders for the past five years. For example, Metric's CEI staff has provided CEI services for fiber optic installations and for new mast arm support traffic signals including traffic signal conversions from span-wire to structural mast arms for ITS and vehicle detection system devices. Similarly, we have inspection staff (as well as a CEI "pool" of staff from our subconsultants) who provide construction management (Metric), Mechanical and Hydraulic services (TranSystems), and concrete sampling and testing QC (FET) for projects such as the Andrews Avenue Bascule Bridge Rehabilitation and Everglades Holiday Park Bridge Replacement. From this experience, we provide a "no learning curve" approach to CEI services when it comes to contract management, issue identification and resolution, project communication and coordination, public concerns, schedule and cost control, claims and change orders, and final certification.

Documentation and Recordkeeping

Metric will provide accurate and thorough documentation of all Project activities. Work will be documented in the Daily Work Reports, field books, photographs, video, or any other necessary form(s) appropriate to the Project. Documentation will be reviewed on a daily basis by Metric staff, and copies will be uploaded to a SharePoint site for immediate internet access by the Metric Team and Broward County staff. All hard copy correspondence received from the contractor will be scanned, labeled, and catalogued into a database/spreadsheet. Our quality control of this activity will include, but is not limited to:

- Comparing hardcopy submittals to scanned documentation
- Comparing received deliverables to expected deliverables

- Reviewing the actual and expected response times to submittals
- Review photos and video for Project record-keeping applicability
- Material and Work Acceptance (Verification Testing)

The Material and Work Acceptance criteria will be thoroughly reviewed by all inspection personnel prior to the start of the job. Metric will maintain a spreadsheet of all materials entering into the work and will track the materials by date received, quantity, type, and basis of acceptance. Metric will maintain and analyze records of all sampling and testing completed. Our quality control of this activity will include, but is not limited to:

- Comparing field notes against the material acceptance logs
- Comparing basis of acceptance against contract standards
- Documentation review to ensure that the field reports for testing results are being submitted within one week (as required by the contract)

Communications

Metric will develop a communication plan that will facilitate the handling of information in the most effective and easiest manner possible (e-mail or phone) but will also include instructions for hardcopy correspondence. It will dictate who is to be included on what communication and how certain correspondence is handled within Metric, between Metric and Broward County, and between Metric and the Contractor. A draft of the Communication Plan will be distributed and discussed at the Pre-Construction Meeting. Our quality control of this activity will include, but is not limited to:

- Reviewing e-mail and hardcopy correspondence for inconsistencies
- Interviewing Broward County regarding the effectiveness of our Communication Plan

As-Builts

Metric's Senior Inspector will keep an up to date as-built record of all construction activities by annotating and dating the completion of activities on a field set of plans. Changes to the design set will be clearly annotated in red. Changes addressed and/or approved through a change order or RFI will be clearly noted as such. Metric will use this working field set to produce a clean and accurate as-built record drawing. Our quality control of this activity will include:

- Regularly reviewing the field set of plans to ensure changes are recorded as they occur.
- Reviewing the final as-built drawings for the proper inclusion of details from the plan set.

Safety First!

Safety is first and foremost. It is imperative that all personnel involved in the field operation be aware of their surroundings and the impact of their activities. Metric's staff will perform daily inspections of all work zone features including, but not limited to Personal Protective Equipment (hard hats, safety vests, etc.), proper lighting, MOT devices, and equipment features such as back-up alarms and emergency lights.

To ensure that there is clarity of purpose, the consequences for failing to adhere to the safety requirements will be discussed in detail during the Preconstruction Meeting. Having communicated these expectations, Metric will use an established system to track the performance of the Contractor. Metric will be proactive in inspecting and communicating with the Contractor on any deficiencies that are identified.

Baseline Schedule Reviews

When the baseline schedule is received from the Contractor, it will be reviewed to ensure that it does not exceed the estimated Contract times (Include negative float), that shop drawing reviews and lead-time for manufacturing are included, and that the logic used is sensible and achievable. We will constantly be looking ahead to future activities to ensure that work can be accomplished as designed and as per the Contractor's schedule. Special emphasis will be given to ensure that:

- All necessary activities are shown in a logical manner in the CPM, and the level of detail in the CPMs reflect the Project complexity and demonstrate the ability of minimize impacts and lane closures.
- Proper coordination activities with adjacent and nearby construction projects and agencies such as FDOT District 6 and Miami-Dade County are considered.

Regular Review and Control of Project Schedule

After the start of construction, we will continuously monitor the schedule by first estimating the progress of each activity currently underway. Activity progress is recorded by our Inspectors daily. Field activities, some expected and some unexpected, that could possibly impact schedule (weather days, equipment breakdowns, traffic accidents, presence of contaminated materials, special events, etc.) will be continuously monitored. Schedule reviews will occur prior to each progress meeting, when processing progress payments, or when reaching a significant milestone. During each schedule review, we will compare the Contractor's actual progress against their baseline schedule. Activities on the critical path which are behind schedule will be brought to the attention of the Contractor for immediate resolution.

Should the schedule or Contract time be in jeopardy of failing to meet the Project objectives, we will take immediate action to assist and require the Contractor to bring the Project back on track. If the progress of the work is lagging, or if the Contractor is not performing the work diligently, Metric will perform a Schedule Impact Analysis (SIA) to examine the effects of delays or changes on the Project schedule. The SIA will identify the activities that will have an impact, develop an action response strategy, and classify the possible risks. Any unforeseen conflicts or unanticipated situations will be raised with the County and EOR to find the most-cost effective resolution.

Critical to ensuring our goal is that we hold ourselves to the same standard of timeliness. As such, we will assure prompt responses to any submittals by the Contractor (RFIs, shop drawings, lane closure request, etc.). Our effort to ensure timeliness of the Project will begin long before the pre-construction meeting by reaching out to the Contractor in an effort to receive preliminary submittals as much in advance as practical.

Claims Management

Metric's knowledge and experience in roadway construction issues has allowed us to manage and mitigate claims through documentation of all construction activities. Our QA/QC plan offers a proactive approach that identifies potential problems and possible solutions before they occur. If the matter cannot be resolved at this level, the CEI shall elevate the matter as necessary. This process allows for a thorough analysis of each claim and ensures a timely resolution.

Claims Avoidance

Metric's goal is **ZERO CLAIMS** at the end of our contract. In order to accomplish this, we perform proactive review of Plans and Specifications, we promptly and accurately respond to RFIs and RFMs. We anticipate unforeseen subsurface conditions through our years of experience. Utility coordination and accommodation is an important element as well. We continually provide utility coordination and accommodation and make sure relation schedule are addressed. This includes Bi-Weekly Progress & Utility Coordination Meetings. We keep a separate claim file for each issue and address them as quickly as possible including daily reports and photographs for support information. We will always communicate early to Broward County Construction Project Manager and Design Project Manager for prompt resolutions so that we can avoid any claims.

Issues

To minimize impacts from unknown issues, we will perform a constructability walkthrough with our entire proposed team in advance of the preconstruction meeting. With the plans in hand, we will walk the entire length of the project documenting existing site conditions and looking for potential yet unidentified conflicts, plan omissions, and other construction challenges. We will submit our own RFIs to the EOR for clarification before the project begins and repeat the walkthrough process with the Contractor before mobilization. Our Team will constantly be looking ahead to future activities to ensure that upcoming work can be accomplished as designed and as per the contractor's schedule.

Pre-Construction

Our work starts before construction by thoroughly documenting the existing conditions. Our pre-construction documentation will be conducted for the entire project footprint but will be focused on areas that are to remain in place or undisturbed (existing signs, archaeological site, etc.) and adjacent facilities including immediate routes used for hauling material and possible stockpile locations. Prior to the Pre-construction Meeting we will request that the Contractor submit a list of plan errors, omissions, or ambiguities and any other issues that need to be discussed. As the CEI, we will coordinate the Preconstruction Meeting, invite applicable parties, prepare an agenda, conduct the meeting and produce meeting minutes.

Optimization of Project Schedule and Budget

Time is money, and if we manage the schedule carefully, we can control Contractor costs as well as CEI costs. Our staff has expertise using P6 software to ensure the CPM schedule contains proper activities, logic, and relationships. We combine our analysis of key Project milestones with understanding for cause-and-affect relationships, then share our perspectives with the Contractor. This improves efficiency of operations by addressing issues before they escalate into bigger problems. Remaining flexible becomes essential as look-ahead schedules are adjusted weekly because of environmental conditions, resource availability, material needs, equipment break-downs, and traffic volumes. We will track actual progress against the approved baseline schedule and, should progress fall behind, will advise the contractor of our observations and work with him to obtain a Schedule Recovery Plan to make up any lost time. We will proactively analyze future Project phases to identify potential conflicts. To maintain focus on the project's critical path, we will dedicate a portion of each Progress Meeting to discussing current and future milestones. Our goal is to identify differences between planned and actual production rates on critical activities and discuss potential adjustments to work sequences or identify where additional resources are required. A Weekly Construction and Activities Report will be submitted to FDOT that identifies construction issues, provides a budget and schedule update, lists upcoming construction activities, and gives the status on Contractor submittals.

Coordination and Public Outreach

Our process for public outreach calls for the development of a comprehensive and detailed Public Information Plan (PIP) that identifies all the stakeholders and correlates Project activities to potential impacts. We will use our in-depth knowledge of construction sequencing and practices to forecast when public outreach is required such as during traffic shifts and work at the signalized intersections.

Metric will develop a project information sheet to be distributed prior to start of construction to the neighboring businesses and communities and maintain communication with the neighboring HOAs and commercial businesses. Based on this demand, Metric will develop a log of concerns and questions for each of the neighborhoods to make sure each location is treated individually and given the attention they deserve during the Project.

Ultimately, Metric will be an advocate for Broward County and gain the trust of the public by keeping contractors on schedule and enforcing plans, specifications and Broward County Standard Drawings. We make sure consultants and contractors adhere to scope of services and the assigned personnel are the same as proposed/approved. Broward County can rest peacefully knowing Metric and its team members are performing inspection services and ultimately takes responsibility our performance and the quality of work but keeping to our commitments.

APPROACH TO ADDITIONAL SCOPE ELEMENTS/POTENTIAL PROJECTS

In addition to providing our Team's understanding and approach to the questions identified above, our Team would also like to cover some additional scope items that we feel highlights our Team's overall understanding of this contract in the most comprehensive way.

Complete Streets

Broward County Complete Streets Guidelines provides practical guidance on how to utilize current roadway design standards to create a more well-balanced streetscape environment that promotes community connectivity and safety for motorist, pedestrians, and bicyclists alike, thereby promoting social interaction and economic activity. The Metric Team is knowledgeable and experienced with Complete Streets guidelines and the importance of maximizing place making and investing in livable communities through our approach to sustainability and redevelopment. We have developed innovative solutions on many infrastructure improvement and transportation planning projects for governmental and institutional clients and use our vast expertise to assist with ongoing revitalization projects throughout Florida.

By adhering to Complete Streets principles, the Metric Team's approach to the design of an urban street is one that enables safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation, but with the emphasis being on the pedestrian and cyclist. From an urban design perspective, it is important to provide a variety of street types while keeping in mind important community destinations. Designing roadways for shared use between vehicles and bicycles, where continuous linkages are provided not only for vehicles but also for bicycles, is important in fostering alternative transportation options. Designs that account for proposed transit projects or enhance facilities used by current transit operations are critical for use of multi-modal facilities by commuters and tourists, which not only reduce traffic congestion, but also polluting vehicle exhaust emissions. To this end, traffic analyses for proper modeling of multi-modal environments should use multimodal level of service (MMLOS) approach developed under National Cooperative Highway Research Program (NCHRP) Project 3-70, since the sought-after traveled way uses different modes of traffic. Our Team understands fully that the framework for design must consider the arrangement and scale of buildings with one another and to the street, sidewalks, bike lanes, and other areas within the public realm that can support high quality places to live, learn, work, and play. Our goal is to combine the roadway with nature, culture, architecture, and thoughtful design in order to create a sense of place in which the community can grow.

Safety of the walking public is one of the key components to having a successful Complete Streets project. Pedestrian-friendly design includes opting for lower-speed environments, reduced roadway cross-section widths, particularly in crosswalk areas, and enhanced landscaping. While providing adequate parking is necessary for the success of businesses and residents with limited onsite parking facilities, optimized parking can be achieved by reducing the number of parking spaces and thereby providing more roadway width for sidewalks, landscaping and storefronts. Another way of optimizing parking is via increased or variable parking fees (by time of day), which encourage persons to entertain other forms of transportation and ensure that adequate parking is available during peak hours. Bicycle parking will further encourage persons to opt for this healthier mode of transportation on shorter trips. Our Team will ensure sustainable landscape architecture is planned and designed for outdoor spaces and their relationship to the urban street – creating a visually pleasing and welcoming atmosphere to urban city areas.

ATMS/ITS Design Improvements

Metric's staff has planned, designed, inspected, integrated and tested hundreds of millions of dollars in ITS projects over the last decade, including numerous ITS projects in and around Broward County. Our familiarity with the region's system

will allow us to spend more time fine tuning the intricate details of an ITS design, such as any upgrades to Vehicle Detection Systems, CCTV, DMS, signal cabinets (i.e. switches, etc.) or incorporation of new signal technologies.

Our Team is comprised of large dedicated ITS Engineers proficient to perform services such as ITS design, ITS analysis, ITS plans reviews, ITS CEI and Operations, Integration and Technology, in fact, the entire ITS service line. In addition, we are well versed and experienced in creating Systems Engineering documentation such as ConOps, RITSA, RTVM, and PSEMP, as well as any other miscellaneous or other services tasked by the County.

This unprecedented experience ensures that our staff will have no learning curve in any aspect of this contract. We offer ITS Design, inspection and integration services, training, can prepare Design/Build Criteria packages, project plans and specifications, perform field reviews and provide comments on plans and specifications, prepare Systems Engineering submittals, and support all of the infrastructure as well as hardware/software initiatives as needed. Because Metric's ITS Staff is not only a production design staff, but also a construction management, integration and TMC operations staff - this gives us unique insight into the requirements of ITS projects, allowing us to anticipate and avoid conflicts during both design and construction.

Any requirements of plans will be prepared in accordance with both County and FDOT Design Manual (FDM). Metric design services provide unmatched experience in this arena. Due to the nature of this type of ITS project, the task of coordination will be assigned, implemented and be acted upon as soon as NTP is issued. With that said, the following are some design considerations we consider for any ITS project.

Power Service Design:

- Early coordination with utility companies to ensure proper placement of device and infrastructure.

Obtain Environmental Permits:

- Early coordination to avoid any conflict with schedule.

Lighting Damage to ITS Devices:

- Propose surge suppressors in both sides of cables (cabinet and device).

Foundation Design Conflict with Underground Utilities:

- During our initial field inspection, we will determine if any conflicts exists between the proposed design and existing utilities, through additional utility coordination with the UAOs and SUE data.
- ITS Engineer is present during SUE to handle any relocation of ITS in the field to minimize mobilization.

Utility coordination:

- Our Team will place a design ticket and all utilities within the corridor will be determined
- Utility coordination is performed with all utility agencies to ensure no conflicts with the proposed conduit path and device installations while preparing plan sets.

CCTV Camera Design:

- We will base our design from the most effective means necessary.
- We will evaluate all options: mast arm versus strain pole

DMS Design Constraints:

- Request R/W maps to verify R/W constraints for ITS devices.
- Identify adequate power source locations.
- Structural design is clear of overhead utilities.
- Foundation of the pole is clear of underground utilities
- Pole structure is in an area free of horizontal and vertical curves

In addition, please note we have performed several ITS/ATMS Projects in District Four and within Broward County, and dozens more across Florida; we are aware of the required coordination with Railroads and the design requirements and constraints when working in, under or above Railroad Right of Way.

On the technology side, Metric has the staffing to incorporate emerging technologies into the roadways of Florida. We are the front-runners in the industry in preparing to help build a smarter roadway system. In many of the emerging technologies projects we have been a part of, our expertise has been in coordinating, testing, integrating and providing precise documentation. Some of the various technologies we have incorporated in our innovative projects are: Roadside Units (RSUs), vehicular On-board Units (OBUs) as well as emulated OBUs (mobile devices and/or tablets) to ensure device interoperability.

In order to meet the aggressive schedules for any assigned TWO – if needed, we will have a minimum of two design teams, a field team, and an environmental team working in tandem to lay out and plot the required components. This approach allows us to meet any expedited design schedules.

Roadway Improvements

Design and Plan Preparation

At the onset of each task assignment, Metric will contact the appropriate departments of Broward County to obtain input concerning existing conditions and design considerations. Existing data includes R/W and design surveys, accident histories, maintenance records, aerial photography, traffic counts, existing plans, previous studies, citizen complaints and suggestions, and utility data. Design considerations include planned and designed projects in the immediate vicinity, potentially hazardous waste sites, proposed and existing development plans, drainage problems, storm water management requirements, and pedestrian and bicycle requirements. Other sources of data include the Florida Department of Transportation, the appropriate permitting agencies, local municipalities, utility companies, school officials, local residents and businesses, transit officials, and any other jurisdictional agencies and concerned entities. Metric will utilize all data gathered to perform a thorough investigation of all viable design alternatives. The product of this process will be a recommended design alternative, if required, for County approval.

Complete construction plans, technical specifications, and special provisions will be prepared. The plans will be prepared in accordance with the State of Florida Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways and the requirements of Broward County. In addition, R/W documents, utility coordination services, permitting services and applications, quantity computations, and an engineering cost estimate will be provided.

Pavement Design

The Metric Team is very familiar and well versed with FDOT's Pavement Type Selection Manual, Rigid Pavement Design Manual and the Flexible Pavement Design Manual. Our engineers will work with County staff to determine the correct pavement design for a specific corridor based on the traffic, soils, weather, materials, construction, maintenance, environment and costs of the alternate pavement designs. We have the technical capabilities in house to conduct and review pavement condition surveys, develop the required traffic projections, 18-Kip analysis and structural number calculations. We will provide the county with the most economical design of the correct thickness of the base and asphalt to ensure it meets the traffic needs well into the design year while maintaining its structural integrity. We also have experience in the design of rigid pavement as maybe required on heavily travelled truck routes.

Widening

Metric's roadway design staff is comprised of high-level engineers and designers with a significant amount of roadway reconstruction and widening experience. This experience is not only on rural facilities, but most importantly given the urban nature of large areas of Broward County, we have a large amount of project experience of widening/reconstruction jobs within urban corridors. This includes dealing with the unique challenges associated with these projects such as constraint R/W, utilities, access requirements, back of sidewalk profiles, harmonization with abutting land uses and driveways. Our engineers have the technical knowhow in developing typical sections, cross sections, profiles utilizing

either MicroStation with Geopak or AutoCAD. Our staff has a hands-on understanding of all of the relevant manuals and guidelines associated with widening projects, including but not limited to: AASHTO, A Policy on Geometric Design of Highways and Streets, FDOT Plans Preparation Manuals (PPM), and the Florida Greenbook. Any widening project will consider all of the needs to be addressed, the impacts to be mitigated; and will be performed while keeping with the Complete Street concept.

Pedestrian/Bicycle/Transit Connector Linkages

Bicycling and walking are rapidly becoming realistic modes of transportation as traffic congestion and environmental concerns become more evident. Pedestrian and Bicycle linkages play an integral role in establishing an effective and safe transit system. Enhanced pedestrian/bicyclists features make transit a more viable mode, while an improved transit system will help make a community less car-dependent and more pedestrian-friendly. Transit access should be improved comprehensively and consistently and to support coordination with other entities.

Metric will focus on addressing challenges that pedestrians/ bicyclists face, such as access, connectivity and safety. We will strive to improve pedestrian/bicycle conditions on all roads, including large commercial arterial roads.

We will create strategies and standards for the improvement of safe pedestrian and bicycle access on roadways and sidewalks, particularly in designated key corridors, as well as identify locations and strategies for creating new off-road paths that will enhance the pedestrian and bicycle connections to key neighborhood amenities.

We will assist in developing the guidelines regarding how to design access to the various stations and stops. The guidelines should outline the roles and responsibilities for each public agency with respect to pedestrian and bicycle access improvements.

We also have an extensive amount of experience in the planning and design of the following important pedestrian/bicyclists access/safety features: special crosswalk markings, overhead signage, bulbouts, midblock crossings, refuge islands, pedestrian corrals, and over/underpasses.

Sidewalk Projects

Sidewalk construction projects will place special emphasis on minimizing design and construction costs, avoiding R/W acquisition and/or construction easements, and maximizing public safety. As a cost saving method, existing construction plans or aerials will be used as much as possible to minimize the need for design survey. The adherence to ADA requirements and the avoidance of utility conflicts, mailboxes, and landscaping will be emphasized. Public safety will be maximized through the location of the sidewalk as far from the travel lanes as possible and by reducing or eliminating sight distance problems. Ditch grading, side drain reconstruction, and driveway reconstruction will also be considered. A source of data collection will be school officials and representatives of other pedestrian-generating facilities.

Maintenance of Traffic (MOT)

Metric understands the specific challenges and constraints associated with the development of the Traffic Control Plans (TCP) for any type of project. We will design a traffic control plan following the requirements of the County RFP, FDOT PPM, FDOT Design Standard Index 600 Series and the MUTCD that provides a safe environment for the traveling public and workers, maintains or improve traffic operations to the maximum extent feasible, minimizes the number of traffic pattern changes, and minimize construction noise, vibration and visual impacts to the adjacent properties. Our team will adhere to all lane closure restriction times and any special events. Hurricane evacuation will also be managed in a manner similar to special events with minimal notice. All lane and ramp closures will be reported to the local emergency agencies, the media and the County PIO. Maintaining proper drainage during construction is always a critical element to a successful MOT plan. Our design team will perform spread calculations to ensure that positive drainage is maintained at all times.

Drainage

All stormwater design services will be prepared as per the criteria of the Broward County and the South Florida Water Management District (SFWMD). Design services will be performed with the assistance of several computer software

packages such as the proprietary ADICPR, an interconnected pond routing program, MODRET a groundwater mounding analysis program, and several programs in the HEC series. All programs used in the design analysis will have the approval of Broward County. Stormwater pollution prevention plans will be prepared for each project where applicable.

In order to size culverts, ditches, swales, retention ponds and/or storm sewer systems associated with the aforementioned types of improvements, as well as site development projects, all basins within the project area will be delineated and evaluated by review of available U.S.G.S. Quadrangle sheets, Aerial Photogrammetry, SJRWMD topo maps, and field verification of contributing areas. Design frequency hydrographs will be developed using rainfall maps of the SJRWMD and/or Broward County and applied to the SCS Type II Florida Modified rainfall distribution. Weighted runoff coefficients/ curve numbers (CN Values), aerial photographs and SCS soil maps obtained from the Soil Survey of Putnam County, Florida will be utilized to define relative quantity of soil types. Pervious and impervious areas will be measured by planimeter or using CAD software. Hydrologic group numbers and CN numbers will be obtained from the SCS - Technical Release 55. Using rational equation, SCS unit hydrograph and/or regional or local regression equation methodologies as applicable, design volumes and discharges would be developed and used as required to complete the final design.

The paving of unpaved roads will qualify for Standard General Environmental Resource Permits as long as the following criteria are met; the road will not serve new development, additional traffic lanes are not added to the road, the traffic load is not expected to increase, the drainage system is not significantly altered, erosion and sediment controls are utilized to prevent turbidity during construction, the construction does not involve dredging or filling in wetlands, permanent vegetative cover is established on both sides of the pavement, and swale blocks are used to retain runoff. Where projects connect to, or are on state roads, a drainage connection permit would be required.

Floodplain encroachment is key when evaluating proposed improvements on any project, such as elevation adjustments associated with impacts of base floodplain limits due to encroachment of ground water table into the roadway base clearance. This could lead to the introduction or increase of adverse environmental impacts, increase flood risks or damage, or potential interruption/termination of road service or emergency evacuation routes.

BMA has been included on the Metric team to assist with climate change resiliency drainage improvements. Some tasks anticipated under this contract may include but not be limited to the design of new sea walls, storm pumping systems, green retention systems, existing roadway elevation adjustment, and tidal control will be designed by the Metric Team. There is existing ponding/flooding that occurs on many of the streets located along the beaches during high tide. For this type of issue, the existing drainage system will be reviewed and analyzed. The existing drainage system may only need to be revised (e.g. larger pipes) or if applicable a storm pump system may need to be designed to accommodate the flooding periods. Sloped areas near waterways may also require a slope protection revetment system.

BMA also has extensive experience in sea-wall designs having implemented improvements for FDOT at several sites. The improvements require detail flow-net analysis of the ground water in order to ensure that the implementation system provides a long-term solution to the flooding condition. Expected improvements may also include milling and resurfacing the existing roadway pavement to include raising the profile with asphalt base, shoulder reconstruction, upgrade guardrail, guardrail end treatments & guard rail at bridge connections.

Miscellaneous Structures

Our Team of seasoned Structural Engineers has extensive relevant experience designing and analyzing the full spectrum of miscellaneous structures anticipated as part of the scope of services for this critical Engineering Services contract. We understand work orders will include the design of new mast arm configurations and replacement mast arms for existing strain pole configurations. We have completed countless similar projects throughout Broward County which included design of new mast arms as well as analysis of existing structures to verify capacity to support the addition of various ITS devices such as video detection equipment. Our structural engineers have performed numerous field inspections as part of these assignment to collect critical information needed for analysis and we are also well versed in the custom design of mast arms to accommodate overhead school flashers with solar equipment installations. Our Team's engineering expertise also includes foundation design such as drilled shafts and spread footers when required to mitigate utility impacts. A sampling of previous unique structural design tasks we have completed for the County include: Mast Arms

Retrofits for increased structural capacity, Railing Retrofits, Pedestrian Stairs and Ramps, Maintenance Worker Platforms for Mast Arm Access, Retaining Walls, Pedestal Mounted Signals and Damage Assessment Inspection of vehicle impacted Mast Arms.

We are fully versed in the latest AASHTO LRFDLTS-1 design criteria and the associated FDOT Structures Design Manual modifications to the LRFDLTS-1 which includes the use of 170 mph Design Wind Speed for Broward County. Our Team's expertise brings with it a comprehensive understanding of all FDOT structural design software associated with miscellaneous structures such as their Mathcad programs for mast arms and foundations and the Atlas software for strain pole supported signals. We also were fortunate enough to have participated in the County's mast arm replacement contract as the Design Criteria Package Professional and through that project we amassed a vast experience in the analyses of the available Broward County mast arm inventory.

It should be noted that our group of structural engineers have, or currently are, providing various different structural designs for the County and can continue to do so as we have been extremely responsive to the County's needs and requests. Metric has provided structural design details for beefing up existing Broward mast arms to allow them to meet current wind load standards; provided structural design for maintenance worker platforms for mast arms on canal slopes; performed structural review of mast arms damaged from vehicle impacts; and lastly, evaluated and designed pedestal mounted signal(s). Additional projects include the Everglades Holiday Park Bridge Replacement Project (includes Levee Wall, stairs and ramp) and 136th Avenue (Pedestrian Railing Retrofit for Concrete Wall).

Minor Bridge/Drainage Structure Replacement or Rehabilitation

Metric will contact Broward County Maintenance for information concerning past repair work associated costs, structural deficiencies, load limitations, etc. In addition, existing plans, permits, inspection reports, and other pertinent documentation will be researched. An on-site structural inspection will be conducted to ascertain widening and/or rehabilitation potentials and structural deficiencies. For drainage structure replacements, an abbreviated hydrologic basin study will be conducted to determine required structural opening size, hydraulic characteristics, and required upstream and downstream channel improvements and scour protection.

Metric will provide an engineering report documenting existing structural conditions and recommended hydraulic requirements and channel improvements. This report will also evaluate all viable design alternatives and will recommend a design alternative for County approval. Metric will consider structural replacement and rehabilitation and/or widening alternatives. Structural replacement candidates will include, but not be limited to, concrete and steel bridge structures, pre-cast or pre-fabricated culverts, cast-in-place culverts, and concrete and corrugated metal pipe culverts. Rehabilitation and/or widening alternatives will be analyzed for constructability, maintenance concerns, and remaining design life. Preliminary construction costs, roadway typical section requirements, hydraulic characteristics, R/W impacts, traffic control requirements (including the availability of a suitable detour route and the length of construction time), environmental impacts, roadway approach and drainage improvements, utility relocations, etc. will be developed and addressed for each alternative. The results will be summarized in a matrix format.

Public Involvement

The Metric Team will implement public outreach programs that are Informative, Inclusive, Interactive and Responsive. Our technical approach will be to develop a comprehensive public outreach program that utilizes integrated tools to proactively inform stakeholders throughout the term of the program while also promptly responding to arising stakeholder concerns accurately and consistent with the County's goals.

When required, a Public Involvement Plan (PIP) of Community Awareness Plan (CAP) that is specifically tailored to the task assignment will be developed that promotes communications with the community in order to foster good will, build credibility, share information and knowledge, and encourage public participation. In addition, this plan will facilitate dialogue and a partnering process between the County, property owners, and other concerned entities and individuals. Typically, issues of concern include access management, utility corridors, landscaping, property access, construction time and impacts, and right-of-way requirements. Adept PR will be responsible for leading the public involvement effort for this

contract. Specific to this project, they will work with the Broward County Highway Construction and Engineering Division and Metric to provide public involvement and stakeholder liaison services to comply with County, State and Federal needs to establish a positive public-government relationship. Adept PR will be available to inform the stakeholders about each phase of the project which might be design, engineering, study, analysis and evaluation, implementation, construction, and construction management.

Among ways to familiarize the public with each task at hand, Adept PR is capable of distribute plans, agendas, door hangers, brochures, create online surveys and organize public meetings. In addition, we can create a CAP which its objective is to notify local governments, affected property owners, tenants and FDOT staff of proposed construction and the anticipated impact of that construction. Our goal is to proactively engage our target audience (impacted residents, businesses, organizations, public officials, relevant agencies, media, etc.) with a goal to:

CAP Goals/Objectives:

1. Maintain open communication and provide timely information about the Project during each implementation phase to business owners, organizations, residents, neighborhood associations and other stakeholders.
2. Inform them about the various upcoming improvement projects and apprise the community of potential impacts and developments throughout the implementation of the Project.
3. Educate them about the process, timeline and what to expect, but also to promote the benefits of the improvements to the stakeholders.
4. Offer stakeholders an opportunity to provide input on aesthetic enhancements specific to their community during the design phase of the project.
5. Offer an open line of communication should they need to assistance or have questions during the process which includes bilingual staff to assist in the communication efforts.
6. Hosting public meetings, open house events and public hearings, if applicable, to keep the public informed and engaged.
7. Providing timely notification of the progress of the Project through newsletters, website updates, newspaper articles and advertisements, and mailings.
8. Working with elected officials and civic leaders to create awareness within the Project area and surrounding communities.

An Introductory Kick-off Meeting, an Alternatives Information Public Workshop, and a Preferred Concept Meeting will be held as required in the task assignment schedule. These meetings will be held in informal, open house workshop settings so citizens can review project information at their own pace. Metric will prepare informative PowerPoint, multi-media presentations for the County staff and will be present to assist both the public and the County. All graphics will be of professional quality and designed to convey project data in an easy-to-understand format and will include plan view construction drawings and/or aerial photography depicting relevant data such as property lines, property owner names, and estimated R/W acquisition requirements. Community awareness will be maintained by a combination of coordination meetings with local and state agencies, small group meetings, a continually updated mailing list, a project newsletter, public notices, a WEB page, advertisements, and news releases. The project team will be available to meet with neighborhoods, PTA's, businesses, and civic groups. The effective use of these tools allows us to be responsive to the concerns of the community. As suggestions are made, we will make sure that they are included in the technical evaluations. Just as important is our ability to provide feedback on each suggestion and demonstrate what was kept and what was dropped from the study process, and why. Without this interactive approach, misunderstandings can quickly spread throughout the County and communities, needlessly complicating the study process. We have found that by working closely with local and state agencies, business interests, environmental and civic groups, and neighborhood communities, we will have NO SURPRISES at the time a recommendation is made.

Innovation & Technology in Public Involvement

Metric has Software Solution staff members comprised of registered and experienced GIS Professionals who are capable of website and application development / hosting services. In fact, for Public Involvement Meetings with the community, our staff have developed ESRI-based GIS tools that create an interactive touch screen displays where stakeholders can

easily maneuver through data collection information by viewing project alternatives (with zooming in capabilities), viewing property information, renderings, etc. The feedback we have received from the community has risen based on such tools to where even clients have noticed the functionality and power of this tool.

Additional Design Support Services

Environmental & Permitting

Metric's environmental approach follows our well-established company protocols for providing support across transportation and civil engineering projects and has been established based upon our extensive and relevant environmental experience, including serving as the FDOT District 6 Environmental Compliance Consultant, the FDOT District 6 Mitigation Consultant, numerous Design-Build projects for FDOT District 4, and as a holder of the Broward County Environmental Library contract. From this foundation, we further customize our approach to match the specific environmental conditions in Broward County and to fulfill the County's specific needs under this contract.

Also of importance is our experience working with Broward County on Metric's current Continuing Engineering Services contract. We have expert familiarity with the variety of environmental conflicts and complicated documentation requirements encountered by typical traffic capital improvement projects; examples include waterway crossings, obtaining complete roadway ownership documentation, and coordinating LAP NEPA clearances. We understand various permitting elements (complex or not) can have significant schedule implications (e.g. identifying and obtaining background ownership documentation for establishment of sufficient legal interest and agency jurisdiction). Our environmental staff have worked extensively with Frank Guiliano and Eric Augusto for various County R/W and survey support/coordination elements under this contract.

Because of this experience, our environmental staff has a proven approach to **EARLY PERMITTING**. On each project, our staff will: 1) review the project's environmental scope and objectives in detail, and conduct a desktop review of environmental site conditions; 2) locate and document environmental conflicts; 3) work closely with our design engineers to avoid/minimize impacts; 4) identify all permitting and clearance documentation requirements and timelines; 4) work effectively to produce clearance documents and obtain necessary permits; and, 5) provide construction monitoring/compliance inspections when needed.

Typical agencies our environmental staff coordinate with (and their noted challenges) include:

Agency	Program / Area	Notes
Broward County Environmental Protection & Growth Management Department (EPGMD)	Aquatic & Wetland Resources Program	Environmental Resource General Licenses (GLs) for de-minimis projects
	Tree Preservation Program	Tree Removal License (if/when necessary)
Florida Department of Environmental Protection (FDEP)	Environmental Resource Permits	FDEP is the responsible State agency for utility projects; typically, eligible for GP 62-330.453. We have a unique ability to coordinate Special Case Agreements to streamline both state and County environmental permitting though the County office.
	Division of State Lands	Submit inquiries to FDEP for State Owned Sovereign Submerged Land (SSL) limits, jurisdiction, and existing approvals. We work with our Team or County surveyors to coordinate SSL easements for any cable crossings in, over, or under natural waterways.

Agency	Program / Area	Notes
South Florida Water Management District (SFWMD)	R/W Permits	The short permit duration can be problematic (one year is not sufficient for county procurement schedules. And, existing unauthorized utilities must be authorized or removed prior to approval of new installations.
Local Drainage Districts (e.g. Old Plantation Water Control District)	Legal Encroachment Agreements	These require legal review, fees, and commission approvals for execution of agreements which can delay the process if not coordinated successfully.
US. Army Corps of Engineers	D&F (Section 404 Clean Water Act or Section 10 Rivers and Harbors Act)	NWP-12 for utility crossings of jurisdictional waterways
	Section 408 reviews	These are required for Federal Central and South Florida Flood Control waterways and has the potential for substantial delays
Municipal engineering permits required for work outside County roadways/jurisdiction		Hardcopy submittals only, but, final review/approval timeframes unpredictable

Local Agency Project (LAP) Support Proficiency

In addition to the experience and knowledge we have with permitting agencies, our Team is extremely familiar with NEPA documentation requirements for LAP projects, and we can coordinate the necessary NEPA clearances required by FDOT/FHWA. We prepare the necessary documentation for wetlands, wildlife, contamination, Section 4(f) and Sociocultural reviews, and cultural/historical/archaeological reviews (we have SEARCH on the team to assist with CRAS preparation and obtaining SHPO concurrences).

Our Team knows how to coordinate FDOT submittals and ERC comment responses from the District 4 EMO and we need to coordinate and implement project-specific plan notes from ERC reviews to address any specific NEPA commitments. We make sure to coordinate preparation of Cat-Ex Checklists with the FDOT District 4 EMO consultant through the County Project Manager.

Geotechnical

Geotechnical engineering services will be performed in accordance with the project requirements. More specifically our investigation, analysis, reports, and plan sheets will be completed following the methods prescribed in the FDOT's Soils and Foundations Manual, or per Broward County requirements. Other publications, such as the USDA Soil Survey, USGS Maps, and any other information that could be provided by Broward County, will be reviewed.

Once a TWO is provided and prior to starting the geotechnical evaluation, TSF and/or HPCI will discuss the geotechnical scope of work with Metric's Project Manager and Broward County engineer. The project scope and requirements will be reviewed and discussed. Existing project information, aerial photographs, soil survey information, USGS maps, field reconnaissance information will be used to aid in determining project needs and concerns. Proposal is submitted based on agreed scope of services. Upon approval, utility clearance coordination is performed, and the Project Manager is informed of our work schedule. In addition, any required special use permits will be requested from the local maintenance office. Maintenance of traffic (MOT), when necessary, will comply with FDOT/Broward County procedures/indices. Before drilling, the site will be cleared for underground utilities.

Borings will be performed in proposed retention pond areas, box culvert improvement areas, and sign/signal foundation locations. Once the field phase is completed, soil samples will be transported to a certified laboratory for visual classification and necessary laboratory testing. Engineering services will include coordination of all field and laboratory testing as well as engineering recommendations for the design and construction of roadway embankments. The exploration will be directed by a qualified geotechnical engineer registered in the state of Florida and the results of the exploration will be presented in a geotechnical engineering report. Key geotechnical issues for typical roadway projects include the following:

- Evaluation of soil and groundwater conditions in improvement areas;
- Delineation of unsuitable soils, if any, in improvement areas;
- Roadway base clearance in the lower lying areas.

The Metric Team will also provide material testing during the construction phase of these projects. Services will include density tests on the subbase and base, Limerock Bearing Ratio (LBR) tests, moisture-density tests, pavement coring, etc. We have a team of well-qualified technicians that will service the material testing needs of these projects.

Survey

Metric team members (Stoner and WGI) will provide design survey services to Broward County including bench levels, horizontal control, section lines, environmental considerations, aerial control, and the completion of GPS control. We will maintain contact and coordination with the County's R/W Review Agent on an as-needed basis. Submittals of control and/or right-of-way maps will be made at 60% and 90% review stages, or as desired by the County.

Survey services will be performed utilizing a logical phased approach. Research will be performed by a Field Supervisor for determination of nearby control, both horizontal and vertical, and/or the necessity for GPS establishment of control. Any advance work required, such as utility locates or wetland flagging, will be coordinated before scheduling the field work so as to more efficiently complete the field work without interruption.

The Project Surveyor and Field Supervisor will meet to discuss the best method, and number of crews to employ in the performance of any required tasks. Existing documents, such as deeds of record, tax maps and prior surveys will be acquired and provided to the field crew(s) before field work begins. Field work will be closely supervised by the Field Supervisor during the field effort. GPS will be performed if required and traverse closure and bench run closure will be verified using GEOPAK software before proceeding with the location phase of the field effort. The location phase of the project will be performed using total stations and data collectors using EFB software. Daily downloads of electronically collected data will be performed at day's end to eliminate lost data due to equipment malfunction. The field data will be processed using CAiCE software. Draft prints will be run and field reviewed before completion of the mapping effort.

The field party chiefs will perform a completeness review of the 90% maps and a final QA/QC check will be performed by the Project Surveyor to ensure compliance with Broward County standards. Final delivery to the County will be made both in hard copy and electronic versions using MicroStation or AutoCAD.

SUE

Subsurface Utility Engineering (SUE) provides accurate mapping of existing underground utilities, eliminating the need to "find out the hard way" that plotted utility information was inaccurate. Performed during the project design process, SUE can help utility owners, designers, engineers and contractors avoid conflicts or project delays. SUE services often result in the enhanced accuracy of project designs and cost estimates by collecting and mapping underground utility data that was primarily unknown.

Metric's team members (Keith & Compass) will coordinate with Sunshine State One Call to identify subsurface utility installations as well as with local utility providers to assure adequate and accurate identification of utilities. The field team will mark on the ground the approximate location of subsurface utilities as determined by electronic sensing devices (designate) and utilize soft excavation techniques to expose and verify (locate) specific utilities at the direction of the

Project Engineer. We will provide detailed reports of verified utilities in a format consistent with the general project standards.

Building Information Modeling (BIM)

Keith's approach to utility and Infrastructure design is not just to a provide cost effective, innovative design for current design projects online, but to look at the design with potential growth in mind and how projects will be serviced in the future, as new development and expansion takes place. Keith understands the importance of designing with the future in mind. Keith has the capacity and expertise to model existing surfaces through the use of laser scans/3D point clouds and proposed surfaces, underground utilities utilizing Civil 3D, as well as importing/coordinating other building information models on or adjacent to the site. With this knowledge, the Owner can consider potential savings in evaluating proposed projects, layouts of new buildings and facilities, preparing cut and fill calculations and quantity estimating/take offs, not to mention the advantage of having accurate data for future development, facility management and analysis of life cycle costs.

We believe in utilizing formulated guidelines to obtain all newly installed infrastructure, as well as field as-built information and test hole data in a digital geo-referenced format. The use of Building Information Modeling (BIM) as a deliverable allows for the owner to maximize their ability to have the data managed in all formats (Revit/AutoCAD Civil 3D, COBie data and GIS) and for that data to be utilized throughout the life span of the facility.

Metric trusts Keith's experience with BIM which is extensive, covering the building life cycle from, virtualizing existing conditions, to Design and Construction. In addition to Civil modeling, they have experience with modeling and collaborating with all the other major disciplines and trades both during design and construction. Keith's staff will document the existing site into BIM using information from our Survey Team. From there, a geolocated Site BIM can be used by the entire Design Team as a starting point. The internal disciplines including civil engineering, landscape architecture and SUE will inform and develop the Design Civil Information Model (CIM) through the design stages. Revit Models will be shared regularly with the overall team to be visualized coordinated and managed in either NavisWorks or Autodesk BIM 360.

In-House Services

Metric maintains a Broward County office and is offering Margaret "Maggie" Maher with Metric to remain available for any in-house presence the County requires. We realize that the Broward County Traffic Engineering Division has a very aggressive work program with a multitude of projects ongoing and planned throughout the County. We understand that this means that County staff may need additional support to be on-hand and ready to step in at a short notice on tasks both small and large. For the past ~1.5 years, Metric staff (Jonathan Baggett and now Margaret Maher) have provided a multitude of in-house support services such as plan preparation, cost estimation, site reviews, MOT design, QC checks, presentation prep, comment resolution for roadway, sidewalk, drainage, and traffic projects.

EVALUATION CRITERIA

3) Past Performance

(3) PAST PERFORMANCE

Vendor Reference Verification Forms

Vendor Reference Verification Forms for a minimum of three projects with references are included following this section. Some of the client references provided via the Vendor Reference Form overlap with the references provided for each of the following types below as listed by the RFP for similar projects.

Similar Projects with References

A. Describe Prime Vendor's experience on projects of similar nature, scope and duration, along with evidence of satisfactory completion, both on time and within budget, for past five years. Provide a minimum of three projects with references for the following types of projects:

- **Traffic Signal Design & Operations**

(2017 – 2022) Continuing Services Contract for Traffic Operations – Metric's 4th Consecutive Contract, FDOT District 5

Professional transportation, planning, and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks included ITS Design and Integration, Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts. Over 50 TWOs totaling in $2.5M worth of design services to date. Metric has held this contract consecutively since 2001.

Reference:

FDOT District 5
Zachary Zalneraitis, PE (Traffic Studies Engineer)
719 S. Woodland Blvd. Deland, FL 32720 | Office: 386-943-5330 | Email: Zachary.Zalneraitis@dot.state.fl.us

(2018 – 2020) Continuing Transportation Engineering & Planning Services – Metric's 3rd Consecutive Contract, City of Orlando

Metric was selected to perform professional services for the City of Orlando in all phases of projects as assigned through TWOs. Services include transportation engineering and planning services including civil, architectural, structural, mechanical, environmental, transportation, stormwater, irrigation, landscaping, and electrical engineering services as needed dependent on the project assigned. Potential work as advertised: transportation planning; traffic studies, analysis, and designs; civil preliminary and final designs including plans preparation; and more. Examples of TWOs issued under this contract:

- Millenia Blvd Mast Arm Installation Design
- Orlando Library Pedestrian Crossing

Reference:

City of Orlando
Jeremy M. Crowe, PE, PTOE (Project Manager II)
400 S. Orange Avenue, 8th Floor, Orlando, FL 32801 | Phone: 407-246-3262 | Email: jeremy.crowe@cityoforlando.net

(2018 – 2019) Continuing Professional Traffic Engineering Services, Orange County

Metric provides miscellaneous professional traffic engineering services on this TWO-based continuing services contract to support the safe and efficient movement of all users of the County's transportation network. All work performed under this contract complies with the latest Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and the most recent edition of the Florida Department of Transportation (FDOT) Design Standards, Traffic Engineering Manual (TEM), Speed Zoning Manual, and Manual on Uniform Traffic Studies (MUTS) guidelines. Tasks include but are not limited to: Data Collection (Turning Movement Counts & Machine Traffic Counts); Traffic Studies (Spot Speed Studies, Intersection Delay Studies, Origin & Destination Studies, Traffic Signal Warrant Studies, School Safety Studies, Pedestrian & Bicycle Safety Studies, Road Safety Audit (RSA) Studies, Miscellaneous Traffic Operational & Safety Studies, Roundabout Evaluations, and more); Traffic Signal, ITS, S&PM and Maintenance of Traffic Design Services; Studies & Design Review Support; Traffic Control/ITS Inventory Support; Minor Intersection Design; Signal/Corridor Retiming; Guardrail Analysis & Design; and, Public Involvement Services. An overview of TWOs that have been assigned:

- Alternative Road Impact Fee Monitoring Study for Plaza on University
- Traffic Data Collection
- Meadow Woods Sunrail Station Study
- Avalon Road No Passing Zone Study
- Westwood Blvd Pedestrian Signals Design
- Wyndham Lakes Pedestrian Study
- Overhead School Flashers Design
- Signalized Intersection at Balcombe
- Two Lane School Zone Evaluations
- Red Light Running Cameras

Reference:

Orange County
Elia Batista (Project Manager)
PO Box 1393, Orlando, Fl 32802 | Phone: 407-836-5344 | Email: elia.batista@ocfl.net

(2018 – 2020) Traffic Signal Retiming (2018 – 2020), Metroplan Orlando

As a prime consultant, Metric provides professional services for conducting corridor retiming on an as needed basis issued by task work orders. Overall, Metric develops traffic signal timing plans for implementation to improve the efficiency and safety along with corridors under MetroPlan's jurisdiction. Arterial retiming efforts includes but are not limited to: system operation review, traffic signal equipment inventory, analysis/implementation/documentation, data collection (4-Hour & 8-Hour Turning Movement Counts with pedestrians, bicycles, and trucks; 24-Hour Traffic Counts for Intersections; 7-Day Continuous Traffic Counts in both directions; and more) as well as public presentations and other miscellaneous tasks.

Reference:

MetroPlan Orlando
Eric Hill (Director of TSM&O)
250 S. Orange Ave Ste 200, Orlando, FL 32801 | Phone: 407-481-5672 | Email: ehill@metroplanorlango.org

(2016 – 2019) Traffic Engineering Services for Traffic Studies, City of Jacksonville

This contract is to provide various traffic engineering services which include: Crash Analysis with Mitigation Plans; Traffic Safety Studies with Mitigation Plans; Traffic Calming Plans; Traffic Impact Studies; Traffic Control Warrant Analysis; Access Management Plans; Traffic Circulation Plans and Traffic Routing Plans; Travel Time and Delay Studies; Review/Development/Revision of Engineering and Planning Documents; Evaluating and/or Conducting Traffic Operational/Safety Studies; Intersection Designs; and Public Information Meetings. Metric developed safety and traffic operation studies for the installation of new traffic signals (signal warrant studies), isolation intersection analyses, roadway studies (speed zone, no-passing zones), highway lighting justification, as well as traffic calming analyses. This work also includes intensive data collection efforts, engineering and crash analyses, field reviews, and Benefit/Cost Analyses. Examples of TWOs issued under this contract:

- Signal Retiming Belfort Rd Corridor

- Kernan Blvd Corridor Signal Retiming
- Neptune Beach Roundabout Study
- Moncrief Road Diet Study
- Hodges at Glen Kernan Design

Reference:

City of Jacksonville
Christopher W. LeDew, PE (Chief Engineer - Traffic Engineering Division)
1007 Superior Street, Jacksonville, FL 32254 | Phone: 904-255-7533 | Email: CLeDew@coj.net

➲ **Traffic Signal Communication System Technologies**

(2018 – 2023) DW TSM&O Studies & Design, FDOT District 5

TSM&O studies, design and preparation of roadway construction plans for proposed miscellaneous improvements within Volusia, Brevard, Orange, Osceola, Seminole, Marion, and Lake Counties. Preparation of a set of contract plans which may include ITS, roadway, signing and pavement markings, signalization, lighting, sidewalk and/or bicycle ways. Other work types include Concept of Operations, Alternative Intersection Study, Hard Shoulder Study, TSM&O Arterial Corridor Studies, Local MPO & TPO Funded Projects, TSM&O Pedestrian & Bicycle Safety Improvements, Transit Signal Priority Studies and Design, Bridge Security Design, Design of DMS, CCTV, Bluetooth, MVDS, and other general TSM&O improvements. This contract has involved several ITS projects with Adaptive Signal Control Technology (ASCT) systems. An example of project(s) issued under this contract:

- **ITS Expansion Services on SR 3 / Courtney Parkway:** Metric designed the ITS infrastructure sub-system components along the corridor of Courtenay Parkway (SR 3) from Cone Rd to SR 528 in Brevard County, Florida. ITS sub-systems for the project are defined as: extension of fiber optic network system (FON), high resolution traffic signal controllers to support Active Arterial Management (AAM), a high definition video vehicle detection system, a closed-circuit television (CCTV) camera system, a travel-time data collection system for the corridor and Automated Traffic Signal Performance Measures (ATSPM). The design includes detection devices for presence/path and advanced detection on all approaches (minor and major) to gather information for ATSPM. Included ITS, S&PM, and Signalization services.

Additional projects/TWOs under this contract: Design Services for Countywide DTMS for Seminole Phase 1; Design Services for SR 44 ASCT; ITS Expansion Services on SR 507; and, ITS Expansion Services on SR 500

Reference:

FDOT District 5
Noemi Rodriguez Bonilla, EI (FDOT Project Manager)
719 S. Woodland Blvd., DeLand, FL 32720 | Phone: 386-943-5327 | Email: noemi.rodriguez-bonilla@dot.state.fl.us

(2019 – 2020) CV Signal Phasing and Timing (SPaT) Deployment "Gainesville Trapezium" Project (sub to Siemens), FDOT Central Office

Better known as the Gainesville Trapezium project, this project furnished and installed roadside units (RSUs) at 27 intersections along four major corridors forming a trapezium around the University of Florida. The RSUs utilized Dedicated Short-Range Communications (DSRC) for communication. The following applications will be available with the deployment of this project: SPaT/MAP message base applications, forward collision warnings, emergency brake light warning, do not pass warning, work zone warnings, curve speed warnings, and a few value-added applications including emergency vehicle preemption and transit signal priority (TSP). As the EOR, Metric was responsible for creating the implementation plans for all project traffic signals showing conduit runs to/from RSUs and the traffic signal cabinet, RSU mounting heights, mast arm locations, cabinet devices, new cable and conduit runs, cabinet power and communication connections, integration

with City's central system, etc. We are also responsible for applying for any permits required on the project including the FCC Licensing permits for each RSU. Prime Consultant: Siemens Mobility, Inc.

Reference:

FDOT Central Office
Raj Ponnaluri, PhD, PE, PTOE, PMP (CV & Arterial Management Engineer)
605 Suwannee St.; MS 90, Tallahassee, FL 32399 | Phone: 850-410-5616 | Email: raj.ponnaluri@dot.state.fl.us

(2017 – 2022) Professional Traffic Engineering Consultant Services for ATMS/ITS, Pinellas County

A TWO-based continuing services contract with the County to provide professional miscellaneous ITS/ATMS and Traffic Engineering services with the goal to complete projects for their Capital Improvement Program (CIP) related to the Countywide ATMS & ITS, known as Smart Tracs. Metric provides continuing Engineering and Information and Communication Technology (ICT) services for a wide range of engineering, technical, computer, communications, management and administrative services. The primary program is the design, construction, operation and maintenance of the Pinellas County ATMS/ ITS as documented in the "Intelligent Transportation Systems / Advanced Traffic Management System Implementation Plan". Tasks can include but are not limited to: development of scope of services, contracts, agreements, and/or Memorandums of Understanding (MOUs); review of plan submittals and other technical documents; QC and constructability reviews; perform system engineering with integration services; CEI services for ITS/ATMS projects Metric is not involved with; ITS/ATMS design services and all supporting engineering services associated with it; information technology and communications support services; develop, update and maintain Standard Operations Procedures (SOPs) for the System; and, conduct traffic analysis. Examples of TWOs issued under this contract:

- **Traffic Engineering Services for Countywide DMS Emergency Inspections:** Metric provides DMS structures inspection at 36 locations throughout the County as a result of Hurricane Irma. Metric inspects each DMS to determine any damages and prepares inspection reports with support documentation such as photos of identified deficiencies.
- **49th Street ATMS / ITS Design Services:** As part of Pinellas County's countywide ATMS, the County plans to deploy and equip 49th Street from 46th Avenue North to Gulf to Bay Boulevard with ITS devices. Metris is preparing the ITS plans and applicable design documentation including final design plans and cost estimation within these specific limits (approximately 10.2 miles in length) for this implementation. The design includes ITS infrastructure such a fiber-based communication, three ADMS, 10 CCTVs, adaptive traffic control system with video detection at all signalized intersections and new stop bar loops at strain pole locations. The design provides details for the railroad crossing within the corridor as well prepare the documentation to secure the necessary permits. As part of this effort, ATMS/ITS data collection is provided as well as survey/SUE, utility coordination, field reviews, structures, geotechnical, environmental evaluations and permitting and agency coordination.

Reference:

Pinellas County
Robert C. Meador, PE (Project Manager)
22211 US Highway 19 North, Clearwater, FL 33765 | Phone: 727-464-8731 | Email: rmeador@pinellascounty.org

(2017 – 2019) I-75 F.R.A.M.E. (Florida's Regional Advanced Mobility Elements), FDOT District 5

Metric represents the FDOT District 5 ITS as the Systems Manager for the I-75 F.R.A.M.E. project which assists in the advancement of the Multimodal Integrated Corridor Management (MMICM) plan. As the Systems Manager, Metric is responsible for coordinating, testing and providing documentation on the various technologies to include Roadside Units (RSUs), vehicular On-board Units (OBUs) as well as emulated OBUs (mobile devices and/or tablets) to ensure device interoperability. This project is in line with the USDOT goals and will contribute to increased safety, reliability and mobility needs using advanced CV technologies. Metric staff is responsible for integrating these devices to multiple signal

controllers with the goal of verifying the various CV-related applications: Signal Phase & Timing (SPaT), Automated Traffic Signal Performance Measures (ATSPM), MAP messages, Traveler Information Messages (TIM), Basic Safety Messages (BSM), Emergency Vehicle Protocol (EVP), Transit Signal Priority (TSP) and others related to pedestrian safety. Metric staff has conducted extensive testing in both the lab and field environments with equipment provided by several CV vendors. As a result of the testing, reports were generated to guide the System Manager in their decision-making process for the development of the CV specifications and eventual decision-making on the F.R.A.M.E., SR 434, and PedSafe projects and any other future CV deployments. Metric is also responsible for configuring, integrating and testing all CV devices into the FDOT ITS network.

Furthermore, Metric is actively involved in the development of CV specifications to include Technical Special Provisions (TSPs) as well as Modified Special Provisions (MSPs). Specifications were written relative to the CV equipment and supporting standards for hardware and software that is consistent with the minimum requirements of the USDOT RSU 4.1 Specifications. This document is currently under development and is being developed in coordination with the FDOT. These documents will assist in the design and deployment of the FRAME, and other ongoing FDOT District 5 projects related to other future CV deployments. **FDOT Districts 2, 5 and Central Office won ITS Florida's 2018 Outstanding Achievement Award in recognition of the successful I-75 F.R.A.M.E. project(s).**

Reference:

FDOT District 5
Noemi Rodriguez Bonilla, EI (FDOT Project Manager)
719 S. Woodland Blvd., DeLand, FL 32720 | Phone: 386-943-5327 | Email: noemi.rodriguez-bonilla@dot.state.fl.us

➲ **School Zone Flasher Systems**

(2018 – 2019) Continuing Professional Traffic Engineering Services, Orange County

Two-Lane School Zones and Flashers Upgrades Plans: As a TWO under this contract from April through September in 2019, this project involved the creation of a plans set for Orange County to use with their maintenance forces to upgrade 98 school zones associated with two-lane divided and undivided roads throughout the county. Tasks included inventory of existing signs and infrastructure, analysis of needed upgrades, determination of what existing components could be reused, designs overlaid upon aerial photogrammetry, and creation of a spreadsheet for tracking quantities.

Reference:

Orange County
Elia Batista (Project Manager)
PO Box 1393, Orlando, Fl 32802 | Phone: 407-836-5344 | Email: elia.batista@ocfl.net

(2016 – 2019) Traffic Engineering Services for Traffic Studies, City of Jacksonville

Two-Lane School Zones & Flashers Upgrades Design: As a TWO under this contract from April through September in 2019, this project involved designing the signing and pavement marking upgrades of all school zones associated with ten schools throughout the City of Jacksonville. The purpose of the design was to bring the school zones to the current FDOT criteria and establish consistency amongst them. Tasks included performing a detailed inventory of all school zones, determining what upgrades were needed to conform to current FDOT criteria and design of separate plans sets for each school. The final deliverables were ten plans sets for the City of Jacksonville to put out to bid.

Reference:

City of Jacksonville
Christopher W. LeDew, PE (Chief Engineer - Traffic Engineering Division)
1007 Superior Street, Jacksonville, FL 32254 | Phone: 904-255-7533 | Email: CLeDew@coj.net

(2013 – 2018) DW Traffic Operations & Safety Studies Contract, FDOT District 6

SR 916 between NW 8 Ave & NW 10 Ave Flashing Beacon Installation Evaluation: As a TWO under our DW Traffic Operations contract with District 6, the objective of this study was to investigate the feasibility of adding flashing beacons to the existing school zone signs for Northwest Christian Academy (951 NW 136 Street, Miami, FL) along westbound Opa Locka Boulevard and eastbound NW 135 Street, a one-way pair for SR 916.

Recommendations included installation of flashing beacons along Opa Locka Boulevard to enhance motorists' awareness of the school zone speed limit during arrival and dismissal periods; incorporation of a school speed zone along NW 135 Street to reduce the potential conflicts between eastbound vehicles on NW 135 Street and vehicles exiting the school. Installation to be installed in accordance with Assembly D of the detail sheet "Typical School Zone Flashing Beacon & Sign" provided by Miami-Dade County Public Works and Waste Management Department Traffic Engineering Division. Installation of the flashing beacons on Opa Locka Boulevard entailed replacement of the existing assemblies.

Reference:

FDOT District 6
Ramon Sierra, PE (Assistant Traffic Operations Engineer)
1000 DW 111 Ave., Rm. 6206A, Miami, Florida 33172-5800 | Phone: 305-470-5336 | Email: ramon.sierra@dot.state.fl.us

(2013 – 2018) DW Traffic Operations & Safety Studies Contract, FDOT District 6

Signal Warrant Analysis for SR 933/SW 12 Ave at SW 13 Street: As a TWO under our DW Traffic Operations contract with District 6, the objective of this study was to conduct a Signal Warrant Analysis in response to a citizen's request for a traffic signal at the intersection of SR 933/SW 12 Avenue and SW 13 Street; within the school zone for St. Peter and St. Paul Catholic School. Recommendations were to update School Zone Speed assembly on the southbound approach for consistency with other signs; install Playground (W15-1) Signs for northbound traffic just south of SW 14 Street on both sides of SW 12 Avenue and for southbound traffic just south of SW 13 Street, also on both sides of SW 12 Avenue; and remove driveway access delineation pavement markings on SW 12 Avenue in front of the recently opened playground, on the south side of the Little Havana NET Office, across from the school.

The existing pedestrian activated signal for the mid-block School Zone crossing is 380 feet south of the location; therefore, pedestrian activity did not justify installation of marked crosswalks on the uncontrolled approaches of SW 12 Avenue at SW 13 Street. Additionally, per Section 9.3 of the FDOT Speed Zoning for Highways, Roads and Streets in Florida, July 2017 and results of the Spot Speed Study, a posted speed limit of 35 mph may be more appropriate for this location; excluding the posted School Speed Zone times. Therefore, Service Type 10 Speed Zone Study is recommended for this location.

Reference:

FDOT District 6
Ramon Sierra, PE (Assistant Traffic Operations Engineer)
1000 DW 111 Ave., Rm. 6206A, Miami, Florida 33172-5800 | Phone: 305-470-5336 | Email: ramon.sierra@dot.state.fl.us

(2010 – 2015) SR 860/Miami Gardens Dr. at Miami Carol City Senior High School, FDOT District 6

As a TWO under our DW Traffic Operations contract with District 6, the objective of this study was to determine the level of traffic control required for pedestrian safety on Miami Gardens Drive in front of Miami Carol City Senior High School.

Installation of an enhanced crosswalk with supplemental signing on SR 860/Miami Gardens Drive was recommended, supplemented by pedestrian actuated warning beacons; in order to guide pedestrians crossing Miami Gardens Drive within the established school zone. Installation of the crosswalk required modifications to the existing median. Additionally, the existing School Speed Limit assemblies were to be replaced and include a Speed Limit Sign Beacon.

Reference:

FDOT District 6
Ramon Sierra, PE (Assistant Traffic Operations Engineer)
1000 DW 111 Ave., Rm. 6206A, Miami, Florida 33172-5800 | Phone: 305-470-5336 | Email: ramon.sierra@dot.state.fl.us

➲ **Roadway Engineering Improvements**

(2015 – 2019) Continuing Services for Design of Minor Projects with Construction Costs Less Than $2M, Seminole County

TWO-based under this contract are limited by construction costs of $2,000,000 or study costs of $100,000. Services include construction plans preparation, environmental, drainage permitting as well as preliminary and final design phases. Projects include but are not limited to: roadway reconstruction, roadway traffic safety projects, sidewalk and bicycle/pedestrian improvements, intersection improvements, stormwater/water quality improvements, stormwater basin studies, traffic signal designs, traffic studies, preliminary engineering studies, ITS services, peer reviews and any miscellaneous design support services. One example of a project under this contract includes:

- **Brooks Lane Sidewalk Project:** Metric prepared the design for sidewalk construction plans that addressed safety concerns for sidewalk users on Brooks Lane from Gabriella Lane to 1,600-ft. south of Red Bug Lake Road for the west side only. Metric performed a typical section analysis based on design survey to ensure minimum impacts to the existing drainage system within the County's existing right-of-way. The sidewalk and driveway construction was designed for ADA compliancy. Utility coordination was performed for overhead utilities.

In addition to noted example project above, Metric held a second contract which also included the same similar services (final design and plans preparation for minor intersection improvement, drainage improvements, and sidewalk projects throughout Seminole County). Some of those projects included: Willingham Road, Slavia Road, Celery Avenue, Line Drive, and Richmond Avenue. Project work efforts included the preparation of board-mounted plan sheet graphics for and participation in public information meetings.

Reference:

Seminole County
Angela Cardona, PE (Project Manager)
1101 East First Street, Sanford, FL 32771 | Phone: 407-665-5661 | Email: acardona02@seminolecountyfl.gov

(2012 – 2015) Community Traffic Safety Program (CTSP), FDOT District 5

TWO-based Districtwide contract comprised of miscellaneous engineering services required to conduct studies and/or to design and prepare a set of contract plans which may include roadway, signing and pavement markings, signalization, lighting, sidewalk and/or bicycle ways along the transportation corridor that includes State highways, County streets, and City streets. One example of a project under this contract includes:

- **I-4 at Saxton Boulevard**: The project realigned the eastbound off-ramp from I-4 to Saxon Boulevard. A signal was added at the connection of the ramp to Saxon Boulevard. The drainage and lighting was modified to accommodate

the new ramp configuration. Saxon Boulevard was widened to add a third lane between the ramp and Finland Drive. Saxon Boulevard was milled and resurfaced within the limit of the widening to accommodate the new striping. Detour was provided for temporary ramp closure and pedestrian detours were required for sidewalk replacement due to the ramp work and widening. The project provided a safer condition for traffic exiting eastbound I-4 to Saxon Boulevard, as well as traffic on Saxon Boulevard.

Reference:

FDOT District 5
Tony Nosse, PE (FDOT Project Manager)
719 S. Woodland Blvd., DeLand, FL 32720 | Phone: 386-943-5334 | Email: tony.nosse@dot.state.fl.us

➲ **CEI Services**

(2017 – Ongoing) CEI Services for SunTrax Test Facility, Florida's Turnpike Enterprise

This $42M project involves the construction of a 2.25-mile oval track designed to support high speed testing of emerging toll technologies, ITS, and automated/connected vehicles. The track consists of a 5 lane straightaway typical section with paved shoulders and 2 lane super-elevated oval curve typical sections with paved shoulders. ITS elements include more than 38,500 linear feet of fiber optic cable, 12 CCTV cameras, 4 Non-Accessible Toll Gantries with 66-inch drilled shaft foundations and equipment buildings; as well as, an 11,784 square foot SunTrax Test Facility Operations Building and a 9,074 square foot Storage Building. In addition to inspection staff, Metric's ITS Engineer(s) review electrical/power systems for this project on an as-needed basis and perform an extensive ITS plans reviews.

Reference:

Florida's Turnpike Enterprise
Todd Kelly (FTE Construction Project Manager)
(MP 263) Turkey Lake Service Plaza, Building 5315, Ocoee, FL 34761 | Phone: 407-286-8520 | Email: todd.kelly@dot.state.fl.us

(2016 – 2019) CEI Services for ITS Projects, Central Florida Expressway Authority (CFX)

Metric is providing support personnel to perform CEI services on an as-needed, per project basis, for various ITS construction projects in Orange County, Florida. Metric oversees full consultant construction inspection staff, prepare engineering estimates for extra work, processes contractor's invoices for completed work items, conducts progress meetings, documents as-built conditions in final "as-built" plans, interprets contract documents and enforces applicable construction requirements, and reviews construction claims for entitlement. Metric staff is also responsible for the development of CFX's ITS Reference and Training manual which will be utilized to provide training for all of CFX's consultant CEIs. Examples of TWOs:

- CFX HQ Building Security System Upgrades
- Inspection of Wavetronix Cabling Replacement and ITS Liaison and Grounding/Electrical Review
- Single Line DMS Upgrades
- Wrong Way Driving Vehicle Detection and Countermeasures Equipment Installation
- 599-526B Wrong Way Driving Vehicle Detection and Countermeasures Equipment Installation (10 Sites)

Reference:

Central Florida Expressway Authority
Ben Dreiling (Director of Construction)
4974 ORL Tower Road Orlando, FL 32807 | Phone: 407-690-5000 | Email: bdreiling@cfxway.com

(2015 – 2017) CEI Services for I-95 ITS from US 1 to CR 210, FDOT District 2

Metric served as the prime CEI consultant for this project, overseeing the installation of 45 CCTVs, 42 MVDSs, and 11 DMS all of which are tied into the recently installed District 2 fiber optic cable along I-95. The design accounts for the use of round concrete poles for CCTV installations, square poles for MVDS installations and cantilever structures for the DMS locations. The logical network proposed for this deployment includes the use of daisy chain and multiple collapsed ring topologies to provide sufficient bandwidth and limited redundancy for the device deployment. Once all infrastructure is in place and tested, the ITS devices will be integrated into the Department's existing system controlled from the District 2 North Florida RTMC. Metric provides District 2 with Construction Management Services including the following tasks: Management of ITS CEI Contract Assignments, Issue Identification and Resolution, Project Communications, Coordination & Documentation into EDMS/SiteManager, Contract Administration, Permit Monitoring, Public Concerns Coordination and Construction Cost & Schedule Control. *Contractor was SICE, Inc.; Designer: Arcadis*

Reference:

FDOT District 2
Jeffrey Williams, PE (Construction Manager - Palatka Construction)
105 Yelvington Road, East Palatka, FL 32131 | Phone: 386-312-4831 | Email: jeff.williams@dot.state.fl.us

(2015 – 2019) CEI Services for Broward Mobility Design-Build Project, FDOT District 4

CEI services for a $15M D-B Project for construction of sidewalks and bicycle facilities along 48 roadway segments within Broward County. Responsibilities include managing an inspection staff and coordinating all construction activities with the contractor.

Reference:

FDOT District 4
Albert Salas, PE (FDOT Construction Manager)
5548 NW 9th Avenue, Ft. Lauderdale, FL 33309 | Phone: 954-776-4300 | Email: albert.salas@dot.state.fl.us

(2015 – 2017) CEI Services for Krome Avenue North, FDOT District 6

CEI Services for the rehabilitation and upgrading of 5 miles of Krome Ave. in Miami-Dade County. This $26.4 million project includes the construction of a new 4-lane divided section with a 40-foot median and guardrail in select locations. Environmental awareness is addressed with the installations of 6' x 22" wildlife crossings and a water-quality sensitive drainage system with more than 8,400 LF of French drain, almost 9,400 LF of solid pipe, and 190 drainage structures. The project also addresses multi-modal and safety purposes by providing 5-foot paved shoulders for the north- and southbound roadways that will be marked for bicycle use.

Reference:

FDOT District 6
Andres Berisiartu, PE, CGC (Resident Engineer - South Miami Dade & Monroe Residency)
1000 NW 111th Ave Miami, FL 33172 | Phone: 305-640-7433 | Email: andres.berisiartu@dot.state.fl.us

(2015) CEI Services for CSX Bridge Replacement, FDOT District 4

CEI Services for the replacement of the existing SFRC CSX Railroad Rolling Lift Bridge parallel to, and west of SR-9/I-95 over the South Fork of the New River. A new rolling lift bridge was installed approximately 35 feet west of the existing bridge, along with the realignment of the railroad tracks.

Reference:

FDOT District 4
Hewrald Humes, PE (FDOT Construction Manager)
5548 NW 9th Avenue, Ft. Lauderdale, FL 33309 | Phone: 954-776-4300 | Email: hewrald.humes@dot.state.fl.us

Additional Similar Projects

Over the last 15 years, Metric has held more than 90 continuing services contracts throughout the State of Florida for various City, County, and State government clients. Listed below is a sampling of some of the continuing services contracts held by Metric throughout the State of Florida followed by additional projects of note.

Continuing Services / Districtwide / Miscellaneous Contracts

- ✓ Broward County – Continuing Engineering Services for Traffic, Roadway & Civil Engineering Services
- ✓ Broward County – Traffic Signalization Improvement Program
- ✓ Florida International University –Continuing Services Consultant for Civil Engineering
- ✓ Miami Dade County Equitable Distribution Program Continuous Professional Services Agreements (EDP-PSA-2017)
- ✓ Marion County – Continuing Services for Traffic Analysis & Design Contract
- ✓ Orange County – Continuing Professional Civil Engineering and Design Services Contract
- ✓ Orange County – Continuing Professional Traffic Engineering Services
- ✓ Osceola County – Continuing Traffic Engineering Services on a Task Authorization Basis
- ✓ Osceola County - Continuing Engineering Services on a Task Authorization Basis (Two Consecutive Contracts)
- ✓ Osceola County - Continuing Transportation & Planning Services Contract
- ✓ Osceola County – ITS Network Administration, Maintenance, and Repairs
- ✓ Pinellas County – Traffic Engineering consultant services for ATMS / ITS
- ✓ City of Orlando – Continuing Transportation Engineering & Planning Services (Three Consecutive Contracts)
- ✓ City of Orlando – Continuing Transportation Engineering & Planning Services (sub to KAI)
- ✓ City of Jacksonville – Traffic Engineering Services for Traffic Studies
- ✓ City of Miami – Miscellaneous Civil Engineering Services, Professional Services Agreement
- ✓ City of Panama City – Continuing Services for Roadway, Traffic and CEI Services
- ✓ City of Weston – Continuing Professional Services, Environmental Engineering and Wetland Management
- ✓ MetroPlan Orlando – Traffic Signal Retiming (sub to HDR)
- ✓ MetroPlan Orlando – Traffic Signal Retiming
- ✓ Seminole County - Design of Minor Projects with Construction Costs Less Than $2M (Two Contracts)
- ✓ Seminole County - Engineering Services for Minor Roadway & MSBU Design Projects (Two Contracts)
- ✓ Volusia County - Professional Consulting Services for Traffic Engineering and Transportation Services
- ✓ Brevard County – Professional Engineering Services
- ✓ Central Florida Expressway Authority - CEI Services for ITS Projects
- ✓ Central Florida Expressway Authority – Systemwide CEI Services (Three Contracts as a sub)
- ✓ Central Florida Expressway Authority – General Systems Consulting Services (sub to HNTB)
- ✓ Tampa-Hillsborough Expressway Authority – ITS Network Support Services
- ✓ Orange County Sheriff's Office – General IT & Maintenance Consultant Services
- ✓ FDOT District 1 – Districtwide Traffic Operations ITS Consultant (Three consecutive terms)
- ✓ FDOT District 1 – Traffic Operations Minor Design Consultant
- ✓ FDOT District 1 – Pre-Event Natural Disaster & CEI Services
- ✓ FDOT District 2 – Consultant Services for TMC Area-Wide (Four Consecutive Contracts as Prime/Sub)
- ✓ FDOT District 2 – District Wide Traffic Signal Retiming and Warrant Analysis Studies
- ✓ FDOT District 2 – Districtwide Miscellaneous Safety Design
- ✓ FDOT District 2 – Miscellaneous Roadway Characteristics Inventory (Two Consecutive Contracts)
- ✓ FDOT District 2 – Road Safety Audit (RSA) & Safety Studies & Operational Studies Contract
- ✓ FDOT District 2 – Continuing Services Contract for Safety Studies
- ✓ FDOT District 3 – Districtwide Data Development and Mapping
- ✓ FDOT District 3 – Districtwide TSM&O: ITS & ATMS Consultant
- ✓ FDOT District 3 – General Planning Consultant (Four Consecutive Contracts)
- ✓ FDOT District 3 – Miscellaneous Roadway Characteristics Inventory for Maintenance

- ✓ FDOT District 3 – Miscellaneous Roadway Characteristics Inventory for Planning (Three Consecutive Contracts)
- ✓ FDOT District 3 – Traffic Operational Studies/Access Management (sub to HSA)
- ✓ FDOT District 3 – Districtwide Misc. Construction Engineering Inspection Contract
- ✓ FDOT District 3 – Continuing Services CEI Contract
- ✓ FDOT District 5 – Pre-Event Natural Disaster & CEI Services (Two Consecutive Contracts)
- ✓ FDOT District 4 – Districtwide Miscellaneous Design Consultant
- ✓ FDOT District 4 – Continuing Services Contract: Traffic Signal System Retiming & Traffic Engineering Studies
- ✓ FDOT District 4 – Districtwide Traffic Operations Design Services
- ✓ FDOT District 4 – Districtwide TSM&O Support Services
- ✓ FDOT District 5 – ICM: Freeway & Arterial Operations
- ✓ FDOT District 5 – Continuing Services Contract for Traffic operations (Four Consecutive Contracts)
- ✓ FDOT District 5 – District Wide Miscellaneous Design & Construction Inspection (PUSHBUTTON) (Design)
- ✓ FDOT District 5 – Districtwide Community Traffic Safety Program (Three contracts)
- ✓ FDOT District 5 – Districtwide Miscellaneous Design Contracts (Six Contracts)
- ✓ FDOT District 5 – ITS Maintenance Services
- ✓ FDOT District 5 – General Engineering Consultant (GEC) Consultant Services (Two Consecutive Contract as Sub)
- ✓ FDOT District 5 – Districtwide TSM&O Studies and Design (sub to TEDS)
- ✓ FDOT District 5 – Districtwide TSM&O Studies and Design
- ✓ FDOT District 5 – Pre-Event Natural Disaster & CEI Services
- ✓ FDOT District 6 – Districtwide Traffic Operations
- ✓ FDOT District 6 – DW Traffic Operations Design
- ✓ FDOT District 6 – DW Traffic Operations & Safety Studies Consultant Services (Two Consecutive Contracts)
- ✓ FDOT District 6 – DW Traffic Operations Consultant Services
- ✓ FDOT District 6 – DW Traffic Operations Support Services
- ✓ FDOT District 6 – Districtwide Miscellaneous PE Design Consultant
- ✓ FDOT District 6 – FDOT Districtwide Mitigation Consultant
- ✓ FDOT District 6 – DW PD&E Consultant
- ✓ Florida's Turnpike Enterprise – DW ITS Consultant (Two Consecutive Contracts)
- ✓ Florida's Turnpike Enterprise – DW Traffic Engineering/Operations (sub to TEDS)
- ✓ Florida's Turnpike Enterprise – CSC for Express Lanes-Tolling-Architecture (sub to RS&H)
- ✓ Virginia DOT - Statewide ITS General Consulting (Design) Services (sub to HNTB)
- ✓ San Juan Metropolitan Area - ITS Engineering, Design and Procurement Support Services

As you can see, Metric is a trusted partner to our clients - as evidenced by consecutive contract awards - as well as the repeat project history with each client. Our Team is highly motivated to partner with Broward County for another successful contract. We offer "experience you can trust."

EVALUATION CRITERIA

3) Past Performance:

Vendor Reference Verification Forms

Vendor Reference Verification Form

Broward County Solicitation No. and Title:

PNC2119168P1, Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Reference for: Metric Engineering, Inc.

Organization/Firm Name providing reference:

Osceola County

Contact Name: Lindsey Giovinazzo Title: Traffic Management Reference date: 09/09/2019

Contact Email: lindsey.giovinazzo@osceola.org Contact Phone: 407-742-9166

Name of Referenced Project: Continuing Traffic Engineering Services

Contract No.	Date Services Provided:			Project Amount:
PS #17-9180-TP	07/17/2017	to	07/16/2020	$ 519,539.13

Vendor's role in Project: ☑ Prime Vendor ☐ Subconsultant/Subcontractor

Would you use this vendor again? ☑ Yes ☐ No If No, please specify in Additional Comments (below).

Description of services provided by Vendor:

Task authorization (TA), or Task Work Order (TWO), based contract to provide the County miscellaneous traffic engineering services and other related tasks as they arise. Services can fall under one of three "task groups" with various support services. 1) Traffic Data Collection to include 24-hour/48-hour Directional Volume and Turning Movement Counts (TMCs) data collection as well as Travel Time and Delay, Intersection Delay, Queue Analysis, Gap Analysis and Speed Studies. 2) Traffic Operations/Traffic Impact Studies to include: Traffic Calming Studies, Traffic Signal Warrant Analyses, Speed Limit Studies, Traffic Signal System Timing Evaluation & Design, Roundabout Analysis, Access Management Analyses, and Roadway Lighting Justification Analyses. 3) Traffic Engineering/ITS: Design, Plans Preparation and Design/Plan Review Support to include: Minor Intersection Design, Lighting Design, ITS Design (DMS, CCTV, etc.), Communication Network Design, and Traffic Management Center (TMC) Support. Amount shown is Paid-To-Date.

Please rate your experience with the referenced Vendor:	**Needs Improvement**	**Satisfactory**	**Excellent**	**Not Applicable**
1. Vendor's Quality of Service				
a. Responsive	☐	☐	☑	☐
b. Accuracy	☐	☐	☑	☐
c. Deliverables	☐	☐	☑	☐
2. Vendor's Organization:				
a. Staff expertise	☐	☐	☑	☐
b. Professionalism	☐	☐	☑	☐
c. Turnover	☐	☐	☑	☐
3. Timeliness of:				
a. Project	☐	☐	☑	☐
b. Deliverables	☐	☐	☑	☐
4. Project completed within budget	☐	☐	☑	☐
5. Cooperation with:				
a. Your Firm	☐	☐	☑	☐
b. Subcontractor(s)/Subconsultant(s)	☐	☐	☑	☐
c. Regulatory Agency(ies)	☐	☐	☑	☐

Additional Comments: (provide on additional sheet if needed)

Metric Engineering has been a pleasure to work with and I would certainly recommend this firm to anyone looking for a multitude of engineer/professional services.

THIS SECTION FOR COUNTY USE ONLY

Verified via: ____EMAIL ____VERBAL Verified by: _____ Division: _____ Date: _____

All information provided to Broward County is subject to verification. Vendor acknowledges that any deceptive, untruthful, or incorrect statements made in support of this response may be used by the County as a basis for rejection, rescission of the award, or termination of the contract and may also serve as the basis for debarment of Vendor pursuant to Section 21.119 of the Broward County Procurement Code.

Vendor Reference Verification Form

Broward County Solicitation No. and Title:

PNC2119168P1, Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Reference for: Metric Engineering, Inc.

Organization/Firm Name providing reference:

Seminole County

Contact Name: Charles Wetzel, PE, PTOE Title: Traffic Engineer Reference date: 09/09/2019

Contact Email: cwetzel@seminolecountyfl.gov Contact Phone: 407-665-5677

Name of Referenced Project: Continuing Services for Design of Minor Projects with Construction Costs

Contract No.	Date Services Provided:			Project Amount:
PS-0009-15/RTB	07/10/2015	to	07/09/2020	$ 126,929.74

Vendor's role in Project: ☑ Prime Vendor ☐ Subconsultant/Subcontractor

Would you use this vendor again? ☑ Yes ☐ No If No, please specify in Additional Comments (below).

Description of services provided by Vendor:

Task work orders under this contract are limited by construction costs of $2,000,000 or study costs of $100,000. Services include construction plans preparation, environmental, drainage permitting as well as preliminary and final design phases. Projects include but are not limited to: roadway reconstruction, roadway traffic safety projects, sidewalk and bicycle/pedestrian improvements, intersection improvements, stormwater/water quality improvements, stormwater basin studies, traffic signal designs, traffic studies, preliminary engineering studies, ITS services, peer reviews and any miscellaneous design support services.

Please rate your experience with the referenced Vendor:	**Needs Improvement**	**Satisfactory**	**Excellent**	**Not Applicable**
1. Vendor's Quality of Service				
a. Responsive	☐	☐	☑	☐
b. Accuracy	☐	☐	☑	☐
c. Deliverables	☐	☐	☑	☐
2. Vendor's Organization:				
a. Staff expertise	☐	☐	☑	☐
b. Professionalism	☐	☐	☑	☐
c. Turnover	☐	☐	☑	☐
3. Timeliness of:				
a. Project	☐	☐	☑	☐
b. Deliverables	☐	☐	☑	☐
4. Project completed within budget	☐	☐	☑	☐
5. Cooperation with:				
a. Your Firm	☐	☐	☑	☐
b. Subcontractor(s)/Subconsultant(s)	☐	☐	☑	☐
c. Regulatory Agency(ies)	☐	☐	☑	☐

Additional Comments: (provide on additional sheet if needed)

THIS SECTION FOR COUNTY USE ONLY

Verified via: ____EMAIL ____VERBAL Verified by: _____ Division: _____ Date: _____

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BROWARD COUNTY FLORIDA

Vendor Reference Verification Form

Broward County Solicitation No. and Title:

PNC2119168P1, Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Reference for: Metric Engineering, Inc.

Organization/Firm Name providing reference:

City of Orlando

Contact Name: Jeremy Crowe, PE, PTOE Title: Project Manager II Reference date: 09/09/2019

Contact Email: jeremy.crowe@cityoforlando.net Contact Phone: 407-246-3262

Name of Referenced Project: Continuing Transportation Engineering & Planning Services

Contract No.	Date Services Provided:			Project Amount:
RQS18-0265-5	08/27/2018	to	08/26/2020	$ 142,878.83

Vendor's role in Project: ☑ Prime Vendor ☐ Subconsultant/Subcontractor

Would you use this vendor again? ☑ Yes ☐ No If No, please specify in Additional Comments (below).

Description of services provided by Vendor:

Metric was selected to perform professional services for the City of Orlando in all phases of projects as assigned through task work orders (TWOs). Services include transportation engineering and planning services including civil, architectural, structural, mechanical, environmental, transportation, stormwater, irrigation, landscaping, and electrical engineering services as needed dependent on the project assigned. Potential work as advertised: transportation planning; traffic studies, analysis, and designs; civil preliminary and final designs including plans preparation; and more. Project Amount is paid-to-date. Metric has held this contract for three consecutive terms, both as prime and a subconsultant.

Please rate your experience with the referenced Vendor:	Needs Improvement	Satisfactory	Excellent	Not Applicable
1. Vendor's Quality of Service				
a. Responsive	☐	☐	☑	☐
b. Accuracy	☐	☐	☑	☐
c. Deliverables	☐	☐	☑	☐
2. Vendor's Organization:				
a. Staff expertise	☐	☐	☑	☐
b. Professionalism	☐	☐	☑	☐
c. Turnover	☐	☐	☑	☐
3. Timeliness of:				
a. Project	☐	☐	☑	☐
b. Deliverables	☐	☐	☑	☐
4. Project completed within budget	☐	☐	☑	☐
5. Cooperation with:				
a. Your Firm	☐	☐	☑	☐
b. Subcontractor(s)/Subconsultant(s)	☐	☐	☐	☑
c. Regulatory Agency(ies)	☐	☐	☐	☑

Additional Comments: (provide on additional sheet if needed)

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Vendor Reference Verification Form

Broward County Solicitation No. and Title:

PNC2119168P1, Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Reference for: Metric Engineering, Inc.

Organization/Firm Name providing reference:

Florida Department of Transportation, District 1

Contact Name: Katherine Chinault Title: Project Manager Reference date:

Contact Email: katherine.chinault@dot.state.fl.us Contact Phone: 863-519-2726

Name of Referenced Project: D1 Districtwide ITS Consultant

Contract No.	Date Services Provided:		Project Amount:
C9S72	01/06/2017	to 01/05/2022	$ 5,000,000.00

Vendor's role in Project: ☑ Prime Vendor ☐ Subconsultant/Subcontractor

Would you use this vendor again? ☐ Yes ☐ No If No, please specify in Additional Comments (below).

Description of services provided by Vendor:

This project includes a range of study, planning, design, integration, diagnostic, operations, management, review, evaluation and engineering services; including technical and administrative tasks for Intelligent Transportation System projects for District 1. Metric supports all facets of the Traffic Operations Office ITS Program, including ITS planning, ITS architecture, ITS design, ITS integration, ITS diagnostics and ITS Operations, including facilitating the Traffic Incident Management (TIM) Team activities and TIM initiatives. Metric has held this contract for three consecutive terms since 2009.

Please rate your experience with the referenced Vendor:	**Needs Improvement**	**Satisfactory**	**Excellent**	**Not Applicable**
1. Vendor's Quality of Service				
a. Responsive	☐	☐	☐	☐
b. Accuracy	☐	☐	☐	☐
c. Deliverables	☐	☐	☐	☐
2. Vendor's Organization:				
a. Staff expertise	☐	☐	☐	☐
b. Professionalism	☐	☐	☐	☐
c. Turnover	☐	☐	☐	☐
3. Timeliness of:				
a. Project	☐	☐	☐	☐
b. Deliverables	☐	☐	☐	☐
4. Project completed within budget	☐	☐	☐	☐
5. Cooperation with:				
a. Your Firm	☐	☐	☐	☐
b. Subcontractor(s)/Subconsultant(s)	☐	☐	☐	☐
c. Regulatory Agency(ies)	☐	☐	☐	☐

Please note that FDOT is unable to provide references for consultants. Thus, in lieu of the bottom portion of the vendor reference form, we have included the project's official FDOT grades (per the County's instructions). Additionally, the FDOT reference listed is open to receiving a call from the County for any specific information pertaining to Metric's performance on this contract.

Additional Comments: (provide on additional sheet if needed)

THIS SECTION FOR COUNTY USE ONLY

Verified via: ____EMAIL ____VERBAL Verified by: _____ Division: _____ Date: _____

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Grades from FDOT District 1 for DW Traffic Operations ITS Consultant contracts

Detailed Listing of Consultant Evaluations

(METRIC ENGINEERING INC.)

Graded On or Since September 9, 2014

C8U91 = DW Traffic Operations ITS Consultant (2009 - 2016) **DOT DISTRICT: 1 - Bartow**

Contract Number: C8U91 **Date of Execution:** 31JUL2009 **Notice to Proceed:** 31JUL2009 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
6.3.1	04JAN2016	4.0	3.8	3.8	.	.
6.3.2	04JAN2016	3.7	3.8	3.8	.	.
6.3.3	04JAN2016	4.0	3.8	3.8	.	.
6.3.4	04JAN2016	4.0	3.8	3.8	.	.
6.3.1	19JUN2015	3.5	3.6	3.6	.	.
6.3.2	19JUN2015	3.5	3.6	3.6	.	.
6.3.3	19JUN2015	4.0	3.6	3.6	.	.
6.3.4	19JUN2015	3.5	3.6	3.6	.	.

Contract Number: C8Y82 **Date of Execution:** 28JUL2010 **Notice to Proceed:** 28JUL2010 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
				3.4	5.0	07FEB2014

C9A34 = DW Traffic Operations ITS Consultant (2013 - 2020)

Contract Number: C9A34 **Date of Execution:** 17APR2013 **Notice to Proceed:** 17APR2013 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
6.3.1	09APR2015	3.5	3.6	3.6	.	.
6.3.2	09APR2015	3.5	3.6	3.6	.	.

6.3.3	09APR2015	3.5	3.6	3.6	.	.
6.3.4	09APR2015	3.5	3.6	3.6	.	.
6.3.1	02SEP2016	3.3	3.6	3.5	.	.
6.3.2	02SEP2016	3.3	3.6	3.5	.	.
6.3.3	02SEP2016	3.3	3.6	3.5	.	.
6.3.4	02SEP2016	3.3	3.6	3.5	.	.
6.3.1	06APR2017	3.0	3.2	3.6	.	.
6.3.2	06APR2017	3.3	3.2	3.6	.	.
6.3.3	06APR2017	3.3	3.2	3.6	.	.
6.3.4	06APR2017	3.3	3.2	3.6	.	.
6.3.1	25JAN2019	3.0	3.2	3.7	.	.
6.3.2	25JAN2019	3.3	3.2	3.7	.	.
6.3.3	25JAN2019	3.3	3.2	3.7	.	.

Contract Number: C9J92 **Date of Execution:** 28MAY2015 **Notice to Proceed:** 29MAY2015 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
10.1	04MAR2019	4.7	4.7	4.7	.	.
10.1	04APR2016	3.5	3.5	3.5	.	.
10.1	04APR2016	3.6	3.6	3.6	.	.
10.1	21JUN2016	3.9	3.9	3.9	.	.
10.1	03OCT2016	4.1	4.1	4.1	.	.
10.1	18JAN2017	4.3	4.3	4.3	.	.
10.1	18JAN2017	4.4	4.4	4.4	.	.
10.1	30MAR2017	4.3	4.3	4.3	.	.
10.1	29JUN2017	4.4	4.4	4.4	.	.
10.1	05OCT2017	4.4	4.4	4.4	.	.
10.1	21DEC2017	4.3	4.3	4.3	.	.
10.1	30MAR2018	4.3	4.3	4.3	.	.

Contract Number: C9Q06 **Date of Execution:** 27JUL2016 **Notice to Proceed:** 27JUL2016 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date

10.1	31MAR2017	3.5	3.5	3.5	.	.
10.1	31MAR2017	3.5	3.5	3.5	.	.
10.1	31MAR2017	3.5	3.5	3.5	.	.
10.1	26DEC2018	3.6	3.6	3.6	.	.

C9S72 = DW Traffic Operations ITS Consultant (2017 - 2027)

. .

Contract Number: C9S72 **Date of Execution:** 31JAN2017 **Notice to Proceed:** 31JAN2017 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
6.3.1	18JAN2018	3.0	3.2	3.4	.	.
6.3.2	18JAN2018	3.0	3.2	3.4	.	.
6.3.3	18JAN2018	3.0	3.2	3.4	.	.
6.3.1	31JAN2019	3.0	3.6	3.5	.	.
6.3.2	31JAN2019	3.3	3.6	3.5	.	.
6.3.3	31JAN2019	3.3	3.6	3.5	.	.

Contract Number: C9V65 **Date of Execution:** 25JUL2017 **Notice to Proceed:** 25JUL2017 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
10.1	08APR2019	4.4	4.4	4.4	.	.
10.1	30MAR2018	3.2	3.2	3.2	.	.
10.1	28JUN2018	3.4	3.4	3.4	.	.
10.1	28SEP2018	3.6	3.6	3.6	.	.

Contract Number: C9Z68 **Date of Execution:** 21MAY2018 **Notice to Proceed:** 21MAY2018 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
10.1	02JAN2019	3.2	3.2	3.2	.	.
10.1	09APR2019	3.5	3.5	3.5	.	.
10.1	27JUN2019	3.7	3.7	3.7	.	.

Contract Number: C9045 **Date of Execution:** 27DEC2010 **Notice to Proceed:** 27DEC2010 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
10.1	15AUG2018	3.4	3.4	3.4	.	.
10.1	29OCT2014	3.0	3.0	3.0	.	.
10.1	12JAN2015	3.0	3.0	3.0	.	.
10.1	03APR2015	3.6	3.6	3.6	.	.
10.1	24JUL2015	3.8	3.8	3.8	.	.
10.1	19OCT2015	4.0	4.0	4.0	.	.
10.1	28DEC2015	3.4	3.4	3.4	.	.
10.1	05MAY2016	3.5	3.5	3.5	.	.
10.1	26JUL2016	3.5	3.5	3.5	.	.
10.1	24OCT2016	3.5	3.5	3.5	.	.
10.1	19JAN2017	3.5	3.5	3.5	.	.
10.1	19JAN2017	3.4	3.4	3.4	.	.
10.1	19JAN2017	3.5	3.5	3.5	.	.
10.1	18JUL2017	3.5	3.5	3.5	.	.
10.1	03OCT2017	3.4	3.4	3.4	.	.
10.1	21MAY2018	3.4	3.4	3.4	.	.

Contract Number: C9149 **Date of Execution:** 12APR2011 **Notice to Proceed:** 12APR2011 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
10.1	05MAY2016	3.0	3.0	3.0	.	.
10.1	29OCT2014	3.0	3.0	3.0	.	.
10.1	12JAN2015	3.0	3.0	3.0	.	.
10.1	06APR2015	3.0	3.0	3.0	.	.
10.1	24JUL2015	3.0	3.0	3.0	.	.
10.1	19OCT2015	3.0	3.0	3.0	.	.
10.1	05JAN2016	3.0	3.0	3.0	.	.

Contract Number: C9316 **Date of Execution:** 15AUG2011 **Notice to Proceed:** 15AUG2011 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
11.0	07NOV2016	3.6	3.8	3.5	.	.
10.1	08JAN2015	3.0	3.0	3.0	.	.
10.1	02APR2015	3.0	3.0	3.0	.	.

Contract Number: C9509 **Date of Execution:** 08FEB2012 **Notice to Proceed:** 08FEB2012 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
10.1	20OCT2015	4.2	4.2	4.2	.	.
10.1	13OCT2014	3.6	3.6	3.6	.	.
10.1	28JAN2015	3.8	3.8	3.8	.	.
10.1	29APR2015	3.9	3.9	3.9	.	.

Contract Number: X0282 **Date of Execution:** 10JUN2014 **Notice to Proceed:** 11JUN2014 **Consultant:** METRIC ENGINEERING INC.

Type of Work	Date Grade Assigned	Quality Grade	Schedule Grade	Management Grade	Constructability Grade	Const. Grade Date
10.1	19JAN2017	3.5	3.5	3.5	.	.
10.1	19JAN2017	3.6	3.6	3.6	.	.
10.1	15MAY2017	3.5	3.5	3.5	.	.
10.1	24JUL2017	3.5	3.5	3.5	.	.
10.1	31JUL2018	3.0	3.0	3.0	.	.
10.1	11OCT2018	3.0	3.0	3.0	.	.
10.1	09JAN2019	3.0	3.0	3.0	.	.
10.1	03APR2019	3.0	3.0	3.0	.	.
10.1	11JUL2019	3.0	3.0	3.0	.	.

Vendor Reference Verification Form

Broward County Solicitation No. and Title:

PNC2119168P1, Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Reference for: Metric Engineering, Inc.

Organization/Firm Name providing reference:

Florida Department of Transportation, District 5

Contact Name: Zachary Zalneraitis, PE Title: Traffic Studies Engr Reference date:

Contact Email: zachary.zalneraitis@dot.state.fl.us Contact Phone: 386-943-5330

Name of Referenced Project: D5 CSC for Traffic Operations

Contract No.	Date Services Provided:		Project Amount:
C9R23	01/06/2017	to 01/05/2022	$ 4,466,000.00

Vendor's role in Project: ☑ Prime Vendor ☐ Subconsultant/Subcontractor

Would you use this vendor again? ☐ Yes ☐ No If No, please specify in Additional Comments (below).

Description of services provided by Vendor:

Professional transportation, planning, and engineering services for assigned traffic operational/safety studies and plan preparation at hundreds of locations throughout Central Florida. The traffic analysis and conceptual recommendations produced are then used in the development of construction plans, incorporated into traffic operational/safety improvement projects or in the case of traffic signal timing plans, implemented directly into the field. Typical tasks included ITS Design and Integration, Arterial Retiming, Signal Warrant Analysis, Intersection Analysis, Roadway Study, Composite Study, Signal Inspections, Design Survey, Signal and Roadway Plans Design, Subsurface Utility Locating, and Traffic Volume and Classification Counts. We have had four consecutive five-year contracts since 2001.

Please rate your experience with the referenced Vendor:	**Needs Improvement**	**Satisfactory**	**Excellent**	**Not Applicable**
1. Vendor's Quality of Service				
a. Responsive	☐	☐	☐	☐
b. Accuracy	☐	☐	☐	☐
c. Deliverables	☐	☐	☐	☐
2. Vendor's Organization:				
a. Staff expertise	☐	☐	☐	☐
b. Professionalism	☐	☐	☐	☐
c. Turnover	☐	☐	☐	☐
3. Timeliness of:				
a. Project	☐	☐	☐	☐
b. Deliverables	☐	☐	☐	☐
4. Project completed within budget	☐	☐	☐	☐
5. Cooperation with:				
a. Your Firm	☐	☐	☐	☐
b. Subcontractor(s)/Subconsultant(s)	☐	☐	☐	☐
c. Regulatory Agency(ies)	☐	☐	☐	☐

Please note that FDOT is unable to provide references for consultants. Thus, in lieu of the bottom portion of the vendor reference form, we have included the project's official FDOT grades (per the County's instructions). Additionally, the FDOT reference listed is open to receiving a call from the County for any specific information pertaining to Metric's performance on this contract.

Additional Comments: (provide on additional sheet if needed)

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Verified via: ____EMAIL ____VERBAL Verified by: _____ Division: _____ Date: _____

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

Contract Number: **C9R23**

Eval Status: **Approved**

CONSULTANT QUALITY EVALUATION - TYPE OF WORK GROUP 6

Contract Number:	C9R23	**Project Title:**	CSC Traffic Ops
Prime Consultant Business Name:	METRIC ENGINEERING INC.	**Sub Consultant:**	
Consultant Project Manager First Name:	Dale	**Consultant Project Manager Last Name:**	Cody
Work Type Number:	6.1	**Work Type Description:**	Traffic Engineering Studies
FDOT Project Manager:	Mark Herring	**FDOT Project Manager Phone Number:**	3869435165

Task Work Order Entry:

FM Number List:

Enter Additional Identifying Information for Evaluation:

Construction Contract Number (CCN) and Project Manager (CPM)

CCN	CPM Name	CPM Phone

FDOT Design Project Manager:

Name

Phone

TOTAL SCORE FOR QUALITY CRITERIA: 3.3

FDOT Evaluator:	Mark Herring	**Date:**	10/30/2018
FDOT Reviewer 1:	Michael Sanders	**Date:**	01/18/2019

FDOT Evaluator General Comments:

QUALITY EVALUATION CRITERIA

Performance Rating Scale (1-5)

INSTRUCTIONS:

For each numbered item below, please select a score from 1 to 5 in accordance with the performance rating scale. Do not score a criteria item if the criteria item is not applicable to the evaluation. Comments must be entered for ratings of 1 or 5.

Quality Criteria for Traffic Engineering and Operations Studies	Average Score	3.3
	Rating Scale:	1 - 5
1. Completeness of traffic, roadway, signal, and crash data either performed by or obtained by the consultant for the project.		3
2. Ability to use the Department approved study techniques and traffic engineering computer programs to their fullest.		3
3. Ability to comprehend the collected data and analyze it into a comprehensive conclusion		3
4. Completeness of design computations/documentations and the ability to follow through to deliver a final functioning system		4

FDOT Evaluator Section Comments:

Metric completes quality work and follows appropriate department procedures

Interim or Final Evaluation? Interim

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION Contract Number: **C9R23**

CONSULTANT SCHEDULE AND MANAGEMENT EVALUATION

Eval Status: **Approved**

Contract Number:	C9R23	**Project Title:**	CSC Traffic Ops
Prime Consultant Business Name:	METRIC ENGINEERING INC.	**Sub Consultant:**	
Consultant Project Manager First Name:	Dale	**Consultant Project Manager Last Name:**	Cody
FDOT Project Manager:	Mark Herring	**FDOT Project Manager Phone Number:**	3869435165

Task Work Order Entry:

FM Number List:

Enter Additional Identifying Information for Evaluation:

Submitted Schedule and Management evaluations must be Bundled with one or more Prime Consultant Quality evaluations.

SCHEDULE EVALUATION CRITERIA	3.0
MANAGEMENT EVALUATION CRITERIA	3.2

FDOT Evaluator:	Mark Herring	**Date:**	01/18/2019
FDOT Reviewer 1:	Michael Sanders	**Date:**	01/18/2019

FDOT Evaluator General Comments:

SCHEDULE EVALUATION CRITERIA

Performance Rating Scale (1-5)

INSTRUCTIONS:

For each numbered item below, please select a numerical score from 1 to 5 in accordance with the performance rating scale. Do not provide a rating for criteria that do not apply to this evaluation. Comments must be entered for ratings of 1 or 5.

A. Project Phase Submittals (40%)	Average Score	3.0
	Rating Scale:	1 - 5
Project Phase Submittals		3

FDOT Evaluator Section Comments:

Consistently meets project due dates.

B. Project Milestones (20%)	Average Score	3.0
	Rating Scale:	1 - 5
Project Milestones		3

FDOT Evaluator Section Comments:

C. Status Reports/Schedule Updates (20%)	Average Score	3.0
	Rating Scale:	1 - 5

Status Reports/Schedule Updates 3

FDOT Evaluator Section Comments:

D. Other Project Deliverables (20%)	Average Score	3.0
	Rating Scale:	1 - 5

Other Project Deliverables 3

FDOT Evaluator Section Comments:

MANAGEMENT EVALUATION CRITERIA

Performance Rating Scale (1-5)

INSTRUCTIONS:

For each numbered item below, please select a numerical score from 1 to 5 in accordance with the performance rating scale. Do not provide a rating for criteria that do not apply to this evaluation. Comments must be entered for ratings of 1 or 5.

A. Administration of Contract (weight = 20%)	Average Score	3.5
	Rating Scale:	1 - 5
1. Effectively and proactively controlled the Contract.		4
2. Administered the Contract in an organized manner and was proficient in applying administrative, procedural and technical skills to Contract.		3
3. Effectively coordinated with Department personnel to ensure effective Contract management, with required submittals made timely, in the subscribed format, with no material errors.		4
4. Submitted properly documented invoices; sub-consultants paid promptly; contract funds were tracked and reported as requested to avoid rush amendments, out-of-fund conditions or supplemental agreements.		3
5. Complied with established DBE/MBE commitment.		3
6. FOR TASK DRIVEN CONTRACTS ONLY: Responded to the Department in a timely manner regarding tasks requests. For accepted tasks, promptly developed an understanding of the assignment, prepared and submitted an accurate time/fee package, and efficiently initiated the assignment.		4

FDOT Evaluator Section Comments:

Metric maintains accurate and timely records of funds and task work orders, and promptly responds to requests for fee estimates on special tasks

B. Management of Issues and Resources (weight = 25%)	Average Score	3.0

Rating Scale: 1 - 5

1. Effectively resolved issues; made decisions based on solid logic and sufficient supporting detail.	3
2. Properly supervised staff and coordinated the effort of sub-consultants.	3
3. Effectively minimized the unnecessary involvement of Department staff.	3
4. Effectively managed resources. Continuously provided experienced staff as proposed; was responsive to Department staffing requests; if personnel changes occurred, the credentials of replacement staff were equal to or exceeded the qualifications of the original staff approved, and Department approval was received.	3
5. FOR PROJECTS INVOLVING PERMITS: Sufficiently identified, analyzed and verified that all permit conditions were addressed. Thoroughly documented and proactively worked to resolve permitting issues in a timely manner.	
6. FOR PROJECTS INVOLVING UTILITIES: Sufficiently verified that utilities were coordinated properly and shown in the plans/schedules including providing a summary of changes at subsequent phase submittals. ADDITIONALLY, FOR PROJECTS INVOLVING CONSULTANT UTILITY COORDINATION: succeeded in getting the utility agencies to accept the schedule, and consistently tracked and communicated with the utility companies so they comply with the schedules. Took appropriate action when schedules were not met.	

FDOT Evaluator Section Comments:

C. Communication, Documentation and Coordination (weight = 25%)	Average Score	3.0
	Rating Scale:	1 - 5
1. Provided the necessary project information to the Department and all project stakeholders in a timely manner.		3
2. Scheduled, conducted and documented meetings in a timely manner.		
3. Immediately notified the Department of issues impacting schedule and costs; acted proactively by working with various stakeholders to minimize impacts; and resolved issues in a timely manner.		3
4. Prepared thoroughly organized and completed project documentation including a clear filing system, and clear documentation of oral communications.		
5. Effectively tracked and monitored comment resolution and other action items to ensure timely resolution.		3
6. Properly and efficiently logged, documented, tracked and took appropriate action on all public initiated inquiries from first contact through disposition or resolution. Coordinated effectively with the District Public Information Office, providing relevant data as requested for newsletters, media releases, public meetings, etc.		

FDOT Evaluator Section Comments:

D. Execution of Work (Schedule, budget, quality control, scope of work) (weight = 30%)	Average Score	3.2
	Rating Scale:	1 - 5
1. Ensured project schedule submittals was submitted and reviewed in accordance with the Contract.		3
2. Reviewed the schedule monthly or as appropriate with the Department. Took appropriate action to reallocate resources if the work items fell behind schedule in accordance with the critical path to minimize impact to the overall schedule.		3
3. Effectively managed the budget and if applicable, was reasonable regarding claims for and negotiations of supplemental agreements.		3
4. Developed a logical quality control plan, and adhered to the plan throughout the project.		3
5. Successfully met the scope and objectives of the project.		4

FDOT Evaluator Section Comments:

Metric consistently delivers quality products & services within the scope of work.

Interim or Final Evaluation? Interim

EVALUATION CRITERIA

4) Workload of Firm

(4) WORKLOAD OF FIRM

PROJECT NAME	CLIENT NAME
PD&E Services for SR 29 f/ I-75 to Oil Well Rd	FDOT District 1
Districtwide ITS Consultant	FDOT District 1
Central Lakeland Transit Signal Priority Study	FDOT District 1
Misc Safety Design - Minor Highway Design	FDOT District 2
RTMC Operations Contract	FDOT District 2
Engineering In-House Support (TMC Support)	FDOT District 2
ITS CEI Services for I-95 ITS Communication Devices, DMS, CCTV and Vehicle Detectors Deployment	FDOT District 2
DW ITS & ATMS Traffic Svcs Consultant	FDOT District 3
DW Minor Project Design Consultant	FDOT District 4
PD&E SERVICES FOR CR 510 from CR 512 to 58th Ave.	FDOT District 4
CR 510 / 85th Street Design Services	FDOT District 4
I-75 (SR 93) - NW 49th St f/ end of NW 49th St to end of NW 35th St	FDOT District 5
SR 500 fr Lake Ella Rd. to Avenida Central	FDOT District 5
Continuing Traffic Engineering Services	FDOT District 5
DW Community Traffic Safety Program	FDOT District 5
Daytona Beach Event Management Ph. 1	FDOT District 5
I-75 FL Regional Advanced Mobility Elements	FDOT District 5
TSM&O Studies & Design Svcs	FDOT District 5
SR 5/US 1 @ Canal Street Design	FDOT District 5
I-75 (SR 93) N. of US 27 to Alachua County Line	FDOT District 5
ITS Master Plan	FDOT District 5
CSC for Integrated Corridor Management - Freeway/Arterial Operations	FDOT District 5
General Engineering Consultant Services - ITS Planning/PM Support and ITS In-House Support	FDOT District 5
I-4 Ultimate ITS Review Services	FDOT District 5
SR-5 / US-1 / South Dixie Highway fr E. of Riviera Dr. to W. of SW 27th Ave.	FDOT District 6
DW Traffic Operations/Safety Studies	FDOT District 6
PD&E Consultant	FDOT District 6
Okeechobee Rd. PD&E	FDOT District 6
I-395 / SR 836 / I-95 Reconstruction Design-Build	FDOT District 6
I-75 ITS Freeway Management System (FMS) from Hillsborough/Manatee County Line to South of Big Bend Road Design-Build	FDOT District 7
Resurface Mainline and Roadside Improvements for Turnpike's Mainline Mile Post (MP) 259.9 to MP 265.3	Florida's Turnpike Enterprise
ITS Consulting Services District Wide	Florida's Turnpike Enterprise
PD&E Studies for Widen Sawgrass Expressway (SR 869) from south of Sunrise Boulevard to south of US 441 (SR 7) in Broward County	Florida's Turnpike Enterprise
Mainline Express Lanes I-4 Direct Connect	Florida's Turnpike Enterprise
All Electronic Tolling (AET) Phase 8 – Ticket System	Florida's Turnpike Enterprise
Arborist Svcs - Vegetation Mgmt	Central Office

Lake / Orange Connector (US 27 to SR 429) Feasibility / PD&E	Central Florida Expressway Authority
SR 408 PD&E Study	Central Florida Expressway Authority
Miscellaneous CEI contract	Central Florida Expressway Authority
ITS Network Consulting Services	Tampa-Hillsborough County Expressway Authority
Broward County Continuing Engineering Services for Traffic, Roadway, and Civil Engineering Services	Broward County
Broward County Traffic Signalization (SEI)	Broward County
Environmental Support for Davie Road	Broward County
Continuing Professional Engineering Services	Orange County
Continuing Traffic Engineering Services	Osceola County
LAP Funded SRTS Sidewalk Project	Osceola County
Travel Time & Delay Studies	Seminole County
New Oxford Road Improvements	Seminole County
Professional Engineering Services Contract	Brevard County
Pigeon Key Ramp Rehabilitation Project	Monroe County
Key Largo Hammock Restoration	Monroe County
US 1 / SR 5 Ray Road	St. Johns County
Engineering Design Services for Orange Camp Road Widening	Volusia County
EDP Continuing Prof Services	Miami-Dade County
Cont Professional Services for ITS/ATMS	Pinellas County
Miami Beach Active Arterial Management	City of Miami
Miscellaneous Civil Engineering Services	City of Miami
Landscape Arborist Consultant Services	City of Dania Beach
Weston Environmental Engineering and Wetland Mgmt.	City of Weston
Traffic Engineering Services Contract	City of Jacksonville
Transportation Engineering & Planning Services	City of Orlando
Continuing Consultant Engineering Svcs	City of Palm Bay
A1A PD&E Study	City of Deerfield Beach
Continuing Engineering Services	City of Marathon
Enviro/ Planning In-House Supp Svcs	Islamorada Village of Islands
Miscellaneous Design	Florida International University
ITS Engineering, Design and Procurement Support Services, San Juan Metropolitan Area	Puerto Rico Highways and Transportation Authority
ITS Master Plan	Lake Sumter Metropolitan Planning Organization
ITS Master Plan	Space Coast Transportation Planning Organization
Traffic Signal Retiming	MetroPlan Orlando
General IT & Maintenance Consultant Svcs	Orange County Sheriff's Office

Workload in Detail

Concurrent Projects

We understand that the objective of this contract is to issue task work orders (TWO) that may cover a wide range of services depending on the County's needs. Historically, there may be several tasks being issued simultaneously for similar or completely different services. For this reason, our Team provides an excellent combination of flexibility, technical expertise, availability of large pool of experienced engineering professionals, and previous successful relevant experience.

To this extent, Metric has actually worked on dozens of these projects concurrently. We have managed as many as 25 work-order based projects statewide through our design, traffic operations & ITS, CEI and planning service lines! This is made possible due to our 375+ Florida-based employees! The majorities of these contracts utilize multiple service lines (much like this project) and therefore have allowed us to combine the expertise of numerous staff members from multiple offices to produce the most comprehensive engineering solutions, unique to each project.

Management Approach of these projects

For the successful completion of this project, Metric's approach consists of providing the County the highest level of service and technical expertise. We believe that the success of any project is highly influenced by the Team's ability to be PROACTIVE throughout all phases of the project. Our understanding of the scope and familiarity with all of the required design and construction management elements as well as the agencies involved, will give us the ability to provide the highest quality product to the County.

Our Team approach will begin with a clear definition of responsibilities for each TWO among all the involved Team members. Tasks will be distributed based on the nature and technical complexity of each task as well as the availability of the Team members. During the life of each TWO, we will hold Technical Coordination meetings on a weekly basis to ensure proper coordination of technical issues, scope items, and submittal dates. Mr. Cody, as well as all of the Discipline Leads, have personally completed numerous successful, SIMILAR projects utilizing multi-office and multi-discipline coordination. The relationships built on respect for each other's qualifications and commitments over the years will allow us to effectively plan the completion of each task without any surprises.

Project Challenges

Metric has encountered numerous challenges through each individual and unique contract. Our management philosophy and the evolved task work-order based management process has allowed us to ALWAYS present solutions to the client – never problems. Detailed examples of recent and ongoing challenge with similar projects is as follows:

FDOT District 4's TSM&O Arterial Program faced numerous obstacles and challenges as it developed; the program was truly unique, one of a kind, and has no template to base itself on. At the upmost frontier of the TSM&O Program is an initiative deemed "Active Arterial Management" (AAM), in which engineering staff use various Intelligent Transportation Systems (ITS) to identify and rectify the causes of congestion (both recurring and non) in real time. Some of the challenges met were:

- Unlike the freeway system, the arterials are subject to unexpected delays due to traffic signals, pedestrian activity, transit stops, rail crossings, bridge openings, etc. that must be taken into consideration. New Standard Operating Guidelines had to be developed to account for these obstacles & how to address other incidents on the arterial network.
- New interagency relationships had to be established. Many meetings were held between TSM&O Staff, local agencies, and local responders to demonstrate the abilities of an effective AAM deployment in managing traffic events as well as special events.
- Much of the equipment deployed to date has been tailored for the interstates. In order to make them effective for arterial application, some software advancements were made, as well as additions to the SOGs on how to properly operate and maintain the equipment.
- Statewide Needs Plan – Metric was given only 4 months to research and document the costs and requirements of Active Arterial Management (AAM) throughout the State of Florida, broken up by District. Metric coordinated

with the State and appropriate maintaining agencies to identify the needs of each Agency and provided high level recommendations to support the implementation of the Plan. We met this schedule and the end product was well-received. Ultimately, the plan was approved by all Districts and submitted for consideration to the Secretary of Transportation.

- Contract went from a program support contract to a full TMC operations contract (We have the resources to adjust to these types of changes)

Broward Signalization project

- Modifications in project direction and/or scope were sometimes required midway through some task work orders. Typically, these changes were addressed with minimal budget or time impacts.
- Significant coordination between County, Cities and FDOT.
- Tight Schedule on the SEP retiming project in order to receive grant money for the County.

Districtwide ITS Consultant (Current & Prior contract)

- PROVEN ability to handle multiple concurrent TWOs with accelerated schedules
    - 12 submittals in the month of December 2018
    - Tight QC schedules
    - Had last minute changes
    - Example: CFL DMS comments and responses were due the same day as the plans
    - No excuses, our Team performed and met every deadline!

$112M Broward Express Lanes Design-Build Project (FDOT Districts 4 & 6 – Current)

- Substantial and lengthy coordination with multiple Agencies (D4, D6, FTE, Broward, Miami-Dade)

EVALUATION CRITERIA

5) Location

(5) LOCATION

The following is a summary of what is submitted on the ***Location Attestation Form*** and the ***Local Preference & Tiebreaker Certification Form.***

Location Attestation Form

Metric does not have a principal place of business location (also known as the nerve center) within Broward County.

Metric's ***Principal Place of Business*** is located at:

525 Technology Park, Suite 153, Lake Mary, FL 32707

Local Preference & Tiebreaker Certification Form

Metric does not qualify for Tie Break Criteria or Local Preference (in accordance with the RFP requirements).

Metric is ***not a local vendor*** in Broward County but does have a ***local business address*** at:

3601 W. Commercial Blvd., Suite 16, Fort Lauderdale, FL 33309

EVALUATION CRITERIA

6) Willingness to Meet Time & Budget Requirements

PNC2119168P1 | Continuing Engineering Services for Traffic, Roadway, and Civil Projects

(6) WILLINGNESS TO MEET TIME & BUDGET REQUIREMENTS

YES! Metric is willing and capable of meeting this contract's completion date requirement which is defined by the RFP as "contract duration of three (3) years with two (2) one-year renewals". This commitment includes keeping project costs below the $3,000,000 budget ceiling (per year). These commitments will be honored through a series of schedule, budgeting and management procedures – outlined below.

Meeting Schedule Requirements – Project Schedule Management

The first step in establishing a project is to estimate how long each activity will take. Each Task Lead will determine the duration estimate for that activity. The key to effective project control is to measure actual progress and compare it to planned progress on a timely and regular basis and to take necessary corrective action immediately. The project control process involves regularly gathering data on project performance and comparing it with the planned performance. This process will occur regularly throughout the project. It starts with establishing a baseline plan that shows how the project scope will be accomplished. A regular reporting period is established for comparing the actual progress with the planned progress. During each reporting period, data on actual performance and information on any changes to the project scope, schedule or budget is collected and tracked. Once the updated schedule and budget have been calculated, they are compared with the baseline schedule and budget and analyzed for variances to determine whether the project is ahead or behind the time schedule. The project control process continues throughout the project.

Prior to each submittal to the County, all deliverables will be submitted by our Project Manager, Dale Cody, PE, PTOE, to the Peer Review Managers. The Peer Review Managers will complete the Peer Review Checklists and return them along with the deliverables, to Mr. Cody, who will make certain that comments made during the Peer Review process are resolved. Once all comments have been addressed satisfactorily, the documents and/or plans will be submitted to the County.

Metric's consistently outstanding results, measured by its high evaluation scores, are achieved by using highly qualified staff trained in their fields of expertise, by following our in-house QA/QC program, and by conducting independent and autonomous peer reviews.

Meeting Budget Requirements – Project Budget Management

This requires monitoring all costs associated with the project and taking corrective actions when variances occur. During the planning stage an agreed-upon baseline budget is created for the project. The Project Manager uses this baseline to track expenditures and measure the performance of the project. Metric's Project Manager ensures that the project budget is applied, monitored and updated and product is delivered within expected budget.

Schedule and Budget Controls

Controls for Schedule

There are a number of controls that can ensure that the project remains on schedule. The following are typical control mechanisms employed by Metric:

1. **Kick-Off Meeting.** As the first step for each work order, Metric will hold a kick-off meeting with the County Project Manager and key staff to determine project limits and intersections to include, as well as the traffic controllers, cabinets, communication design, and communication status. During this meeting, administrative issues such as invoicing procedures, the number of reports required, the report format, and administrative routing procedures will be discussed. Also determined, will be the Project Schedule development for additional meetings, key delivery dates, impacts to operations, and any other issues associated to the schedule. In addition, written authorization to perform work on the County's or FDOT's ROW, as well as permission to access traffic signal cabinets, will be obtained.

2. **Project Management Meetings & Resource Sharing:** Metric holds weekly Project Management meetings where all budgets, project schedules, and resource sharing between offices is discussed at length. This aids in keeping all of our projects not only on schedule and within budget, but allows an open forum for all disciplines to discuss the utilization of staff, sharing of insight from numerous perspectives, building relationships, etc.
3. **Deltek Vision.** This comprehensive software management tool allows us to formally track staff hours as well as budget correlation. We can easily account for resources and costs per project.
4. **Scheduling software (Primavera, Oracle P6, Microsoft Project):** These are invaluable resources used for the coordination and tracking of key project milestones.
5. **Monthly Progress Reports.** Progress Reports are provided, outlining the progress of the project and the percent complete. By providing reports on a monthly basis it continually evaluates the progress relative to the project schedule.
6. **Monthly Progress Meetings.** In conjunction with the Progress Reports, our Project Manager will sit down with the County's Project Manager and go through the reports to ensure all questions are answered, and explanations are provided should there be any variances from the project schedule.
7. **Internal Team Meetings.** Frequently our Project Managers have internal team meetings on a weekly or bi-weekly basis with Task Leaders to ensure the day-to-day project production is kept on schedule.
8. **Key Milestones in Schedule.** In addition to the base line established for the project schedule, key milestones are identified. This ensures the subsequent phases of the project have the necessary information to proceed and remain on schedule.

Controls for Project Budget

An essential part of a Project Manager's job is to ensure that the project is completed within the approved budget. When tracking project finances, the Project Manager will identify budget variances as they occur and will document the Budget Variance Report component of the Project Status Report. The following are implemented by the Project Manager:

1. **Cash Flow Analysis** - In order to ensure that projects stay on budget, each project is provided a cash flow budget that provides costing for a project on a month to month basis. This ensures that not only are staffing resources allotted and monitored, but that the budget is also constantly monitored; thus allowing us to plan and stay on top of the overall project budget and ensure that we do not exceed it.
2. **Identify budget variances** as they occur and focus on the following financial component of the project.
    a. Understand the reasons for either positive or negative variances in the budget.
    b. Make adjustments to the budget to reflect any changes or revise cost estimates.
    c. Communicate any budget changes or issues with the Project Manager in early stages of project development.
    d. Obtain approval from the Project Manager for any budget adjustments.

A Word on Invoicing

The Metric Team is very aware of the County's stringent and detailed invoicing process. Our team has an experienced, full-time "behind the scene" administrative and contract support team – led by Heidi Bouthillier and Cindy Ramirez - who are extremely familiar with the complexities of Broward County's suggested invoicing format. They facilitate the creation, review and submission of timely invoices for the services provided under the current contract's scope of services. Each invoice goes through a thorough and tedious QC review to ensure accurate accounting. We also prepare and submit the CBE Monthly Utilization Report (MUR) to the Broward County Office of Economic and Small Business Development (OESBD) as required by the contract. This provides an up-to-date and accurate report of the CBE Monthly Utilization.

EVALUATION CRITERIA

7) Volume of Previous Work

(7) VOLUME OF PREVIOUS WORK

The following is a summary of what is submitted on the **Volume of Previous Work Attestation Form** and the **Volume of Previous Work Attestation Joint Venture Form.**

Volume of Previous Work Attestation Form

Project Title: Traffic Signalization Improvement Program Continuing Services

Contract Number: RLI# R0840008R1

Department/Division: Highway Construction and Engineering Division

Date Awarded: 06/28/2011

Prime: Paid to Date - $4,704,968.81

CBE Paid to Date - $1,139,642.53 → **CBE Percentage: 24.22% (CBE Goal was 22%)**

Project Title: Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services

Contract Number: RFP# R1177105P1

Department/Division: Highway Construction and Engineering Division

Date Awarded: 06/2/2015

Prime: Paid to Date - $4,097,215.93

Allotted Funds to CBE (upcoming billing cycle) - $743,852.47* → **CBE Percentage: 18.16%***

[Actual CBE Paid to Date - $591,222.74 → **CBE Percentage: 14.43%]*

The CBE goal for this contract is 19%. The above percentages are always changing due to the work orders we receive; however, we continue to remain on track to meet or exceed the CBE goal for this contract. **In addition to the above CBE utilization history, our Team commits to giving 25% of our contract to CBE-certified subconsultants.**

Volume of Previous Work Attestation Joint Venture Form

Not applicable.

EVALUATION CRITERIA

Additional Information:

Firm Licenses / Certifications

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT, P.E.
SECRETARY

July 9, 2019

Manuel A. Benitez, PE, President
METRIC ENGINEERING, INC.
13940 SW 136th Street, Suite 200
Miami, Florida 33186

Dear Mr. Benitez:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 2 - Project Development and Environmental (PD&E) Studies

Group 3 - Highway Design - Roadway

- 3.1 - Minor Highway Design
- 3.2 - Major Highway Design
- 3.3 - Controlled Access Highway Design

Group 4 - Highway Design - Bridges

- 4.1.1 - Miscellaneous Structures
- 4.1.2 - Minor Bridge Design
- 4.2.2 - Major Bridge Design - Steel

Group 5 - Bridge Inspection

- 5.4 - Bridge Load Rating

Group 6 - Traffic Engineering and Operations Studies

- 6.1 - Traffic Engineering Studies
- 6.2 - Traffic Signal Timing
- 6.3.1 - Intelligent Transportation Systems Analysis and Design
- 6.3.2 - Intelligent Transportation Systems Implementation
- 6.3.3 - Intelligent Transportation Traffic Engineering Systems Communications
- 6.3.4 - Intelligent Transportation Systems Software Development

Group 7 - Traffic Operations Design

- 7.1 - Signing, Pavement Marking and Channelization
- 7.2 - Lighting
- 7.3 - Signalization

Group 9 - Soil Exploration, Material Testing and Foundations

9.1 - Soil Exploration
9.4.1 - Standard Foundation Studies

Group 10 - Construction Engineering Inspection

10.1 - Roadway Construction Engineering Inspection
10.3 - Construction Materials Inspection
10.4 - Minor Bridge & Miscellaneous Structures CEI
10.5.1 - Major Bridge CEI - Concrete
10.5.2 - Major Bridge CEI - Steel

Group 13 - Planning

13.4 - Systems Planning
13.5 - Subarea/Corridor Planning
13.6 - Land Planning/Engineering
13.7 - Transportation Statistics

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2020 for contracting purposes.

Approved Rates

Home/ Branch Overhead	Field Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses	Home Direct Expense	Field Direct Expense
144.47%	97.01%	0.145%	Excluded	No	5.51%	24.60%*

*Rent and utilities excluded from field office rate. These costs will be directly reimbursed on contracts that require the consultant to provide field office.

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell
Professional Services
Qualification Administrator

www.fdot.gov

State of Florida
Department of State

I certify from the records of this office that METRIC ENGINEERING INC. is a corporation organized under the laws of the State of Florida, filed on July 27, 1976.

The document number of this corporation is 509621.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on January 2, 2019, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Second day of January, 2019

Ken Detzner

Secretary of State

Tracking Number: CC2766170949

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

METRIC ENGINEERING, INC.

13940 S.W. 136TH STREET
SUITE 200
MIAMI FL 33186

LICENSE NUMBER: CA2294

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 03/27/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Collinsworth Ins&Risk Mgmt Services Inc 464 Glen Way Miami Springs FL 33166	CONTACT NAME: Erinn E Collinsworth PHONE (A/C, No, Ext): (786) 930-4795 FAX (A/C, No): (786) 930-4794 E-MAIL ADDRESS: erinn@collinsworthinsurance.com
INSURED (305) 235-5098 Metric Engineering, Inc. 13940 SW 136th Street Suite 200 Miami FL 33186	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Hartford Fire Insurance Compan — 19682 INSURER B : Hartford Casualty Insurance Co — 29424 INSURER C : Prop & Cas Ins Co of Hartford — 34690 INSURER D : Twin City Fire Insurance Compa — 29459 INSURER E : Continental Casualty Company — 20443 INSURER F :

COVERAGES **CERTIFICATE NUMBER:** Cert ID 2700 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	X COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$	1,000,000
	CLAIMS-MADE X OCCUR			21 UUN HN7309	04/01/2019	04/01/2020	DAMAGE TO RENTED PREMISES (Ea occurrence)	$	1,000,000
							MED EXP (Any one person)	$	10,000
							PERSONAL & ADV INJURY	$	1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$	2,000,000
	POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$	2,000,000
	X OTHER: Location & Project						Empl Benefits Liab	$	1,000,000
C	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$	1,000,000
	X ANY AUTO			21 UEN HN7251	04/01/2019	04/01/2020	BODILY INJURY (Per person)	$	
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$	
	X HIRED AUTOS / X NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$	
								$	
B	X UMBRELLA LIAB X OCCUR			21 XHU HN5379	04/01/2019	04/01/2020	EACH OCCURRENCE	$	2,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$	2,000,000
	DED X RETENTION $ 10,000							$	QUOTE INC
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N / N/A If yes, describe under DESCRIPTION OF OPERATIONS below			21 WE AT3855	04/01/2019	04/01/2020	X PER STATUTE / OTH-ER		
							E.L. EACH ACCIDENT	$	1,000,000
							E.L. DISEASE - EA EMPLOYEE	$	1,000,000
							E.L. DISEASE - POLICY LIMIT	$	1,000,000
E	Professional Liability			AEH591907837	04/01/2019	04/01/2020	Each Claim	$	2,000,000
				Claims Made Form			Policy Aggregate	$	2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

"Specimen Certificate"

For Proposal Purposes

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Erinn E. Collinsworth

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Broward County Board of County Commissioners BidSync

2019 FLORIDA PROFIT CORPORATION ANNUAL REPORT

FILED
Jan 02, 2019
Secretary of State
CC2766170949

DOCUMENT# 509621

Entity Name: METRIC ENGINEERING INC.

Current Principal Place of Business:

13940 SW 136TH ST
SUITE 200
MIAMI, FL 33186

Current Mailing Address:

13940 SW 136TH ST
SUITE 200
MIAMI, FL 33186 US

FEI Number: 59-1685550

Certificate of Status Desired: Yes

Name and Address of Current Registered Agent:

PEREZ, MARILEY
13940 S.W. 136TH STREET
SUITE 200
MIAMI, FL 33186 US

The above named entity submits this statement for the purpose of changing its registered office or registered agent, or both, in the State of Florida.

SIGNATURE:

Electronic Signature of Registered Agent — Date

Officer/Director Detail :

Title	EXECUTIVE VICE PRESIDENT
Name	CAULEY, DOUGLAS K
Address	1265 CHURCH AVENUE
City-State-Zip:	CHIPLEY FL 32428

Title	SENIOR VICE PRESIDENT
Name	CODY, DALE
Address	615 CRESCENT EXECUTIVE COURT SUITE 524
City-State-Zip:	LAKE MARY FL 32746

Title	SENIOR VICE PRESIDENT
Name	LINARES, ROBERTO A
Address	13940 SW 136TH ST SUITE 200
City-State-Zip:	MIAMI FL 33186

Title	VP
Name	FULLER, CHARLES B
Address	615 CRESCENT EXECUTIVE COURT SUITE 524
City-State-Zip:	LAKE MARY FL 32746

Title	SENIOR VICE PRESIDENT
Name	WAGES, WILLIAM R
Address	615 CRESCENT EXECUTIVE COURT SUITE 524
City-State-Zip:	LAKE MARY FL 32746

Title	TREASURER
Name	GARCIA, ISABEL
Address	13940 SW 136TH ST SUITE 200
City-State-Zip:	MIAMI FL 33186

Title	VP
Name	WIWI, AMY Y
Address	1265 CHURCH AVENUE
City-State-Zip:	CHIPLEY FL 32428

Title	VP
Name	DECRESIE, EDWARD J
Address	615 CRESCENT EXECUTIVE COURT SUITE 524
City-State-Zip:	LAKE MARY FL 32746

Continues on page 2

I hereby certify that the information indicated on this report or supplemental report is true and accurate and that my electronic signature shall have the same legal effect as if made under oath; that I am an officer or director of the corporation or the receiver or trustee empowered to execute this report as required by Chapter 607, Florida Statutes; and that my name appears above, or on an attachment with all other like empowered.

SIGNATURE: MARILEY PEREZ DIRECTOR 01/02/2019

Electronic Signature of Signing Officer/Director Detail — Date

Officer/Director Detail Continued :

Title	VP
Name	STRATTON, CHARLES
Address	615 CRESCENT EXECUTIVE COURT SUITE 524
City-State-Zip:	LAKE MARY FL 32746

Title	DIRECTOR, CEO
Name	BENITEZ, VICTOR M
Address	13940 SW 136TH ST SUITE 200
City-State-Zip:	MIAMI FL 33186

Title	VP
Name	SLOUP, WILLIAM F
Address	615 CRESCENT EXECUTIVE CT., STE 524
City-State-Zip:	LAKE MARY FL 32746

Title	DIRECTOR, PRESIDENT
Name	BENITEZ, MANUEL A
Address	13940 SW 136TH ST SUITE 200
City-State-Zip:	MIAMI FL 33186

Title	VP
Name	CARNES, CLIFFORD CRAIG
Address	11760 MARCO BEACH DRIVE - STE. 1
City-State-Zip:	JACKSONVILLE FL 32224

Title	VP
Name	BURNETT, WAYMON D.
Address	2616 JENKS AVENUE
City-State-Zip:	PANAMA CITY FL 32405

Title	DIRECTOR, COO, SECRETARY
Name	PEREZ, MARILEY
Address	13940 SW 136TH ST SUITE 200
City-State-Zip:	MIAMI FL 33186

Title	VP
Name	RODRIGUEZ, CARLOS D
Address	13940 SW 136 STREET SUITE 200
City-State-Zip:	MIAMI FL 33186

Title	DIRECTOR, ASST. TREASURER
Name	BENITEZ, IVONNE
Address	13940 SW 136TH ST SUITE 200
City-State-Zip:	MIAMI FL 33186

Title	DIRECTOR
Name	BENITEZ, VERONICA
Address	13940 SW 136TH ST SUITE 200
City-State-Zip:	MIAMI FL 33186

AGREEMENT EXCEPTION FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, it shall be deemed an affirmation by the Vendor that it accepts the terms and conditions of the County's Agreement as disclosed in the solicitation.

The Vendor must either provide specific proposed alternative language on the form below. Additionally, a brief justification specifically addressing each provision to which an exception is taken should be provided.

☐ There are no exceptions to the terms and conditions of the County Agreement as referenced in the solicitation; or

☑ The following exceptions are disclosed below:

(use additional forms as needed; separate each Article/Section number)

Term or Condition Article / Section	**Insert version of exception or specific proposed alternative language**	**Provide brief justification for change**
Article 5.5	5.5 If Contractor fails to substantially complete a project on or before the substantial completion date specified in its agreement with County, and the failure to substantially complete is caused in whole or in part by Consultant, then Consultant shall pay to County its proportional share of any claim for damages to contractor arising out of the delay. The provisions for the computation of delay costs, damages, or any other amounts, whether direct or indirect, in the agreement between the Contractor and County are incorporated herein. This section shall not affect the indemnification rights or obligations of either party otherwise set forth in this Agreement.	Language is currently not covered by insurance

Vendor Name: Metric Engineering, Inc.

FINANCIAL INFORMATION

Metric Engineering, Inc. asserts that our Financial Information is exempt from public disclosure pursuant to **Florida Statutes 119.071 (1) (c)** and therefore is to be handled as **CONFIDENTIAL**. Per the "Standard Instructions to Vendors, L. Confidential Material/Public Records and Exemptions, #2 and #3" we have provided three hard copies in a separately sealed envelope with the required labeling and have hand-delivered it to Broward County Purchasing Division, located at 115 South Andrews Avenue, Room 212, Fort Lauderdale, Fl, 33301.

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT, P.E.
SECRETARY

June 25, 2019

Benjamin Essien, President
EBS ENGINEERING, INC.
4715 NW 157th Street, Suite 202
Miami, Florida 33014

Dear Mr. Essien:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 3 - Highway Design - Roadway

3.1 - Minor Highway Design

Group 7 - Traffic Operations Design

7.1 - Signing, Pavement Marking and Channelization
7.3 - Signalization

Group 10 - Construction Engineering Inspection

10.1 - Roadway Construction Engineering Inspection

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2020 for contracting purposes.

Approved Rates

Home/ Branch Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses	Home Direct Expense
250.23%	0.229%	Excluded	No	3.00%

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell
Professional Services
Qualification Administrator

State of Florida
Department of State

I certify from the records of this office that EBS ENGINEERING, INC. is a corporation organized under the laws of the State of Florida, filed on May 23, 1994.

The document number of this corporation is P94000038418.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on January 10, 2019, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Tenth day of January, 2019

Secretary of State

Tracking Number: 2913401065CC

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

EBS ENGINEERING, INC.

4715 NW 157TH STREET
SUITE 202
MIAMI FL 33014

LICENSE NUMBER: CA6943

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT
Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301 • 954-357-6400 • FAX 954-357-5674

April 12, 2019

Mr. Benjamin S. Essien
EBS ENGINEERING, INC.
1911 NW 150th Avenue, Suite 202
Pembroke Pines, Florida 33028

Dear Mr. Essien:

The Broward County Office of Economic and Small Business Development (OESBD) is pleased to announce that your firm's **County Business Enterprise (CBE)** and **Small Business Enterprise (SBE)** certifications have been renewed.

Your firm's certifications are continuing from your anniversary date but are contingent upon the firm verifying its eligibility annually through this office. You will be notified in advance of your obligation to continue eligibility in a timely fashion. However, the responsibility to ensure continued certification is yours. Failure to document your firm's continued eligibility for the CBE and SBE programs within **thirty (30) days** from your anniversary may result in the expiration of your firm's certifications. Should you continue to be interested in certification after it has expired, you will need to submit a new application, and all required supporting documentation for review.

To review current Broward County Government bid opportunities, visit: www.broward.org/Purchasing and click on "Current Solicitations and Results." Also, from this website, you can log into your firm's profile in BidSync to ensure you have added all appropriate classification codes. Bid opportunities over $3,500 will be advertised to vendors via e-mail and according to classification codes, so please ensure that both the Purchasing Division and OESBD are apprised of your current e-mail address.

Your primary certification group is: **Architecture/Engineering Services.** This is also how your listing in our directory will read. You may access your firm's listing by visiting the Office of Economic and Small Business Development Directory, located on the internet at: www.broward.org/EconDev and click on "Certified Firm Directories."

Your firm may compete for, and perform work on Broward County projects in the following areas:

NAICS CODE: 541330, 541620, 541690, 562910

We look forward to working with you to achieve greater opportunities for your business through county procurement.

Sincerely,

Sandy-Michael McDonald, Director
Office of Economic and Small Business Development

Cert Agency: BC-CBE SBE
ANNIVERSARY DATE: May 17th

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT, P.E.
SECRETARY

July 4, 2019

Adolphine Keith-Lazowick, President
KEITH AND ASSOCIATES, INC.
301 East Atlantic Boulevard
Pompano Beach, Florida 33060

Dear Ms. Keith-Lazowick:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 3 - Highway Design - Roadway

- 3.1 - Minor Highway Design
- 3.2 - Major Highway Design

Group 6 - Traffic Engineering and Operations Studies

- 6.1 - Traffic Engineering Studies
- 6.2 - Traffic Signal Timing

Group 7 - Traffic Operations Design

- 7.1 - Signing, Pavement Marking and Channelization
- 7.2 - Lighting
- 7.3 - Signalization

Group 8 - Survey and Mapping

- 8.1 - Control Surveying
- 8.2 - Design, Right of Way & Construction Surveying
- 8.4 - Right of Way Mapping

Group 10 - Construction Engineering Inspection

- 10.1 - Roadway Construction Engineering Inspection

Group 13 - Planning

- 13.6 - Land Planning/Engineering

Group 15 - Landscape Architect

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2020 for contracting purposes.

Approved Rates

Home/ Branch Overhead	Field Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses	Home Direct Expense	Field Direct Expense	Published Fee Schedule
126.93%	106.80%	1.320%	Reimbursed	No	0.60%	0.00%*	Yes

*Rent and utilities excluded from field office rate. These costs will be directly reimbursed on contracts that require the consultant to provide field office.

Audited Rates

SUE Equipment Rates $70.00 per hour

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell
Professional Services
Qualification Administrator

State of Florida
Department of State

I certify from the records of this office that KEITH AND ASSOCIATES, INC. is a corporation organized under the laws of the State of Florida, filed on January 20, 1998, effective January 16, 1998.

The document number of this corporation is P98000006011.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on February 5, 2019, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Fifth day of February, 2019

GREAT SEAL OF THE STATE OF FLORIDA
IN GOD WE TRUST

Secretary of State

Tracking Number: 7798248538CC

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

Ron DeSantis, Governor

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

KEITH & ASSOCIATES, INC.

301 EAST ATLANTIC BOULEVARD
POMPANO BEACH FL 33060

LICENSE NUMBER: CA7928

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

County Commissioners

Broward County Board of
County Commissioners

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500
800HELPFLA(435-7352) or (850) 488-2221

February 1, 2019

KEITH AND ASSOCIATES INC
301 EAST ATLANTIC BLVD
POMPANO BEACH, FL 33060-6643

SUBJECT: Professional Surveyor and Mapper Business Certificate # LB6860

Your application / renewal as a professional surveyor and mapper business as required by Chapter 472, Florida Statutes, has been received and processed.

The license appears below and is valid through February 28, 2021.

You are required to keep your information with the Board current. Please visit our website at www.800helpfla.com/psm to create your online account. If you have already created your online account, you can use the website to maintain your license. You can also find other valuable information on the website.

If you have any questions, please do not hesitate to call the Division of Consumer Services, Board of Professional Surveyors and Mappers at 800-435-7352 or 850-488-2221.

Detach Here

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: **LB6860**
Expiration Date February 28, 2021

Professional Surveyor and Mapper Business License

Under the provisions of Chapter 472, Florida Statutes

KEITH AND ASSOCIATES INC
301 EAST ATLANTIC BLVD
POMPANO BEACH, FL 33060-6643

Nicole Fried

NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT, P.E.
SECRETARY

July 6, 2019

Arvind Kumbhojkar, President
HP CONSULTANTS INC.
10220 SW 107th Street
Miami, Florida 33176

Dear Mr. Khumbhojkar:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 6 - Traffic Engineering and Operations Studies

- 6.1 - Traffic Engineering Studies
- 6.2 - Traffic Signal Timing
- 6.3.1 - Intelligent Transportation Systems Analysis and Design
- 6.3.2 - Intelligent Transportation Systems Implementation

Group 7 - Traffic Operations Design

- 7.1 - Signing, Pavement Marking and Channelization
- 7.3 - Signalization

Group 9 - Soil Exploration, Material Testing and Foundations

- 9.1 - Soil Exploration
- 9.2 - Geotechnical Classification Laboratory Testing
- 9.4.1 - Standard Foundation Studies

Group 10 - Construction Engineering Inspection

- 10.1 - Roadway Construction Engineering Inspection

Group 13 - Planning

- 13.3 - Policy Planning
- 13.4 - Systems Planning
- 13.5 - Subarea/Corridor Planning
- 13.7 - Transportation Statistics

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2020 for contracting purposes.

Approved Rates

Home/ Branch Overhead	Premium Overtime	Reimburse Actual Expenses	Home Direct Expense
166.17%	Excluded	No	6.34%

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell
Professional Services
Qualification Administrator

State of Florida
Department of State

I certify from the records of this office that HP CONSULTANTS INC. is a corporation organized under the laws of the State of Florida, filed on May 20, 2002.

The document number of this corporation is P02000056055.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on January 29, 2019, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Twenty-ninth day of January, 2019

GREAT SEAL OF THE STATE OF FLORIDA
IN GOD WE TRUST

Jennifer Kennedy
Secretary of State

Tracking Number: 3752145408CC

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

HP CONSULTANTS, INC.

10220 S.W. 107TH ST.
MIAMI FL 33176

LICENSE NUMBER: CA9509

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com

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This is your license. It is unlawful for anyone other than the licensee to use this document.

OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT
Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301 • 954-357-6400 • FAX 954-357-5674

February 7, 2019

Mr. Arvind Kumbhojkar
HP CONSULTANTS, INC
4444 Inverrary Blvd., Unit O
Lauderhill, Florida 33319

Dear Mr. Kumbhojkar:

The Broward County Office of Economic and Small Business Development (OESBD) is pleased to announce that your firm's **County Business Enterprise (CBE)** and **Small Business Enterprise (SBE)** certifications have been renewed**.**

Your firm's certifications are continuing from your anniversary date but are contingent upon the firm verifying its eligibility annually through this office. You will be notified in advance of your obligation to continue eligibility in a timely fashion. However, the responsibility to ensure continued certification is yours. Failure to document your firm's continued eligibility for the CBE and SBE programs within **thirty (30) days** from your anniversary may result in the expiration of your firm's certifications. Should you continue to be interested in certification after it has expired, you will need to submit a new application, and all required supporting documentation for review.

To review current Broward County Government bid opportunities, visit: www.broward.org/Purchasing and click on "Current Solicitations and Results." Also, from this website, you can log into your firm's profile in BidSync to ensure you have added all appropriate classification codes. Bid opportunities over $3,500 will be advertised to vendors via e-mail and according to classification codes, so please ensure that both the Purchasing Division and OESBD are apprised of your current e-mail address.

Your primary certification group is: **Architecture/Engineering Services.** This is also how your listing in our directory will read. You may access your firm's listing by visiting the Office of Economic and Small Business Development Directory, located on the internet at: www.broward.org/EconDev and click on "Certified Firm Directories."

Your firm may compete for, and perform work on Broward County projects in the following areas:

NAICS CODE: 541330, 541380

We look forward to working with you to achieve greater opportunities for your business through county procurement.

Sincerely,

Sandy-Michael McDonald, Director
Office of Economic and Small Business Development

Cert Agency: BC-CBE SBE
ANNIVERSARY DATE: January 31st

9/23/2019

Broward County Board of County Commissioners

BROWARD COUNTY FLORIDA

Office of Economic and Small Business Development

Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301 • 954-357-6400 • FAX 954-357-5674 • TTY 954-357-5664

This Certificate is Awarded to:

HP CONSULTANTS, INC.

As set forth in the Broward County Business Opportunity Act of 2012, the certification requirements have been met for:

County Business Enterprise
Small Business Enterprise
Anniversary Date: January 31st

Authorized Representative

The Office of Economic and Small Business Development must be notified within 30 days of any material changes in the business which may affect ownership and control. Failure to do so may result in the revocation of this certificate and/or imposition of other sanctions.

A service of the Broward County Board of County Commissioners
www.broward.org/smallbusiness

© GOES 9/2

LITHO IN U.S.A.

FDOT

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT, P.E.
SECRETARY

July 4, 2019

Francis Chin, Jr., President
F&J ENGINEERING GROUP, INC.
8761 North Lake Dasha Drive
Plantation, Florida 33324

Dear Mr. Chin:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 10 - Construction Engineering Inspection

10.1 - Roadway Construction Engineering Inspection
10.3 - Construction Materials Inspection
10.4 - Minor Bridge & Miscellaneous Structures CEI

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2020 for contracting purposes.

Approved Rates

Field Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses	Field Direct Expense
122.78%	0.893%	Reimbursed	No	11.01%*

*Rent and utilities excluded from field office rate. These costs will be directly reimbursed on contracts that require the consultant to provide field office.

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell
Professional Services
Qualification Administrator

Detail by Entity Name

Fl rida Pr fit C rp rati n m

F&J ENGINEERING GROUP, INC. m

Filing Information

Document Number	P10000024624 m
FEI/EIN Number	27-2150496
Date Filed	03/19/2010
Effective Date m	03/12/2010 m
State	FL
Status m	ACTIVE m

Principal Address m

8761 N. LAKE DASHA DR. m
PLANTATION, FL 33324

Mailing Address m

8761 N. LAKE DASHA DR. m
PLANTATION, FL 33324

Registered Agent Name & Address m

Chin, Francis R sevelt, Jr.
8761 N. LAKE DASHA DR. m
PLANTATION, FL 33324 m

Name Changed: 01/16/2018 m

Officer/Director Detail

Name & Address

Title President m

CHIN, FRANCIS R sevelt, Jr. m
8761 N. LAKE DASHA DR.
PLANTATION, FL 33324 m

Title Secretary m

CHIN, LACHMEE narine
8761 N. LAKE DASHA DR. m
PLANTATION, FL 33324 m

Title VP m

Chin, Fr n is Rosevelt, Sr. 5
17303 SW 87th Ave. 5
P lmetto B y, FL 331 7 5

Annual Reports

Report Year	Filed Date
2017	04/19/2017
2018	01/16/2018 5
2019	03/11/2019 5

Document Images

03/11/2019 -- ANNUAL REPORT	View image in PDF format
01/16/2018 -- ANNUAL REPORT	View image in PDF format
04/19/2017 -- ANNUAL REPORT	View image in PDF format
04/26/2016 -- ANNUAL REPORT	View image in PDF format 5
02/19/201 -- ANNUAL REPORT	View image in PDF format
01/10/2014 -- ANNUAL REPORT	View image in PDF format
01/24/2013 -- ANNUAL REPORT	View image in PDF format
01/06/2012 -- ANNUAL REPORT	View image in PDF format
04/26/2011 -- ANNUAL REPORT	ma ma
01/07/2011 -- MISC-ADD FEIN#	View image in PDF format
03/19/2010 -- Domesti Profit 5	View image in PDF format 5

Florida Department of State, Division of Corporations 5

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

F & J ENGINEERING GROUP, INC.

8761 N. LAKE DASHA DRIVE
PLANTATION FL 33324

LICENSE NUMBER: CA29221

EXPIRATION DATE: FEBRUARY 28, 2021

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County Commissioners

BROWARD COUNTY
FLORIDA

Office of Economic and Small Business Development

Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301 • 954-357-6400 • FAX 954-357-5674 • TTY 954-357-5664

This Certificate is Awarded to:

F & J ENGINEERING GROUP, INC.

As set forth in the Broward County Business Opportunity Act of 2012, the certification requirements have been met for:

County Business Enterprise
Anniversary Date: August 14th

Authorized Representative

The Office of Economic and Small Business Development must be notified within 30 days of any material changes in the business which may affect ownership and control. Failure to do so may result in the revocation of this certificate and/or imposition of other sanctions.

A Service of the Broward County Board of County Commissioners
www.broward.org/smallbusiness

© GOES 912

LITHO IN U.S.A.

FDOT

Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

MIKE DEW
SECRETARY

October 2, 2018

Mark Mesiano, Qualifying Engineer
FLORIDA ENGINEERING & TESTING INC.
250 S.W. 13th Avenue
Pompano Beach, Florida 33069

Dear Mr. Mesiano:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 9 - Soil Exploration, Material Testing and Foundations

9.1 - Soil Exploration
9.2 - Geotechnical Classification Laboratory Testing
9.4.1 - Standard Foundation Studies

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. Your firm may pursue projects in the referenced work types with fees estimated at less than $500,000.00. This status shall be valid until October 2, 2019 for contracting purposes.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell
Professional Services
Qualification Administrator

CBHK/kw

State of Florida

Department of State

I certify the attached is a true and correct copy of the Articles of Incorporation of FLORIDA ENGINEERING & TESTING INC., a Florida corporation, filed on May 4, 1994, as shown by the records of this office.

The document number of this corporation is P94000034544.

Given under my hand and the
Great Seal of the State of Florida,
at Tallahassee, the Capital, this the
Ninth day of May, 1994

Jim Smith
Secretary of State

CR2EO22 (2-91)

9/23/2019
Broward County Board of County Commissioners
PNC2119168P
p. 425

Ron DeSantis, Governor

Halsey Beshears, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

FLORIDA ENGINEERING & TESTING, INC.

250 SW 13TH AVENUE
POMPANO BEACH FL 33069

LICENSE NUMBER: CA6923

EXPIRATION DATE: FEBRUARY 28, 2021

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OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT
Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301
954-357-6400 • FAX 954-357-5674 • TTY 954-357-5664

November 7, 2018

Ms. Christine Chang
FLORIDA ENGINEERING & TESTING, INC.
250 SW 13th Avenue
Pompano Beach, Florida 33069

Dear Ms. Chang:

The Broward County Office of Economic and Small Business Development (OESBD) is pleased to announce that your firm's **County Business Enterprise (CBE)** certification has been renewed.

Your firm's certification is continuing from your anniversary date but is contingent upon the firm verifying its eligibility annually through this office. You will be notified in advance of your obligation to continue eligibility in a timely fashion. However, the responsibility to assure continued certification is yours. Failure to document your firm's continued eligibility for the CBE program within **thirty (30) days** from your anniversary may result in the expiration of your firm's certification. Should you continue to be interested in certification after it has expired, you will need to submit a new application and all required supporting documentation for review.

To review current Broward County Government bid opportunities visit: www.broward.org/Purchasing and click on "Current Solicitations and Results." Also, from this website, you can log into your firm's profile in BidSync to ensure you have added all appropriate classification codes. Bid opportunities over $3,500 will be advertised to vendors via e-mail and according to classification codes, so please ensure that both the Purchasing Division and OESBD are apprised of your current e-mail address.

Your primary certification group is: **Architecture and Engineering Services.** This is also how your listing in our directory will read. You may access your firm's listing by visiting the Office of Economic and Small Business Development Directory, located on the internet at: www.broward.org/EconDev and click on "Certified Firm Directories."

Your firm may compete for, and perform work on Broward County projects in the following areas:

NAICS CODE: 541330, 541380

We look forward to working with you to achieve greater opportunities for your business through county procurement.

Sincerely,

Sandy-Michael McDonald, Director
Office of Economic and Small Business Development

Cert Agency: BC-CBE
ANNIVERSARY DATE: NOVEMBER 15th

Broward County Board of County Commissioners
Mark D. Bogen • Beam Furr • Steve Geller • Dale V.C. Holness • Nan H. Rich • Tim Ryan • Barbara Sharief • Michael Udine
www.broward.org

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT, P.E.
SECRETARY

June 22, 2019

Jeff Gerken, President
ALBECK GERKEN, INC.
1907 North US Highway 301, Suite 120
Tampa, Florida 33619

Dear Mr. Gerken:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 6 - Traffic Engineering and Operations Studies

- 6.1 - Traffic Engineering Studies
- 6.2 - Traffic Signal Timing
- 6.3.1 - Intelligent Transportation Systems Analysis and Design
- 6.3.2 - Intelligent Transportation Systems Implementation
- 6.3.3 - Intelligent Transportation Traffic Engineering Systems Communications
- 6.3.4 - Intelligent Transportation Systems Software Development

Group 7 - Traffic Operations Design

- 7.1 - Signing, Pavement Marking and Channelization
- 7.3 - Signalization

Group 13 - Planning

- 13.4 - Systems Planning
- 13.5 - Subarea/Corridor Planning
- 13.7 - Transportation Statistics

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2020 for contracting purposes.

Approved Rates

Home/ Branch Overhead	Field Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses	Home Direct Expense	Field Direct Expense
162.46%	126.95%	0.848%	Excluded	No	16.76%	0.99%*

*Rent and utilities excluded from field office rate. These costs will be directly reimbursed on contracts that require the consultant to provide field office.

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell
Professional Services
Qualification Administrator

State of Florida
Department of State

I certify from the records of this office that ALBECK GERKEN, INC. is a Nebraska corporation authorized to transact business in the State of Florida, qualified on April 25, 2005.

The document number of this corporation is F05000002568.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on January 10, 2019, and that its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Tenth day of January, 2019

Secretary of State

Tracking Number: 1375904094CU

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

ALBECK GERKEN, INC.

1907 N US HWY 301
SUITE 120
TAMPA FL 33619

LICENSE NUMBER: CA26606

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com

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Broward County Board of County Commissioners

PNC2119168P1

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT
SECRETARY

July 22, 2019

Kate Fontaine, VP, Administration
WANTMAN GROUP, INC.
2035 Vista Parkway, Suite 100
West Palm Beach, Florida 33411

Dear Ms. Fontaine:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 2 - Project Development and Environmental (PD&E) Studies

Group 3 - Highway Design - Roadway

- 3.1 - Minor Highway Design
- 3.2 - Major Highway Design
- 3.3 - Complex Highway Design

Group 4 - Highway Design - Bridges

- 4.1.1 - Miscellaneous Structures
- 4.1.2 - Minor Bridge Design
- 4.2.1 - Major Bridge Design - Concrete
- 4.2.2 - Major Bridge Design - Steel

Group 5 - Bridge Inspection

- 5.4 - Bridge Load Rating

Group 6 - Traffic Engineering and Operations Studies

- 6.1 - Traffic Engineering Studies
- 6.2 - Traffic Signal Timing
- 6.3.1 - Intelligent Transportation Systems Analysis and Design
- 6.3.2 - Intelligent Transportation Systems Implementation
- 6.3.3 - Intelligent Transportation Traffic Engineering Systems Communications

Group 7 - Traffic Operations Design

- 7.1 - Signing, Pavement Marking and Channelization
- 7.2 - Lighting
- 7.3 - Signalization

Group 8 - Survey and Mapping

8.1 - Control Surveying
8.2 - Design, Right of Way & Construction Surveying
8.3 - Photogrammetric Mapping
8.4 - Right of Way Mapping

Group 10 - Construction Engineering Inspection

10.1 - Roadway Construction Engineering Inspection

Group 11 - Engineering Contract Administration and Management

Group 13 - Planning

13.4 - Systems Planning
13.5 - Subarea/Corridor Planning
13.6 - Land Planning/Engineering
13.7 - Transportation Statistics

Group 14 - Architect

Group 15 - Landscape Architect

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2020 for contracting purposes.

Approved Rates

Home/ Branch Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses	Home Direct Expense
196.24%	0.545%	Reimbursed	No	6.56%

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell
Professional Services
Qualification Administrator

State of Florida
Department of State

I certify from the records of this office that WANTMAN GROUP, INC. is a corporation organized under the laws of the State of Florida, filed on July 12, 1991.

The document number of this corporation is S66593.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on January 2, 2019, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Second day of January, 2019

Ken Detzner

Secretary of State

Tracking Number: CC3806734775

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

Ron DeSantis, Governor

Halsey Beshears, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

WANTMAN GROUP, INC.

2035 VISTA PARKWAY
SUITE 100
WEST PALM BEACH FL 33411

LICENSE NUMBER: CA6091

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com

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Broward County Board of County Commissioners

PNC2119168P1

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT, P.E.
SECRETARY

July 3, 2019

Lucy Becerra, President
BMA CONSULTING ENGINEERING, INC.
18503 Pines Boulevard, Suite 210
Pembroke Pines, Florida 33029

Dear Ms. Becerra:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 2 - Project Development and Environmental (PD&E) Studies

Group 3 - Highway Design - Roadway

- 3.1 - Minor Highway Design
- 3.2 - Major Highway Design
- 3.3 - Controlled Access Highway Design

Group 4 - Highway Design - Bridges

- 4.1.1 - Miscellaneous Structures
- 4.1.2 - Minor Bridge Design
- 4.2.1 - Major Bridge Design - Concrete
- 4.2.2 - Major Bridge Design - Steel

Group 5 - Bridge Inspection

- 5.1 - Conventional Bridge Inspection
- 5.2 - Movable Bridge Inspection
- 5.3 - Complex Bridge Inspection
- 5.4 - Bridge Load Rating

Group 7 - Traffic Operations Design

- 7.1 - Signing, Pavement Marking and Channelization
- 7.2 - Lighting
- 7.3 - Signalization

Group 10 - Construction Engineering Inspection

- 10.1 - Roadway Construction Engineering Inspection
- 10.3 - Construction Materials Inspection

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2020 for contracting purposes.

Approved Rates

Home/ Branch Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses	Home Direct Expense
126.69%	0.149%	Reimbursed	No	3.36%

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell
Professional Services
Qualification Administrator

State of Florida
Department of State

I certify from the records of this office that BMA CONSULTING ENGINEERING, INC. is a corporation organized under the laws of the State of Florida, filed on June 5, 2012.

The document number of this corporation is P12000051348.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on January 25, 2019, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Twenty-fifth day of January, 2019

Jennifer Kennedy
Secretary of State

Tracking Number: 7337029145CC

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

Ron DeSantis, Governor

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

BMA CONSULTING ENGINEERING, INC.

16928 SW 35TH STREET
MIRAMAR FL 33027

LICENSE NUMBER: CA29947

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com

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Broward County Board of County Commissioners

PNC2119168P1

OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT
Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301
954-357-6400 • FAX 954-357-5674 • TTY 954-357-5664

October 2, 2018

Ms. Lucy Becerra
BMA CONSULTING ENGINEERING, INC.
16928 SW 35th Street
Miramar, Florida 33027

Dear Ms. Becerra:

The Broward County Office of Economic and Small Business Development (OESBD) is pleased to announce that your firm's **County Business Enterprise (CBE)** certification has been renewed.

Your firm's certification is continuing from your anniversary date but is contingent upon the firm verifying its eligibility annually through this office. You will be notified in advance of your obligation to continue eligibility in a timely fashion. However, the responsibility to assure continued certification is yours. Failure to document your firm's continued eligibility for the CBE program within **thirty (30) days** from your anniversary may result in the expiration of your firm's certification. Should you continue to be interested in certification after it has expired, you will need to submit a new application and all required supporting documentation for review.

To review current Broward County Government bid opportunities visit: www.broward.org/Purchasing and click on "Current Solicitations and Results." Also, from this website, you can log into your firm's profile in BidSync to ensure you have added all appropriate classification codes. Bid opportunities over $3,500 will be advertised to vendors via e-mail and according to classification codes, so please ensure that both the Purchasing Division and OESBD are apprised of your current e-mail address.

Your primary certification group is: **Architecture/Engineering Services.** This is also how your listing in our directory will read. You may access your firm's listing by visiting the Office of Economic and Small Business Development Directory, located on the internet at: www.broward.org/EconDev and click on "Certified Firm Directories."

Your firm may compete for, and perform work on Broward County projects in the following areas:

NAICS CODE: 541330, 541340

We look forward to working with you to achieve greater opportunities for your business through county procurement.

Sincerely,

Sandy-Michael McDonald, Director
Office of Economic and Small Business Development

Cert Agency: BC-CBE
ANNIVERSARY DATE: September 18th

Broward County Board of County Commissioners
Mark D. Bogen • Beam Furr • Steve Geller • Dale V.C. Holness • Chip LaMarca • Nan H. Rich • Tim Ryan • Barbara Sharief • Michael Udine
www.broward.org

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT
SECRETARY

July 3, 2019

John Grow, Executive Vice President
TRANSYSTEMS CORPORATION
d/b/a TRANSYSTEMS CORPORATION CONSULTANTS
200 E Robinson St, Ste 600
Orlando, Florida 32801

Dear Mr. Grow:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 2 - Project Development and Environmental (PD&E) Studies

Group 3 - Highway Design - Roadway

- 3.1 - Minor Highway Design
- 3.2 - Major Highway Design
- 3.3 - Controlled Access Highway Design

Group 4 - Highway Design - Bridges

- 4.1.1 - Miscellaneous Structures
- 4.1.2 - Minor Bridge Design
- 4.2.1 - Major Bridge Design - Concrete
- 4.2.2 - Major Bridge Design - Steel
- 4.4 - Movable Span Bridge Design

Group 5 - Bridge Inspection

- 5.1 - Conventional Bridge Inspection
- 5.2 - Movable Bridge Inspection
- 5.3 - Complex Bridge Inspection
- 5.4 - Bridge Load Rating

Group 6 - Traffic Engineering and Operations Studies

- 6.1 - Traffic Engineering Studies
- 6.2 - Traffic Signal Timing
- 6.3.1 - Intelligent Transportation Systems Analysis and Design
- 6.3.2 - Intelligent Transportation Systems Implementation

Group 7 - Traffic Operations Design

7.1 - Signing, Pavement Marking and Channelization
7.2 - Lighting
7.3 - Signalization

Group 10 - Construction Engineering Inspection

10.1 - Roadway Construction Engineering Inspection
10.3 - Construction Materials Inspection
10.4 - Minor Bridge & Miscellaneous Structures CEI
10.5.1 - Major Bridge CEI - Concrete
10.5.2 - Major Bridge CEI - Steel

Group 11 - Engineering Contract Administration and Management

Group 13 - Planning

13.4 - Systems Planning
13.5 - Subarea/Corridor Planning
13.6 - Land Planning/Engineering

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2020 for contracting purposes.

Approved Rates

Home/ Branch Overhead	Field Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses	Home Direct Expense	Field Direct Expense
151.78%	129.69%	0.199%	Reimbursed	No	10.65%	10.65%*

*Rent and utilities excluded from field office rate. These costs will be directly reimbursed on contracts that require the consultant to provide field office.

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,

Carliayn Kell
Professional Services
Qualification Administrator

State of Florida
Department of State

I certify from the records of this office that TRANSYSTEMS CORPORATION CONSULTANTS is a Missouri corporation authorized to transact business in the State of Florida, qualified on November 2, 1995.

The document number of this corporation is F95000005361.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on January 10, 2019, and that its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Eighth day of March, 2019

Secretary of State

Tracking Number: 4292411347CU

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

Ron DeSantis, Governor

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

TRANSYSTEMS CORPORATION

TRANSYSTEMS CORPORATION CONSULTANTS
2400 PERSHING ROAD #400
KANSAS CITY MO 64108

LICENSE NUMBER: CA7503

EXPIRATION DATE: FEBRUARY 28, 2021

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Broward County Board of County Commissioners

PNC2119168P1

Ron DeSantis, Governor

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

TESTING, ENGINEERING & CONSULTING SERVICES, INC.

235 BUFORD DRIVE
LAWRENCEVILLE GA 30046

LICENSE NUMBER: CA30598

EXPIRATION DATE: FEBRUARY 28, 2021

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State of Florida
Department of State

I certify from the records of this office that SOUTHEASTERN ARCHAEOLOGICAL RESEARCH, INC. is a corporation organized under the laws of the State of Florida, filed on October 11, 1993, effective October 4, 1993.

The document number of this corporation is P93000072718.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on January 26, 2019, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Twenty-sixth day of January, 2019

GREAT SEAL OF THE STATE OF FLORIDA
IN GOD WE TRUST

Jennifer Kennedy
Secretary of State

Tracking Number: 9984067957CC

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

State of Florida
Department of State

I certify from the records of this office that STONER & ASSOCIATES, INC. is a corporation organized under the laws of the State of Florida, filed on September 13, 1988.

The document number of this corporation is M99107.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on February 11, 2019, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Eleventh day of February, 2019

GREAT SEAL OF THE STATE OF FLORIDA
IN GOD WE TRUST

Secretary of State

Tracking Number: 3880832646CC

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500
800HELPFLA(435-7352) or (850) 488-2221

February 21, 2019

STONER & ASSOCIATES INC
4341 SW 62ND AVE
DAVIE, FL 33314

PNC2119168P1
p. 447

SUBJECT: Professional Surveyor and Mapper Business Certificate # LB6633

Your application / renewal as a professional surveyor and mapper business as required by Chapter 472, Florida Statutes, has been received and processed.

The license appears below and is valid through February 28, 2021.

You are required to keep your information with the Board current. Please visit our website at www.800helpfla.com/psm to create your online account. If you have already created your online account, you can use the website to maintain your license. You can also find other valuable information on the website.

If you have any questions, please do not hesitate to call the Division of Consumer Services, Board of Professional Surveyors and Mappers at 800-435-7352 or 850-488-2221.

Broward County Board of
County Commissioners

Detach Here

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: **LB6633**
Expiration Date February 28, 2021

Professional Surveyor and Mapper Business License

Under the provisions of Chapter 472, Florida Statutes

STONER & ASSOCIATES INC
4341 SW 62ND AVE
DAVIE, FL 33314

Nicole Fried

NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

9/23/2019

9/23/2019

Broward County Board of County Commissioners

PNC2119168P1
p. 448

BROWARD COUNTY
FLORIDA

Office of Economic and Small Business Development

Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301 • 954-357-6400 • FAX 954-357-5674 • TTY 954-357-5664

This Certificate is Awarded to:

STONER & ASSOCIATES, INC.

As set forth in the Broward County Business Opportunity Act of 2012, the certification requirements have been met for:

County Business Enterprise (CBE)
Anniversary Date: June 19th

Authorized Representative

The Office of Economic and Small Business Development must be notified within 30 days of any material changes in the business which may affect ownership and control. Failure to do so may result in the revocation of this certificate and/or imposition of other sanctions.

A Service of the Broward County Board of County Commissioners
www.broward.org/smallbusiness

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2019 FLORIDA LIMITED LIABILITY COMPANY ANNUAL REPORT

FILED
Jan 02, 2019
Secretary of State
CC7137532411

DOCUMENT# L06000075775

Entity Name: COMPASS POINT SURVEYORS, PL

Current Principal Place of Business:

3195 N. POWERLINE ROAD
#112
POMPANO BEACH, FL 33069

Current Mailing Address:

3195 N. POWERLINE ROAD
#112
POMPANO BEACH, FL 33069 US

FEI Number: 20-5388139

Certificate of Status Desired: No

Name and Address of Current Registered Agent:

WISER, BENJAMIN R
3195 N. POWERLINE ROAD
#112
POMPANO BEACH, FL 33069 US

The above named entity submits this statement for the purpose of changing its registered office or registered agent, or both, in the State of Florida.

SIGNATURE: BENJAMIN R. WISER 01/02/2019

Electronic Signature of Registered Agent — Date

Authorized Person(s) Detail :

Title	MANAGER, PRINCIPAL	Title	PRINCIPAL
Name	WISER, BENJAMIN R	Name	REID, SCOTT
Address	3195 N. POWERLINE ROAD #112	Address	3195 N. POWERLINE ROAD #112
City-State-Zip:	POMPANO BEACH FL 33069	City-State-Zip:	POMPANO BEACH FL 33069

I hereby certify that the information indicated on this report or supplemental report is true and accurate and that my electronic signature shall have the same legal effect as if made under oath; that I am a managing member or manager of the limited liability company or the receiver or trustee empowered to execute this report as required by Chapter 605, Florida Statutes; and that my name appears above, or on an attachment with all other like empowered.

SIGNATURE: BENJAMIN WISER MANAGER 01/02/2019

Electronic Signature of Signing Authorized Person(s) Detail — Date

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500
800HELPFLA(435-7352) or (850) 488-2221

December 14, 2018

COMPASS POINT SURVEYORS PL
3195 N POWERLINE RD STE 112
POMPANO BEACH, FL 33069-1052

SUBJECT: Professional Surveyor and Mapper Business Certificate # LB7535

Your application / renewal as a professional surveyor and mapper business as required by Chapter 472, Florida Statutes, has been received and processed.

The license appears below and is valid through February 28, 2021.

You are required to keep your information with the Board current. Please visit our website at www.800helpfla.com/psm to create your online account. If you have already created your online account, you can use the website to maintain your license. You can also find other valuable information on the website.

If you have any questions, please do not hesitate to call the Division of Consumer Services, Board of Professional Surveyors and Mappers at 800-435-7352 or 850-488-2221.

Detach Here

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkway Tallahassee, Florida 32399-6500

License No.: **LB7535**
Expiration Date February 28, 2021

Professional Surveyor and Mapper Business License

Under the provisions of Chapter 472, Florida Statutes

COMPASS POINT SURVEYORS PL
3195 N POWERLINE RD STE 112
POMPANO BEACH, FL 33069-1052

ADAM H. PUTNAM
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes.

PNC2119168P1

Broward County Board of County Commissioners

p. 451

BidSync

9/23/2019

BROWARD COUNTY FLORIDA

Office of Economic and Small Business Development

Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301 • 954-357-6400 • FAX 954-357-5674 • TTY 954-357-5664

This Certificate is Awarded to:

COMPASS POINT SURVEYORS, PL

As set forth in the Broward County Business Opportunity Act of 2012, the certification requirements have been met for:

County Business Enterprise

Anniversary Date: March 20th

Authorized Representative

The Office of Economic and Small Business Development must be notified within 30 days of any material changes in the business which may affect ownership and control. Failure to do so may result in the revocation of this certificate and/or imposition of other sanctions.

A service of the Broward County Board of County Commissioners
www.broward.org/smallbusiness

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Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT, P.E.
SECRETARY

July 9, 2019

Raj Krishnasamy, President
TIERRA SOUTH FLORIDA, INC.
2765 Vista Parkway, Suite 10
West Palm Beach, Florida 33411

Dear Mr. Krishnasamy:

The Florida Department of Transportation has reviewed your application for prequalification package and determined that the data submitted is adequate to technically prequalify your firm for the following types of work:

Group 9 - Soil Exploration, Material Testing and Foundations

- 9.1 - Soil Exploration
- 9.2 - Geotechnical Classification Laboratory Testing
- 9.3 - Highway Materials Testing
- 9.4.1 - Standard Foundation Studies
- 9.4.2 - Non-Redundant Drilled Shaft Bridge Foundation Studies
- 9.5 - Geotechnical Specialty Laboratory Testing

Group 10 - Construction Engineering Inspection

- 10.1 - Roadway Construction Engineering Inspection
- 10.3 - Construction Materials Inspection

Your firm is now technically prequalified with the Department for Professional Services in the above referenced work types. The overhead audit has been accepted, and your firm may pursue projects in the referenced work types with fees of any dollar amount. This status shall be valid until June 30, 2020 for contracting purposes.

Approved Rates

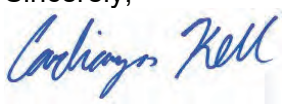
Home/ Branch Overhead	Field Overhead	Facilities Capital Cost of Money	Premium Overtime	Reimburse Actual Expenses	Home Direct Expense	Field Direct Expense	Published Fee Schedule
132.28%	74.78%*	1.562%	Reimbursed	No	11.24%	0.00%*^	Yes

*Interim Rates
^Rent and utilities excluded from field office rate. These costs will be directly reimbursed on contracts that require the consultant to provide field office.

Per Title 23, U.S. Code 112, there are restrictions on sharing indirect cost rates. Refer to Code for additional information.

Should you have any questions, please feel free to contact me by email at carliayn.kell@dot.state.fl.us or by phone at 850-414-4597.

Sincerely,



Carliayn Kell
Professional Services
Qualification Administrator

State of Florida
Department of State

I certify from the records of this office that TIERRA SOUTH FLORIDA, INC. is a corporation organized under the laws of the State of Florida, filed on October 7, 2003, effective October 17, 2003.

The document number of this corporation is P03000110144.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on January 2, 2019, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Second day of January, 2019

Ken Detzner

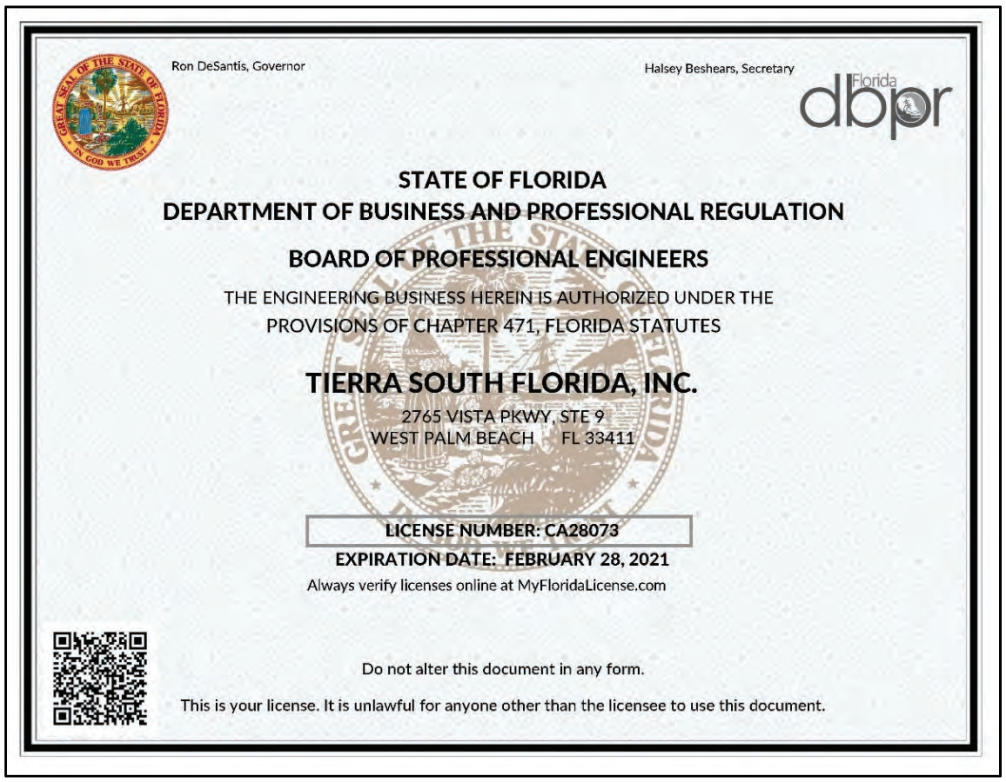
Secretary of State

Tracking Number: CC3550331283

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

Professional Licenses



Ron DeSantis, Governor

Halsey Beshears, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

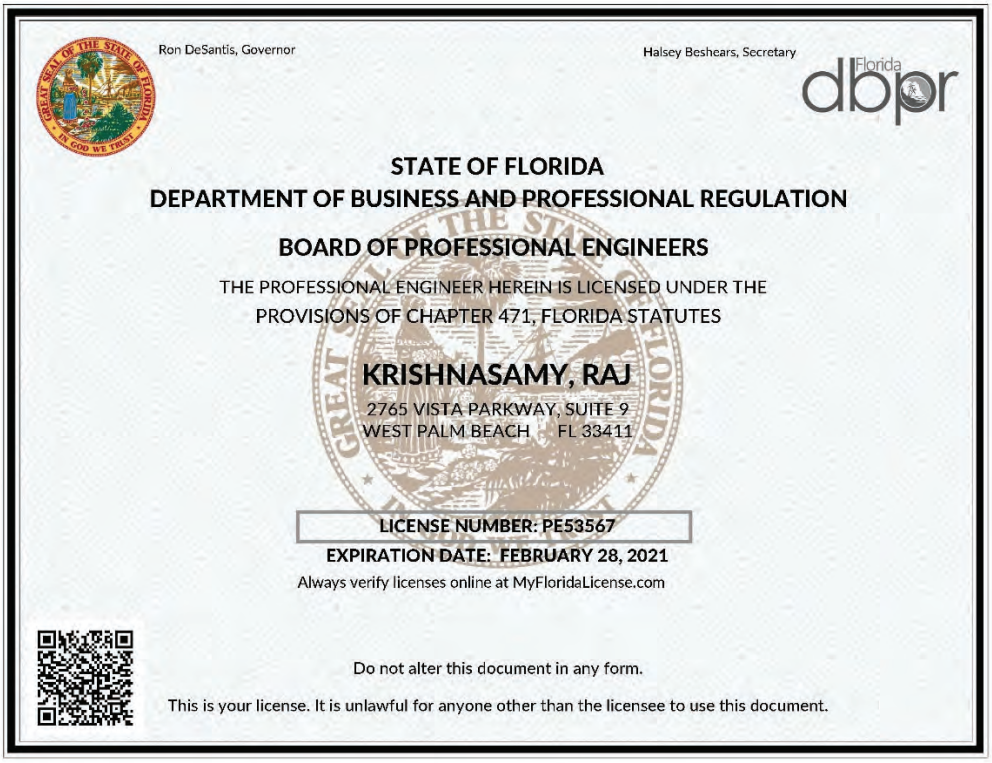
TIERRA SOUTH FLORIDA, INC.
2765 VISTA PKWY, STE 9
WEST PALM BEACH FL 33411

LICENSE NUMBER: CA28073
EXPIRATION DATE: FEBRUARY 28, 2021
Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Tierra South Florida, Inc., CA 28073; Expires 2/28/2021



Ron DeSantis, Governor

Halsey Beshears, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

KRISHNASAMY, RAJ
2765 VISTA PARKWAY, SUITE 9
WEST PALM BEACH FL 33411

LICENSE NUMBER: PE53567
EXPIRATION DATE: FEBRUARY 28, 2021
Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Raj Krishnasamy, P.E., FL P.E. 53567; Expires 2/28/2021

9/23/2019

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

BOARD OF LANDSCAPE ARCHITECTURE
2601 BLAIR STONE ROAD
TALLAHASSEE FL 32399-0783

(850) 487-1395

DULAND DESIGN LLC
DULAND DESIGN
737 NW 42ND AVE
PLANTATION FL 33317

Broward County Board of County Commissioners

Congratulations! With this license you become one of the nearly one million Floridians licensed by the Department of Business and Professional Regulation. Our professionals and businesses range from architects to yacht brokers, from boxers to barbeque restaurants, and they keep Florida's economy strong.

Every day we work to improve the way we do business in order to serve you better. For information about our services, please log onto **www.myfloridalicense.com**. There you can find more information about our divisions and the regulations that impact you, subscribe to department newsletters and learn more about the Department's initiatives.

Our mission at the Department is: License Efficiently, Regulate Fairly. We constantly strive to serve you better so that you can serve your customers. Thank you for doing business in Florida, and congratulations on your new license!

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND
PROFESSIONAL REGULATION

LC26000597 ISSUED: 09/27/2017

LANDSCAPE ARCHITECT BUSINESS
DULAND DESIGN LLC
DULAND DESIGN

HAS REGISTERED under the provisions of Ch.481 FS.
Expiration date : NOV 30, 2019 L1709270000908

DETACH HERE

PNC2119168P1
p. 456

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF LANDSCAPE ARCHITECTURE

LICENSE NUMBER
LC26000597

The LANDSCAPE ARCHITECT BUSINESS
Named below HAS REGISTERED
Under the provisions of Chapter 481 FS.
Expiration date: NOV 30, 2019

DULAND DESIGN LLC
DULAND DESIGN
737 NW 42ND AVE
PLANTATION FL 33317

ISSUED: 09/27/2017 DISPLAY AS REQUIRED BY LAW SEQ # L1709270000908

2019 FLORIDA LIMITED LIABILITY COMPANY ANNUAL REPORT

FILED
Feb 08, 2019
Secretary of State
7565770275CC

DOCUMENT# L13000102442

Entity Name: ADEPT PUBLIC RELATIONS, LLC

Current Principal Place of Business:

5300 POWERLINE ROAD
SUITE 207
FORT LAUDERDALE, FL 33309

Current Mailing Address:

5300 POWERLINE ROAD
SUITE 207
FORT LAUDERDALE, FL 33309 US

FEI Number: 46-3387296

Certificate of Status Desired: No

Name and Address of Current Registered Agent:

RUFFOLO, JULIE D
5300 POWERLINE ROAD
SUITE 207
FORT LAUDERDALE, FL 33309 US

The above named entity submits this statement for the purpose of changing its registered office or registered agent, or both, in the State of Florida.

SIGNATURE:

Electronic Signature of Registered Agent — Date

Authorized Person(s) Detail :

Title	MGRM	Title	MGRM
Name	RUFFOLO, JULIE D	Name	POLLITT, DANA L
Address	5300 POWERLINE ROAD SUITE 207	Address	5300 POWERLINE ROAD SUITE 207
City-State-Zip:	FORT LAUDERDALE FL 33309	City-State-Zip:	FORT LAUDERDALE FL 33309

I hereby certify that the information indicated on this report or supplemental report is true and accurate and that my electronic signature shall have the same legal effect as if made under oath; that I am a managing member or manager of the limited liability company or the receiver or trustee empowered to execute this report as required by Chapter 605, Florida Statutes; and that my name appears above, or on an attachment with all other like empowered.

SIGNATURE: JULIE RUFFOLO MGR 02/08/2019

Electronic Signature of Signing Authorized Person(s) Detail — Date

OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT
Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301
954-357-6400 • FAX 954-357-5674 • TTY 954-357-5664

November 16, 2017

Ms. Julie Ruffolo
ADEPT PUBLIC RELATIONS, LLC
5300 Powerline Road, Suite 207
Fort Lauderdale, Florida 33309

Dear Ms. Ruffolo:

The Broward County Office of Economic and Small Business Development is pleased to announce that your firm's **County Business Enterprise** and **Small Business Enterprise** certification have been renewed.

Your firm's certification is continuing from your anniversary date, but is contingent upon the firm verifying its eligibility annually through this office. You will be notified in advance of your obligation to continue eligibility in a timely fashion. However, the responsibility to assure continued certification is yours. Failure to document your firm's continued eligibility for the CBE and SBE program within **thirty (30) days** from your anniversary may result in the expiration of your firm's certification. Should you continue to be interested in certification after it has expired, you will need to submit a new application and all required supporting documentation for review.

To review current Broward County Government bid opportunities visit: www.broward.org/Purchasing and click on "Current Solicitations and Results." Also, from this website, you can log into your firm's profile in BidSync to ensure you have added all appropriate classification codes. Bid opportunities over $3,500 will be advertised to vendors via e-mail and according to classification codes, so please ensure that both the Purchasing Division and OESBD are apprised of your current e-mail address.

Your primary certification group is: **Contract Services.** This is also how your listing in our directory will read. You may access your firm's listing by visiting the Office of Economic and Small Business Development Directory, located on the internet at: www.broward.org/EconDev and click on "Certified Firm Directories."

Your firm may compete for, and perform work on Broward County projects in the following areas:

NAICS CODE: 541613, 541618, 541820, 541611, 561110, 561410, 541910, 541860, 541810

We look forward to working with you to achieve greater opportunities for your business through county procurement.

Sincerely,

Sandy-Michael McDonald, Director
Office of Economic and Small Business Development

Cert Agency: BC-CBE SBE
ANNIVERSARY DATE: SEPTEMBER 21ST

9/23/2019

Office of Economic and Small Business Development

Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301 • 954-357-6400 • FAX 954-357-5674 • TTY 954-357-5664

This Certificate is Awarded to:

ADEPT PUBLIC RELATIONS, LLC

As set forth in the Broward County Business Opportunity Act of 2012, the certification requirements have been met for:

County Business Enterprise
Small Business Enterprise
Anniversary Date: September 21st

Authorized Representative

The Office of Economic and Small Business Development must be notified within 30 days of any material changes in the business which may affect ownership and control. Failure to do so may result in the revocation of this certificate and/or imposition of other sanctions.

A Service of the Broward County Board of County Commissioners
www.broward.org/smallbusiness

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BidSync

Broward County Board of County Commissioners

PNC2119168P1

EVALUATION CRITERIA

Additional Information:

Subcontractors/Subconsultants/Suppliers Requirement Forms

PNC2119168P1 | Continuing Engineering Services for Traffic, Roadway, and Civil Projects

A. The Vendor shall submit a listing of all subcontractors, subconsultants and major f suppliers (firms), if any, and the portion of the contract they will perform. A major m supplier is considered any firm that provides construction material for construction co or commodities for service contracts in excess of $50,000, to the Vendor.

B. If participation goals apply to the contract, only non-certified firms shall be identified form. A non-certified firm is a firm that is not listed as a firm for attainment of partic goals (ex. County Business Enterprise or Disadvantaged Business Enterprise), if app to the solicitation.

C. This list shall be kept up-to-date for the duration of the contract. If subcontra subconsultants or suppliers are stated, this does not relieve the Vendor from the responsibility of full and complete satisfactory performance under any awarded contra

D. After completion of the contract/final payment, the Vendor shall certify the final list certified subcontractors, subconsultants, and suppliers that performed or provided s to the County for the referenced contract.

E. The Vendor has confirmed that none of the recommended subcontractors, subconsulta suppliers' principal(s), officer(s), affiliate(s) or any other related companies have debarred from doing business with Broward County or any other governmental agency

If none, state "none" on this form. Use additional sheets as needed. Vendor should scan and any additional form(s) in BidSync.

1. Subcontracted Firm's Name:

Subcontracted Firm's Address:

EBS Engineering, Inc.

Subcontracted Firm's Telephone Number:

1911 NW 150 Avenue, Suite 202

Contact Person's Name and Position:

954-397-7787

Contact Person's E-Mail Address:

Benjamin S. Essien | President

bsessien@ebsengineering.com

Estimated Subcontract/Supplies Contract Amount:

$270,000.00

Type of Work/Supplies Provided:

Civil Engineering / Roadway Design / CEI

2. S

S

Subcontracted Firm's Telephone Number:

2. Subcontracted Firm's Name: Keith & Associates, Inc.

Subcontracted Firm's Address: 301 East Atlantic Blvd., Pompano Beach, FL 33060

Subcontracted Firm's Telephone Number: 954-788-3400

Contact Person's Name and Position: Alex Lazowick | Executive Vice President

Contact Person's E-Mail Address: alazowick@keithteam.com

Estimated Subcontract/Supplies Contract Amount: $180,000.00

Type of Work/Supplies Provided: Civil Engineering / Roadway Design / Utility Coordination / SUE / CEI

3. Subcontracted Firm's Name: HP Consultants, Inc.

Subcontracted Firm's Address: 444 Inverrary Boulevard, Lauderhill, FL 33319

Subcontracted Firm's Telephone Number: 954-278-6388

Contact Person's Name and Position: A. S. Kumbhojkar, Ph.D., PE | President

Contact Person's E-Mail Address: hpconsultantsinc@earthlink.net

Estimated Subcontract/Supplies Contract Amount: $450,000.00

Type of Work/Supplies Provided: Traffic Engineering / ITS / Geotechnical

4. Subcontracted Firm's Name: F&J Engineering Group, Inc.

Subcontracted Firm's Address: 8761 North Lake Dasha Drive, Plantation, FL 33324

Subcontracted Firm's Telephone Number: 786-385-2372

Contact Person's Name and Position: Francis R. Chin, Jr. | President

Contact Person's E-Mail Address: fchin@fj-group.com

Estimated Subcontract/Supplies Contract Amount: $270,000.00

Type of Work/Supplies Provided: CEI Support Services

5. Subcontracted Firm's Name: Florida Engineering & Testing, Inc.

Subcontracted Firm's Address: 250 S.W. 13th Avenue, Pompano Beach, FL 33069

Subcontracted Firm's Telephone Number: 954-781-6889

Contact Person's Name and Position: Christine Chang | Senior Vice President

Contact Person's E-Mail Address: cchang@fla-eng.com

Estimated Subcontract/Supplies Contract Amount: $180,000.00

Type of Work/Supplies Provided: Construction Materials Testing

6. Subcontracted Firm's Name: Albeck Gerken, Inc. (*an Iteris Company*)

Subcontracted Firm's Address: 1907 N US Hwy 301, Suite 120, Tampa, FL 33619

Subcontracted Firm's Telephone Number: 813-319-3790

Contact Person's Name and Position: Brian Gerken | Director of Business Operations

Contact Person's E-Mail Address: bgerken@albeckgerken.com

Estimated Subcontract/Supplies Contract Amount: $90,000.00

Type of Work/Supplies Provided: ITS & ATMS Design / Signal Migration

7. Subcontracted Firm's Name: Wantman Group, Inc.

Subcontracted Firm's Address: 2035 Vista Parkway, West Palm Beach, FL 33411

Subcontracted Firm's Telephone Number: 561-687-2220

Contact Person's Name and Position: Manny Then, PE | Transportation Project Principal

Contact Person's E-Mail Address: Manny.Then@wginc.com

Estimated Subcontract/Supplies Contract Amount: $90,000.00

Type of Work/Supplies Provided: Complete Streets / Survey / SUE

8. Subcontracted Firm's Name: BMA Consulting Engineering, Inc.

Subcontracted Firm's Address: 18503 Pines Boulevard, #210, Pembroke Pines, FL 33029

Subcontracted Firm's Telephone Number: 954-744-4691

Contact Person's Name and Position: Jesus Mustafa, PE | Director

Contact Person's E-Mail Address: jmustafa@bma-ce.com

Estimated Subcontract/Supplies Contract Amount: $450,000.00

Type of Work/Supplies Provided: Signalization / Intersection Design / Miscellaneous Structures

9. Subcontracted Firm's Name: TranSystems Corporation

Subcontracted Firm's Address: 3230 West Commercial Boulevard, Suite 450, Fort Lauderdale, FL 33309

Subcontracted Firm's Telephone Number: 954-653-4700

Contact Person's Name and Position: Stave Shaup | Senior Structural Engineer

Contact Person's E-Mail Address: sashaup@transystems.com

Estimated Subcontract/Supplies Contract Amount: $45,000.00

Type of Work/Supplies Provided: Mechanical Bridge Inspection / Miscellaneous Structures

10. Subcontracted Firm's Name: Testing, Engineering & Consulting Services, Inc. (*an SGS Company*)

Subcontracted Firm's Address: 235 Buford Drive, Lawrenceville, GA 30046

Subcontracted Firm's Telephone Number: 770-995-8000

Contact Person's Name and Position: James McCants | Laboratory Manager

Contact Person's E-Mail Address: James.McCants@sgs.com

Estimated Subcontract/Supplies Contract Amount: $45,000.00

Type of Work/Supplies Provided: Concrete Cast Beams Testing

11. Subcontracted Firm's Name: Southeastern Archaeological Research Inc.

Subcontracted Firm's Address: 3117 Edgewater Drive, Orlando, FL 32804

Subcontracted Firm's Telephone Number: 407-236-7711

Contact Person's Name and Position: Beth Chambless | Senior Project Manager, Transportation Group Leader

Contact Person's E-Mail Address: beth.chambless@searchinc.com

Estimated Subcontract/Supplies Contract Amount: $45,000.00

Type of Work/Supplies Provided: Cultural Resources

12. Subcontracted Firm's Name: Stoner & Associates, Inc.

Subcontracted Firm's Address: 4341 Southwest 62nd Avenue, Davie, Florida 33314

Subcontracted Firm's Telephone Number: 954-585-0997

Contact Person's Name and Position: Leigh Ann Stoner | Office Manager

Contact Person's E-Mail Address: lstoner@stonersurveyors.com

Estimated Subcontract/Supplies Contract Amount: $270,000.00

Type of Work/Supplies Provided: Survey & Mapping

13. Subcontracted Firm's Name: Compass Point Surveyors, PL.

Subcontracted Firm's Address: 3195 N Powerline Road, Suite 112, Pompano Beach, FL 33069

Subcontracted Firm's Telephone Number: 954-332-8181

Contact Person's Name and Position: Benjamin Wiser | Manager

Contact Person's E-Mail Address: brw@cp-surveyors.com

Estimated Subcontract/Supplies Contract Amount: $180,000.00

Type of Work/Supplies Provided: SUE

14. Subcontracted Firm's Name: Tierra South Florida, Inc.

Subcontracted Firm's Address: 2765 Vista Parkway, Suite 10, West Palm Beach, FL 33411

Subcontracted Firm's Telephone Number: 561-687-8536

Contact Person's Name and Position: Raj Krishnasamy, PE | President

Contact Person's E-Mail Address: raj@tsfgeo.com

Estimated Subcontract/Supplies Contract Amount: $45,000.00

Type of Work/Supplies Provided: Geotechnical / CEI

15. Subcontracted Firm's Name: Duland Design, LLC.

Subcontracted Firm's Address: 811 E. Las Olas Boulevard, Suite 4, Fort Lauderdale, FL 33301

Subcontracted Firm's Telephone Number: 945-866-0066

Contact Person's Name and Position: Chang Du, RLA | Principal

Contact Person's E-Mail Address: cdu@dulanddesign.com

Estimated Subcontract/Supplies Contract Amount: $90,000.00

Type of Work/Supplies Provided: Landscape Architecture

16. Subcontracted Firm's Name: ADEPT Public Relations, LLC.

Subcontracted Firm's Address: 5300 Powerline Road, Suite 207, Fort Lauderdale, FL 33309

Subcontracted Firm's Telephone Number: 954-769-1533

Contact Person's Name and Position: Julie Ruffolo | Partner

Contact Person's E-Mail Address: Julie@ADEPT.co

Estimated Subcontract/Supplies Contract Amount: $90,000.00

Type of Work/Supplies Provided: Public Involvement

EVALUATION CRITERIA

Additional Information:

CBE Letter of Intent Forms

PNC2119168P1 | Continuing Engineering Services for Traffic, Roadway, and Civil Projects

LETTER OF INTENT

BETWEEN BIDDER/OFFEROR AND COUNTY BUSINESS ENTERPRISE (CBE) FIRM/SUPPLIER

This form is to be completed and signed for each CBE firm. If the PRIME is a CBE firm, please indicate the percentage performing with your own forces.

Solicitation No.: PNC2119168P1

Project Title: Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Bidder/Offeror Name: Metric Engineering, Inc.

Address: 525 Technology Park, Suite 153 City: Lake Mary State: FL Zip: 32746

Authorized Representative: Dale W. Cody, PE, PTOE Phone: 407-644-1898

CBE Firm/Supplier Name: EBS Engineering, Inc.

Address: 1911 NW 150 Avenue, Suite 202 City: Pembroke Pines State: FL Zip: 33028

Authorized Representative: Benjamin S. Essien Phone: 305-336-0049

A. This is a letter of intent between the bidder/offeror on this project and a CBE firm for the CBE to perform work on this project.

B. By signing below, the bidder/offeror is committing to utilize the above-named CBE to perform the work described below.

C. By signing below, the above-named CBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and CBE affirm that if the CBE subcontracts any of the work described below, it may only subcontract that work to another CBE.

Work to be performed by CBE Firm

Description	NAICS[1]	CBE Contract Amount[2]	CBE Percentage of Total Project Value
Engineering Consulting	541330	$270,000.00	3.00 %
			%
			%

AFFIRMATION: I hereby affirm that the information above is true and correct.

CBE Firm/Supplier Authorized Representative

Signature: _____ Title: President Date: 08/28/2019

Bidder/Offeror Authorized Representative

Signature: _____ Title: Senior Vice President Date: 09/11/2019

[1] Visit Census.gov and select NAICS to search and identify the correct codes. Match type of work with NAICS code as closely as possible.

[2] To be provided only when the solicitation requires that bidder/offeror include a dollar amount in its bid/offer.

In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

Rev.: June 2018 **Compliance Form No. 004**

BROWARD COUNTY FLORIDA
OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT

LETTER OF INTENT

BETWEEN BIDDER/OFFEROR AND COUNTY BUSINESS ENTERPRISE (CBE) FIRM/SUPPLIER

This form is to be completed and signed for each CBE firm. If the PRIME is a CBE firm, please indicate the percentage performing with your own forces.

Solicitation No.: PNC2119168P1

Project Title: Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Bidder/Offeror Name: Metric Engineering, Inc.

Address: 525 Technology Park, Suite 153 City: Lake Mary State: FL Zip: 32746

Authorized Representative: Dale W. Cody, PE, PTOE Phone: 407-644-1898

CBE Firm/Supplier Name: HP Consultants Inc.

Address: 4444 Inverrary Blvd. City: Lauderhill State: FL Zip: 33319

Authorized Representative: A. S. Kumbhojkar, Ph.D., P.E., F. ASCE Phone: 954-278-6388

A. This is a letter of intent between the bidder/offeror on this project and a CBE firm for the CBE to perform work on this project.

B. By signing below, the bidder/offeror is committing to utilize the above-named CBE to perform the work described below.

C. By signing below, the above-named CBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and CBE affirm that if the CBE subcontracts any of the work described below, it may only subcontract that work to another CBE.

Work to be performed by CBE Firm

Description	NAICS[1]	CBE Contract Amount[2]	CBE Percentage of Total Project Value
Geotechnical testing laboratories or services	541380	$450,000.00	%
Traffic engineering consulting services	541330		5.00 %
Civil engineering consulting services	541330		%

AFFIRMATION: I hereby affirm that the information above is true and correct.

CBE Firm/Supplier Authorized Representative

Signature: Arvind S Kumbhojkar Title: President Date: 09/04/2019

Bidder/Offeror Authorized Representative

Signature: [signature] Title: Senior Vice President Date: 09/11/2019

[1] Visit Census.gov and select NAICS to search and identify the correct codes. Match type of work with NAICS code as closely as possible.

[2] To be provided only when the solicitation requires that bidder/offeror include a dollar amount in its bid/offer.

In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

Rev.: June 2018 **Compliance Form No. 004**

BROWARD COUNTY FLORIDA
OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT

LETTER OF INTENT

BETWEEN BIDDER/OFFEROR AND COUNTY BUSINESS ENTERPRISE (CBE) FIRM/SUPPLIER

This form is to be completed and signed for each CBE firm. If the PRIME is a CBE firm, please indicate the percentage performing with your own forces.

Solicitation No.: PNC2119168P1

Project Title: Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Bidder/Offeror Name: Metric Engineering, Inc.

Address: 525 Technology Park, Suite 153 City: Lake Mary State: FL Zip: 32746

Authorized Representative: Dale W. Cody, PE, PTOE Phone: 407-644-1898

CBE Firm/Supplier Name: F&J Engineering Group, Inc.

Address: 8761 N Lake Dasha Drive City: Plantation State: FL Zip: 33324

Authorized Representative: Francis R. Chin Jr. Phone: 786-385-2372

A. This is a letter of intent between the bidder/offeror on this project and a CBE firm for the CBE to perform work on this project.

B. By signing below, the bidder/offeror is committing to utilize the above-named CBE to perform the work described below.

C. By signing below, the above-named CBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and CBE affirm that if the CBE subcontracts any of the work described below, it may only subcontract that work to another CBE.

Work to be performed by CBE Firm

Description	NAICS[1]	CBE Contract Amount[2]	CBE Percentage of Total Project Value
CEI Inspection	541380	$ 270,000.00	3.00 %
			%
			%

AFFIRMATION: I hereby affirm that the information above is true and correct.

CBE Firm/Supplier Authorized Representative

Signature: _____ Title: President Date: 09/06/2019

Bidder/Offeror Authorized Representative

Signature: _____ Title: Senior Vice President Date: 09/11/2019

[1] Visit Census.gov and select NAICS to search and identify the correct codes. Match type of work with NAICS code as closely as possible.

[2] To be provided only when the solicitation requires that bidder/offeror include a dollar amount in its bid/offer.

In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

Rev.: June 2018 **Compliance Form No. 004**

BROWARD COUNTY FLORIDA
OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT

LETTER OF INTENT

BETWEEN BIDDER/OFFEROR AND COUNTY BUSINESS ENTERPRISE (CBE) FIRM/SUPPLIER

This form is to be completed and signed for each CBE firm. If the PRIME is a CBE firm, please indicate the percentage performing with your own forces.

Solicitation No.: PNC2119168P1

Project Title: Cont Civil Eng for Traffic, Roadway & Civil Projects

Bidder/Offeror Name: Metric Engineering, Inc

Address: 525 Technology Pk; Ste 153 City: Lake Mary State: FL Zip: 32746

Authorized Representative: Dale W. Cody, PE, PTOE Phone: 407 644-1898

CBE Firm/Supplier Name: Florida Engineering & Testing, Inc

Address: 250 SW 13th Avenue City: Pompano Bch State: FL Zip: 33069

Authorized Representative: Christine Chang, SVP Phone: 954 781 6889

A. This is a letter of intent between the bidder/offeror on this project and a CBE firm for the CBE to perform work on this project.

B. By signing below, the bidder/offeror is committing to utilize the above-named CBE to perform the work described below.

C. By signing below, the above-named CBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and CBE affirm that if the CBE subcontracts any of the work described below, it may only subcontract that work to another CBE.

Work to be performed by CBE Firm

Description	NAICS[1]	CBE Contract Amount[2]	CBE Percentage of Total Project Value
CMT & Geotech Engineering	541380	$180,000.00	2.00 %
			%
			%

AFFIRMATION: I hereby affirm that the information above is true and correct.

CBE Firm/Supplier Authorized Representative

Signature: _____ Title: SVP Date: 9/10/19

Bidder/Offeror Authorized Representative

Signature: _____ Title: Senior Vice President Date: 09/11/2019

[1] Visit Census.gov and select NAICS to search and identify the correct codes. Match type of work with NAICS code as closely as possible.

[2] To be provided only when the solicitation requires that bidder/offeror include a dollar amount in its bid/offer.

In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

Rev.: June 2018

Compliance Form No. 004

BROWARD COUNTY FLORIDA
OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT

LETTER OF INTENT

BETWEEN BIDDER/OFFEROR AND COUNTY BUSINESS ENTERPRISE (CBE) FIRM/SUPPLIER

This form is to be completed and signed for each CBE firm. If the PRIME is a CBE firm, please indicate the percentage performing with your own forces.

Solicitation No.: PNC2119168P1

Project Title: Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Bidder/Offeror Name: Metric Engineering, Inc.

Address: 525 Technology Park, Suite 153 City: Lake Mary State: FL Zip: 32746

Authorized Representative: Dale W. Cody, PE, PTOE Phone: (407) 644-1898

CBE Firm/Supplier Name: BMA Consulting Engineering, Inc.

Address: 18503 Pines Blvd. Suite 210 City: Pembroke Pines State: FL Zip: 33029

Authorized Representative: Jesus A. Mustafa, PE, Director Phone: (954) 744-4691

A. This is a letter of intent between the bidder/offeror on this project and a CBE firm for the CBE to perform work on this project.

B. By signing below, the bidder/offeror is committing to utilize the above-named CBE to perform the work described below.

C. By signing below, the above-named CBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and CBE affirm that if the CBE subcontracts any of the work described below, it may only subcontract that work to another CBE.

Work to be performed by CBE Firm

Description	NAICS[1]	CBE Contract Amount[2]	CBE Percentage of Total Project Value
Structures	541330	$450,000.00	%
Signalization	541330		5.00 %
Drainage	541330		%

AFFIRMATION: I hereby affirm that the information above is true and correct.

CBE Firm/Supplier Authorized Representative

Signature: Jesus A Mustafa 2019.08.29 15:14:18 -04'00' Title: Director Date: 08/29/2019

Bidder/Offeror Authorized Representative

Signature: [signature] Title: Senior Vice President Date: 09/11/2019

[1] Visit Census.gov and select NAICS to search and identify the correct codes. Match type of work with NAICS code as closely as possible.

[2] To be provided only when the solicitation requires that bidder/offeror include a dollar amount in its bid/offer.

In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

Rev.: June 2018 **Compliance Form No. 004**

LETTER OF INTENT

BETWEEN BIDDER/OFFEROR AND COUNTY BUSINESS ENTERPRISE (CBE) FIRM/SUPPLIER

This form is to be completed and signed for each CBE firm. If the PRIME is a CBE firm, please indicate the percentage performing with your own forces.

Solicitation No.: PNC2119168P1

Project Title: Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Bidder/Offeror Name: Metric Engineering, Inc.

Address: 525 Technology Park, Suite 153 City: Lake Mary State: FL Zip: 32746

Authorized Representative: Dale W. Cody, PE, PTOE Phone: 407-644-1898

CBE Firm/Supplier Name: Stoner & Associates, Inc.

Address: 4341 SW 62 Ave City: Davie State: FL Zip: 33314

Authorized Representative: James D. Stoner, PSM, President Phone: (954)585-0997

A. This is a letter of intent between the bidder/offeror on this project and a CBE firm for the CBE to perform work on this project.

B. By signing below, the bidder/offeror is committing to utilize the above-named CBE to perform the work described below.

C. By signing below, the above-named CBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and CBE affirm that if the CBE subcontracts any of the work described below, it may only subcontract that work to another CBE.

Work to be performed by CBE Firm

Description	NAICS[1]	CBE Contract Amount[2]	CBE Percentage of Total Project Value
Land Surveying	541370	$270,000.00	3.00 %
			%
			%

AFFIRMATION: I hereby affirm that the information above is true and correct.

CBE Firm/Supplier Authorized Representative

Signature: _____ Title: President Date: 09/04/2019

Bidder/Offeror Authorized Representative

Signature: _____ Title: Senior Vice President Date: 09/11/2019

[1] Visit Census.gov and select NAICS to search and identify the correct codes. Match type of work with NAICS code as closely as possible.

[2] To be provided only when the solicitation requires that bidder/offeror include a dollar amount in its bid/offer.

In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

Rev.: June 2018

Compliance Form No. 004

BROWARD COUNTY FLORIDA
OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT

LETTER OF INTENT
BETWEEN BIDDER/OFFEROR AND COUNTY BUSINESS ENTERPRISE (CBE) FIRM/SUPPLIER

This form is to be completed and signed for each CBE firm. If the PRIME is a CBE firm, please indicate the percentage performing with your own forces.

Solicitation No.: PNC 2119168 P1

Project Title: Broward County Continuing Services Contract

Bidder/Offeror Name: Metric Engineering, Inc.

Address: 525 Technology Park, Suite 153 City: Lake Mary State: FL Zip: 32746

Authorized Representative: Dale W. Cody, PE, PTOE Phone: 407-644-1898

CBE Firm/Supplier Name: Compass Point Surveyors, PL

Address: 3195 N. Powerline Road #112 City: Pompano Beach State: FI Zip: 33069

Authorized Representative: Benjamin Wiser Phone: 954-332-8181

A. This is a letter of intent between the bidder/offeror on this project and a CBE firm for the CBE to perform work on this project.

B. By signing below, the bidder/offeror is committing to utilize the above-named CBE to perform the work described below.

C. By signing below, the above-named CBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and CBE affirm that if the CBE subcontracts any of the work described below, it may only subcontract that work to another CBE.

Work to be performed by CBE Firm

Description	NAICS[1]	CBE Contract Amount[2]	CBE Percentage of Total Project Value
Survey Layout & AsBuilts	541370	$180,000.00	2.00 %
			%
			%

AFFIRMATION: I hereby affirm that the information above is true and correct.

CBE Firm/Supplier Authorized Representative

Signature: _____ Title: Manager Date: 09/09/2019

Bidder/Offeror Authorized Representative

Signature: _____ Title: Senior Vice President Date: 09/11/2019

[1] Visit Census.gov and select NAICS to search and identify the correct codes. Match type of work with NAICS code as closely as possible.
[2] To be provided only when the solicitation requires that bidder/offeror include a dollar amount in its bid/offer.

In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

Rev.: June 2018 **Compliance Form No. 004**

BROWARD COUNTY FLORIDA
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LETTER OF INTENT

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This form is to be completed and signed for each CBE firm. If the PRIME is a CBE firm, please indicate the percentage performing with your own forces.

Solicitation No.: PNC2119168P1

Project Title: Continuing Engineering Services for Traffic, Roadway, and Civil Projects

Bidder/Offeror Name: Metric Engineering

Address: 525 Technology Park, Suite 153 City: Lake Mary State: FL Zip: 32746

Authorized Representative: Dale W. Cody, PE, PTOE Phone: 4076441898

CBE Firm/Supplier Name: DULAND DESIGN LLC

Address: 811 E. Las Olas Blvd., Suite 4 City: Fort Lauderdale State: FL Zip: 33301

Authorized Representative: Chang Du Phone: 9548660066

A. This is a letter of intent between the bidder/offeror on this project and a CBE firm for the CBE to perform work on this project.

B. By signing below, the bidder/offeror is committing to utilize the above-named CBE to perform the work described below.

C. By signing below, the above-named CBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and CBE affirm that if the CBE subcontracts any of the work described below, it may only subcontract that work to another CBE.

Work to be performed by CBE Firm

Description	NAICS[1]	CBE Contract Amount[2]	CBE Percentage of Total Project Value
Landscape Architecture	541320, 541340	$90,000.00	1.00 %
	541611, 541620		%
			%

AFFIRMATION: I hereby affirm that the information above is true and correct.

CBE Firm/Supplier Authorized Representative

Signature: _____ Title: PRINCIPAL Date: 2019.09.10

Bidder/Offeror Authorized Representative

Signature: _____ Title: Senior Vice President Date: 09/11/19

[1] Visit Census.gov and select NAICS to search and identify the correct codes. Match type of work with NAICS code as closely as possible.

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Rev.: June 2018

Compliance Form No. 004

BROWARD COUNTY FLORIDA
OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT

LETTER OF INTENT

BETWEEN BIDDER/OFFEROR AND COUNTY BUSINESS ENTERPRISE (CBE) FIRM/SUPPLIER

This form is to be completed and signed for each CBE firm. If the PRIME is a CBE firm, please indicate the percentage performing with your own forces.

Solicitation No.: PNC2119168P1

Project Title: Continuing Engineering Services for Traffic, Roadway and Civil Projects

Bidder/Offeror Name: Metric Engineering

Address: 525 Technology Park, Suite 153 City: Lake Mary State: FL Zip: 32746

Authorized Representative: Dale W. Cody, PE, PTOE Phone: 407-644-1898

CBE Firm/Supplier Name: ADEPT Public Relations, LLC

Address: 5300 Powerline Road, Suite 207 City: Fort Lauderdale State: FL Zip: 33309

Authorized Representative: Julie Ruffolo Phone: 954-769-1533

A. This is a letter of intent between the bidder/offeror on this project and a CBE firm for the CBE to perform work on this project.

Text

B. By signing below, the bidder/offeror is committing to utilize the above-named CBE to perform the work described below.

C. By signing below, the above-named CBE is committing to perform the work described below.

D. By signing below, the bidder/offeror and CBE affirm that if the CBE subcontracts any of the work described below, it may only subcontract that work to another CBE.

Work to be performed by CBE Firm

Description	NAICS[1]	CBE Contract Amount[2]	CBE Percentage of Total Project Value
Public Involvement/Outreach	541820	$90,000.00	%
Document Preparation Services	561410		1.00 %
Admin and General Management	541611		%

AFFIRMATION: I hereby affirm that the information above is true and correct.

CBE Firm/Supplier Authorized Representative

Signature: _____ Title: Managing Partner Date: 09/03/19

Bidder/Offeror Authorized Representative

Signature: _____ Title: Senior Vice President Date: 09/11/19

[1] Visit Census.gov and select NAICS to search and identify the correct codes. Match type of work with NAICS code as closely as possible.

[2] To be provided only when the solicitation requires that bidder/offeror include a dollar amount in its bid/offer.

In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

Rev.: June 2018

Compliance Form No. 004

EVALUATION CRITERIA

Additional Information:

Litigation History Forms

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☐ There are no material cases for this Vendor; or

☒ Material Case(s) are disclosed below:

Is this for a: (check type) ☒ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Metric Engineering, Inc. Or No ☐
Party	
Case Number, Name, and Date Filed	2019-CA-000148; Mary Vest Renfroe and Lonnie C. Renfroe, Plantiff vs. Florida Department of Transportation, Dragados, USA Inc., Prince Contracting LLC, and Metric Engineering Inc., Defendants; March 2019
Name of Court or other tribunal	In the Circuit Court of the First Judicial Circuit in and for Santa Rosa County, Florida
Type of Case	Bankruptcy ☐ Civil ☒ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	Allegation of negligence, plaintiff's accident on 6/21/2017
Brief description of the Subject Matter and Project Involved	2015 contract with FDOT Contract #C9J23: CEI Services for State Road 8 (I-10) from Escambia Bay Bridge to East of State Road 281 (Avalon Boulevard) in Santa Rosa County, Florida
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☒ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Morgan & Morgan, Wyatt M. Oakey, Esq. Email: woakey@forthepeople.com Telephone Number: 850-316-9100

Vendor Name: Metric Engineering, Inc.

Continued on Next Page

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☐ There are no material cases for this Vendor; or

☒ Material Case(s) are disclosed below:

Is this for a: (check type) ☒ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Metric Engineering, Inc. Or No ☐
Party	
Case Number, Name, and Date Filed	2015-CA-002185; Ronald C. Stevenson, Plaintiff vs. Anderson Columbia CO., Inc., Metric Engineering, Inc., Porter Construction CO., and James Travis Baxter, Defendents; July 2017
Name of Court or other tribunal	In the Circuit Court of the First Judicial Circuit in and for Okaloosa County, Florida
Type of Case	Bankruptcy ☐ Civil ☒ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	Allegation of negligence, plaintiff's accident on 7/1/2013
Brief description of the Subject Matter and Project Involved	2011 contract with FDOT Contract #C-9362: CEI Services for State Road 189 (Lewis Turner Boulevard) from Robert's Boulevard to State Road 397 (Eglin Parkway) in Okaloosa County, Florida
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☒ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Wesley, McGrail & Wesley; Woodburn S. Wesley Jr., Esq. Email: woody@wmw-law.com Telephone Number: 850-244-0999

Vendor Name: Metric Engineering, Inc.

Continued on Next Page

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☐ There are no material cases for this Vendor; or

☒ Material Case(s) are disclosed below:

Is this for a: (check type) ☒ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Metric Engineering, Inc. Or No ☐
Party	
Case Number, Name, and Date Filed	17-001563-CA-01; Florida Sol Systems, Inc., Plaintiff/Conterclaim-Defendant, Metric Engineering Inc., Counterclaim-Defendant vs. International Fidelity Insurance Company, a foreign corporation, Defendants; February 2017
Name of Court or other tribunal	In the Circuit Court 11th Judicial Circuit in and for Miami-Dade County, Florida
Type of Case	Bankruptcy ☐ Civil ☒ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	Allegation of inaccurate drilled shaft inspections and reporting by Metric's geotechnical subconsultant (Geosol Inc.)
Brief description of the Subject Matter and Project Involved	2013 contract with World Fiber Technologies for Miami-Dade Expressway Authority's Design Build Project Contract #RFP 13-04
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☒ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Etcheverry Harrison LLP Email: etcheverry@etchlaw.com Telephone Number: 954-370-1681

Vendor Name: Metric Engineering, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: EBS Engineering, Inc.

Supplier Response Form

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☐ There are no material cases for this Vendor; or
☑ Material Case(s) are disclosed below:

Is this for a: (check type) ☑ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Keith and Associates, Inc. Or No ☐
Party	
Case Number, Name, and Date Filed	Case No. 14-14525(12) E-Filed 01/26/2016
Name of Court or other tribunal	Circuit of the 17th Judicial Court in and for Broward (
Type of Case	Bankruptcy ☐ Civil ☑ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	Keith and Associates is a third party defendant in a dispute between our client and a neighboring property owner.
Brief description of the Subject Matter and Project Involved	The neighboring property owner claims that his driveway is flooding and filed suit
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☑ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Arnstein & Lehr, LL Email: franklin.zemel@arnstein.com Telephone Number: 954-713-7600

Vendor Name: KEITH

Please enter your password below and click Save to save your response.
Please be aware that typing in your password acts as your electronic signature, which is just as legal and binding as an original signature. (See Electronic Signatures in Global and National Commerce Act for more information.)

To take exception:
1) Click Take Exception.
2) Create a Word document detailing your exceptions.
3) Upload exceptions as an attachment to your offer on BidSync's system.
By completing this form, your bid has not yet been submitted. Please click on the place offer button to finish filling out your bid.

Username **keith-associates**
Password *

Save | Take Exception | Close

* Required fields

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: HP Consultants, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: F&J Engineering Group, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Florida Engineering & Testing, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Albeck Gerken, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☐ There are no material cases for this Vendor; or

☒ Material Case(s) are disclosed below:

Is this for a: (check type) ☒ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Ranger Construction Industries Or No ☐
Party	
Case Number, Name, and Date Filed	2018-CA-003131, filed 03/2018
Name of Court or other tribunal	15th Judicial Circuit Court, Palm Beach County
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☒
Claim or Cause of Action and Brief description of each Count	WGI filed suit for non-payment of fees due.
Brief description of the Subject Matter and Project Involved	WGI is seeking unpaid design fees. In discovery phase.
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☒ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Wantman Group, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☐ There are no material cases for this Vendor; or

☒ Material Case(s) are disclosed below:

Is this for a: (check type) ☒ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Community Asphalt Corp. Or No ☐
Party	
Case Number, Name, and Date Filed	2018-CA-029816, 04/2018
Name of Court or other tribunal	11th Judicial Circuit Court,Miami-Dade County
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☒
Claim or Cause of Action and Brief description of each Count	Disputed claims for alleged breach of contract
Brief description of the Subject Matter and Project Involved	See below
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☒ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Wantman Group, Inc.

Brief description of the subject matter and project involved:
Community Asphalt Corp. v. WGI et al.: Disputed claims for alleged breach of contract and professional negligence in connection with the design and construction of the Interstate 75 Express Lanes (Segments A+B) project. Currently in discovery.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☐ There are no material cases for this Vendor; or

☒ Material Case(s) are disclosed below:

Is this for a: (check type) ☒ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Dragados USA, Inc. Or No ☐
Party	
Case Number, Name, and Date Filed	CACE18002189, 01/2018
Name of Court or other tribunal	17th Judicial Circuit Court, Broward County
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☒
Claim or Cause of Action and Brief description of each Count	Traffic accident
Brief description of the Subject Matter and Project Involved	See below
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☒ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Wantman Group, Inc.

Hernandez v. Dragados USA, Inc. at al.: Traffic accident within the limits of the Interstate 75 Express Lanes (Segment E) project.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: BMA Consulting Engineering, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: TranSystems Corporation

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Testing, Engineering, & Consulting Services, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Southeastern Archaeological Research, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Stoner & Associates, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Compass Point Surveyors, PL.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Tierra South Florida, Inc.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Duland Design, LLC.

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☒ There are no material cases for this Vendor; or

☐ Material Case(s) are disclosed below:

Is this for a: (check type) ☐ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: Or No ☐
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy ☐ Civil ☐ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☐ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Adept Public Relations, LLC.

METRIC ENGINEERING, INC.
525 Technology Park, Suite 153
Lake Mary, FL 32746
(407) 644-1898

Supplier: **Metric Engineering, Inc.**

Standard Instructions to Vendors
Request for Proposals, Request for Qualifications, or Request for Letters of Interest

Vendors are instructed to read and follow the instructions carefully, as any misinterpretation or failure to comply with instructions may lead to a Vendor's submittal being rejected.

Vendor MUST submit its solicitation response electronically and MUST confirm its submittal in order for the County to receive a valid response through BidSync. Refer to the Purchasing Division website or contact BidSync for submittal instructions.

A. Responsiveness Criteria:

In accordance with Broward County Procurement Code Section 21.8.b.65, a Responsive Bidder [Vendor] means a person who has submitted a proposal which conforms in all material respects to a solicitation. The solicitation submittal of a responsive Vendor must be submitted on the required forms, which contain all required information, signatures, notarizations, insurance, bonding, security, or other mandated requirements required by the solicitation documents to be submitted at the time of proposal opening.

Failure to provide the information required below at the time of submittal opening may result in a recommendation Vendor is non-responsive by the Director of Purchasing. The Selection or Evaluation Committee will determine whether the firm is responsive to the requirements specified herein. The County reserves the right to waive minor technicalities or irregularities as is in the best interest of the County in accordance with Section 21.30.f.1(c) of the Broward County Procurement Code.

Below are standard responsiveness criteria; refer to **Special Instructions to Vendors**, for Additional Responsiveness Criteria requirement(s).

1. Lobbyist Registration Requirement Certification

Refer to **Lobbyist Registration Requirement Certification**. The completed form should be submitted with the solicitation response but must be submitted within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

2. Addenda

The County reserves the right to amend this solicitation prior to the due date. Any change(s) to this solicitation will be conveyed through the written addenda process. Only written addenda will be binding. If a "must" addendum is issued, Vendor must follow instructions and submit required information, forms, or acknowledge addendum, as instructed therein. It is the responsibility of all potential Vendors to monitor the solicitation for any changing information, prior to submitting their response.

B. Responsibility Criteria:

Definition of a Responsible Vendor: In accordance with Section 21.8.b.64 of the Broward County Procurement Code, a Responsible Vendor means a Vendor who has the capability in all respects to perform the contract requirements, and the integrity and reliability which will assure good faith performance.

The Selection or Evaluation Committee will recommend to the awarding authority a determination of

a Vendor's responsibility. At any time prior to award, the awarding authority may find that a Vendor is not responsible to receive a particular award.

Failure to provide any of this required information and in the manner required may result in a recommendation by the Director of Purchasing that the Vendor is non-responsive.

Below are standard responsibility criteria; refer to **Special Instructions to Vendors**, for Additional Responsibility Criteria requirement(s).

1. **Litigation History**

   a. All Vendors are required to disclose to the County all "material" cases filed, pending, or resolved during the last three (3) years prior to the solicitation response due date, whether such cases were brought by or against the Vendor, any parent or subsidiary of the Vendor, or any predecessor organization. Additionally, all Vendors are required to disclose to the County all "material" cases filed, pending, or resolved against any principal of Vendor, regardless of whether the principal was associated with Vendor at the time of the "material" cases against the principal, during the last three (3) years prior to the solicitation response. A case is considered to be "material" if it relates, in whole or in part, to any of the following:

      i. A similar type of work that the vendor is seeking to perform for the County under the current solicitation;
      ii. An allegation of fraud, negligence, error or omissions, or malpractice against the vendor or any of its principals or agents who would be performing work under the current solicitation;
      iii. A vendor's default, termination, suspension, failure to perform, or improper performance in connection with any contract;
      iv. The financial condition of the vendor, including any bankruptcy petition (voluntary and involuntary) or receivership; or
      v. A criminal proceeding or hearing concerning business-related offenses in which the vendor or its principals (including officers) were/are defendants.

   b. For each material case, the Vendor is required to provide all information identified in the **Litigation History Form**. Additionally, the Vendor shall provide a copy of any judgment or settlement of any material case during the last three (3) years prior to the solicitation response. Redactions of any confidential portions of the settlement agreement are only permitted upon a certification by Vendor that all redactions are required under the express terms of a pre-existing confidentiality agreement or provision.

   c. The County will consider a Vendor's litigation history information in its review and determination of responsibility.

   d. If the Vendor is a joint venture, the information provided should encompass the joint venture and each of the entities forming the joint venture.

   e. A vendor is required to disclose to the County any and all cases(s) that exist between the County and any of the Vendor's subcontractors/subconsultants proposed to work on this project during the last five (5) years prior to the solicitation response.

   f. Failure to disclose any material case, including all requested information in connection with each such case, as well as failure to disclose the Vendor's subcontractors/subconsultants litigation history against the County, may result in the Vendor being deemed non-responsive.

2. **Financial Information**

   a. All Vendors are required to provide the Vendor's financial statements at the time of submittal

in order to demonstrate the Vendor's financial capabilities.

b. Each Vendor shall submit its most recent two years of financial statements for review. The financial statements are not required to be audited financial statements. The annual financial statements will be in the form of:

i. Balance sheets, income statements and annual reports; or
ii. Tax returns; or
iii. SEC filings.

If tax returns are submitted, ensure it does not include any personal information (as defined under Florida Statutes Section 501.171, Florida Statutes), such as social security numbers, bank account or credit card numbers, or any personal pin numbers. If any personal information data is part of financial statements, redact information prior to submitting a response the County.

c. If a Vendor has been in business for less than the number of years of required financial statements, then the Vendor must disclose all years that the Vendor has been in business, including any partial year-to-date financial statements.

d. The County may consider the unavailability of the most recent year's financial statements and whether the Vendor acted in good faith in disclosing the financial documents in its evaluation.

e. Any claim of confidentiality on financial statements should be asserted at the time of submittal. Refer to **Standard Instructions to Vendors**, Confidential Material/ Public Records and Exemptions for instructions on submitting confidential financial statements. The Vendor's failure to provide the information as instructed may lead to the information becoming public.

f. Although the review of a Vendor's financial information is an issue of responsibility, the failure to either provide the financial documentation or correctly assert a confidentiality claim pursuant the Florida Public Records Law and the solicitation requirements (Confidential Material/ Public Records and Exemptions section) may result in a recommendation of non-responsiveness by the Director of Purchasing.

3. **Authority to Conduct Business in Florida**

a. A Vendor must have the authority to transact business in the State of Florida and be in good standing with the Florida Secretary of State. For further information, contact the Florida Department of State, Division of Corporations.

b. The County will review the Vendor's business status based on the information provided in response to this solicitation.

c. It is the Vendor's responsibility to comply with all state and local business requirements.

d. Vendor should list its active Florida Department of State Division of Corporations Document Number (or Registration No. for fictitious names) in the **Vendor Questionnaire**, Question No. 10.

e. If a Vendor is an out-of-state or foreign corporation or partnership, the Vendor must obtain the authority to transact business in the State of Florida or show evidence of application for the authority to transact business in the State of Florida, upon request of the County.

f. A Vendor that is not in good standing with the Florida Secretary of State at the time of a

submission to this solicitation may be deemed non-responsible.

g. If successful in obtaining a contract award under this solicitation, the Vendor must remain in good standing throughout the contractual period of performance.

4. Affiliated Entities of the Principal(s)

a. All Vendors are required to disclose the names and addresses of "affiliated entities" of the Vendor's principal(s) over the last five (5) years (from the solicitation opening deadline) that have acted as a prime Vendor with the County. The Vendor is required to provide all information required on the **Affiliated Entities of the Principal(s) Certification Form**.

b. The County will review all affiliated entities of the Vendor's principal(s) for contract performance evaluations and the compliance history with the County's Small Business Program, including CBE, DBE and SBE goal attainment requirements. "Affiliated entities" of the principal(s) are those entities related to the Vendor by the sharing of stock or other means of control, including but not limited to a subsidiary, parent or sibling entity.

c. The County will consider the contract performance evaluations and the compliance history of the affiliated entities of the Vendor's principals in its review and determination of responsibility.

5. Insurance Requirements

The **Insurance Requirement Form** reflects the insurance requirements deemed necessary for this project. It is not necessary to have this level of insurance in effect at the time of submittal, but it is necessary to submit certificates indicating that the Vendor currently carries the insurance or to submit a letter from the carrier indicating it can provide insurance coverages.

C. Additional Information and Certifications

The following forms and supporting information (if applicable) should be returned with Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Failure to timely submit may affect Vendor's evaluation.

1. Vendor Questionnaire

Vendor is required to submit detailed information on their firm. Refer to the **Vendor Questionnaire** and submit as instructed.

2. Standard Certifications

Vendor is required to certify to the below requirements. Refer to the **Standard Certifications** and submit as instructed.

a. **Cone of Silence Requirement Certification**
b. **Drug-Free Workplace Certification**
c. **Non-Collusion Certification**
d. **Public Entities Crimes Certification**
e. **Scrutinized Companies List Certification**

3. Subcontractors/Subconsultants/Suppliers Requirement

The Vendor shall submit a listing of all subcontractors, subconsultants, and major material suppliers, if any, and the portion of the contract they will perform. Vendors must follow the instructions included on the **Subcontractors/Subconsultants/Suppliers Information Form** and submit as instructed.

D. Standard Agreement Language Requirements

1. The acceptance of or any exceptions taken to the terms and conditions of the County's Agreement shall be considered a part of a Vendor's submittal and will be considered by the Selection or Evaluation Committee.

2. The applicable Agreement terms and conditions for this solicitation are indicated in the **Special Instructions to Vendors.**

3. Vendors are required to review the applicable terms and conditions and submit the **Agreement Exception Form**. If the **Agreement Exception Form** is not provided with the submittal, it shall be deemed an affirmation by the Vendor that it accepts the Agreement terms and conditions as disclosed in the solicitation.

4. If exceptions are taken, the Vendor must specifically identify each term and condition with which it is taking an exception. Any exception not specifically listed is deemed waived. Simply identifying a section or article number is not sufficient to state an exception. Provide either a redlined version of the specific change(s) or specific proposed alternative language. Additionally, a brief justification specifically addressing each provision to which an exception is taken should be provided.

5. Submission of any exceptions to the Agreement does not denote acceptance by the County. Furthermore, taking exceptions to the County's terms and conditions may be viewed unfavorably by the Selection or Evaluation Committee and ultimately may impact the overall evaluation of a Vendor's submittal.

E. Evaluation Criteria

1. The Selection or Evaluation Committee will evaluate Vendors as per the **Evaluation Criteria.** The County reserves the right to obtain additional information from a Vendor.

2. Vendor has a continuing obligation to inform the County in writing of any material changes to the information it has previously submitted. The County reserves the right to request additional information from Vendor at any time.

3. For Request for Proposals, the following shall apply:

   a. The Director of Purchasing may recommend to the Evaluation Committee to short list the most qualified firms prior to the Final Evaluation.

   b. The Evaluation Criteria identifies points available; a total of 100 points is available.

   c. If the Evaluation Criteria includes a request for pricing, the total points awarded for price is determined by applying the following formula:

      (Lowest Proposed Price/Vendor's Price) x (Maximum Number of Points for Price) = Price Score

   d. After completion of scoring, the County may negotiate pricing as in its best interest.

4. For Requests for Letters of Interest or Request for Qualifications, the following shall apply:

   a. The Selection or Evaluation Committee will create a short list of the most qualified firms.

   b. The Selection or Evaluation Committee will either:

i. Rank shortlisted firms; or
ii. If the solicitation is part of a two-step procurement, shortlisted firms will be requested to submit a response to the Step Two procurement.

F. Demonstrations

If applicable, as indicated in Special Instructions to Vendors, Vendors will be required to demonstrate the nature of their offered solution. After receipt of submittals, all Vendors will receive a description of, and arrangements for, the desired demonstration. In accordance with Section 286.0113 of the Florida Statutes and pursuant to the direction of the Broward County Board of Commissioners, demonstrations are closed to only the vendor team and County staff.

G. Presentations

Vendors that are found to be both responsive and responsible to the requirements of the solicitation and/or shortlisted (if applicable) will have an opportunity to make an oral presentation to the Selection or Evaluation Committee on the Vendor's approach to this project and the Vendor's ability to perform. The committee may provide a list of subject matter for the discussion. All Vendor's will have equal time to present but the question-and-answer time may vary. In accordance with Section 286.0113 of the Florida Statutes and the direction of the Broward County Board of Commissioners, presentations during Selection or Evaluation Committee Meetings are closed. Only the Selection or Evaluation Committee members, County staff and the vendor and their team scheduled for that presentation will be present in the Meeting Room during the presentation and subsequent question and answer period.

H. Public Art and Design Program

If indicated in **Special Instructions to Vendors,** Public Art and Design Program, Section 1-88, Broward County Code of Ordinances, applies to this project. It is the intent of the County to functionally integrate art, when applicable, into capital projects and integrate artists' design concepts into this improvement project. The Vendor may be required to collaborate with the artist(s) on design development within the scope of this request. Artist(s) shall be selected by Broward County through an independent process. For additional information, contact the Broward County Cultural Division.

I. Committee Appointment

The Cone of Silence shall be in effect for County staff at the time of the Selection or Evaluation Committee appointment and for County Commissioners and Commission staff at the time of the Shortlist Meeting of the Selection Committee or the Initial Evaluation Meeting of the Evaluation Committee. The committee members appointed for this solicitation are available on the Purchasing Division's website under Committee Appointment.

J. Committee Questions, Request for Clarifications, Additional Information

At any committee meeting, the Selection or Evaluation Committee members may ask questions, request clarification, or require additional information of any Vendor's submittal or proposal. It is highly recommended Vendors attend to answer any committee questions (if requested), including a Vendor representative that has the authority to bind.

Vendor's answers may impact evaluation (and scoring, if applicable). Upon written request to the Purchasing Agent prior to the meeting, a conference call number will be made available for Vendor participation via teleconference. Only Vendors that are found to be both responsive and responsible to the requirements of the solicitation and/or shortlisted (if applicable) are requested to participate in a final (or presentation) Selection or Evaluation committee meeting.

K. Vendor Questions

The County provides a specified time for Vendors to ask questions and seek clarification regarding solicitation requirements. All questions or clarification inquiries must be submitted through BidSync by the date and time referenced in the solicitation document (including any addenda). The County will respond to questions via Bid Sync.

L. Confidential Material/ Public Records and Exemptions

1. Broward County is a public agency subject to Chapter 119, Florida Statutes. Upon receipt, all submittals become "public records" and shall be subject to public disclosure consistent with Chapter 119, Florida Statutes. Submittals may be posted on the County's public website or included in a public records request response, unless there is a declaration of "confidentiality" pursuant to the public records law and in accordance with the procedures in this section.

2. Any confidential material(s) the Vendor asserts is exempt from public disclosure under Florida Statutes must be labeled as "Confidential", and marked with the specific statute and subsection asserting exemption from Public Records.

3. To submit confidential material, three hardcopies must be submitted in a sealed envelope, labeled with the solicitation number, title, date and the time of solicitation opening to:

   Broward County Purchasing Division
   115 South Andrews Avenue, Room 212
   Fort Lauderdale, FL 33301

4. Material will not be treated as confidential if the Vendor does not cite the applicable Florida Statute (s) allowing the document to be treated as confidential.

5. Any materials that the Vendor claims to be confidential and exempt from public records must be marked and separated from the submittal. If the Vendor does not comply with these instructions, the Vendor's claim for confidentiality will be deemed as waived.

6. Submitting confidential material may impact full discussion of your submittal by the Selection or Evaluation Committee because the Committee will be unable to discuss the details contained in the documents cloaked as confidential at the publicly noticed Committee meeting.

M. Copyrighted Materials

Copyrighted material is not exempt from the Public Records Law, Chapter 119, Florida Statutes. Submission of copyrighted material in response to any solicitation will constitute a license and permission for the County to make copies (including electronic copies) as reasonably necessary for the use by County staff and agents, as well as to make the materials available for inspection or production pursuant to Public Records Law, Chapter 119, Florida Statutes.

N. State and Local Preferences

If the solicitation involves a federally funded project where the fund requirements prohibit the use of state and/or local preferences, such preferences contained in the Local Preference Ordinance and Broward County Procurement Code will not be applied in the procurement process.

O. Local Preference

Except where otherwise prohibited by federal or state law or other funding source restrictions, a local Vendor whose submittal is within 5% of the highest total ranked Vendor outside of the preference area will become the Vendor with whom the County will proceed with negotiations for a

final contract. Refer to **Local Vendor Certification Form (Preference and Tiebreaker)** for further information.

P. Tiebreaker Criteria

In accordance with Section 21.31.d of the Broward County Procurement Code, the tiebreaker criteria shall be applied based upon the information provided in the Vendor's response to the solicitation. In order to receive credit for any tiebreaker criterion, complete and accurate information must be contained in the Vendor's submittal.

1. **Local Vendor Certification Form (Preference and Tiebreaker);**
2. **Domestic Partnership Act Certification (Requirement and Tiebreaker);**
3. **Tiebreaker Criteria Form: Volume of Work Over Five Years**

Q. Posting of Solicitation Results and Recommendations

The Broward County Purchasing Division's website is the location for the County's posting of all solicitations and contract award results. It is the obligation of each Vendor to monitor the website in order to obtain complete and timely information.

R. Review and Evaluation of Responses

A Selection or Evaluation Committee is responsible for recommending the most qualified Vendor(s). The process for this procurement may proceed in the following manner:

1. The Purchasing Division delivers the solicitation submittals to agency staff for summarization for the committee members. Agency staff prepares a report, including a matrix of responses submitted by the Vendors. This may include a technical review, if applicable.

2. Staff identifies any incomplete responses. The Director of Purchasing reviews the information and makes a recommendation to the Selection or Evaluation Committee as to each Vendor's responsiveness to the requirements of the solicitation. The final determination of responsiveness rests solely on the decision of the committee.

3. At any time prior to award, the awarding authority may find that a Vendor is not responsible to receive a particular award. The awarding authority may consider the following factors, without limitation: debarment or removal from the authorized Vendors list or a final decree, declaration or order by a court or administrative hearing officer or tribunal of competent jurisdiction that the Vendor has breached or failed to perform a contract, claims history of the Vendor, performance history on a County contract(s), an unresolved concern, or any other cause under this code and Florida law for evaluating the responsibility of a Vendor.

S. Vendor Protest

Sections 21.118 and 21.120 of the Broward County Procurement Code set forth procedural requirements that apply if a Vendor intends to protest a solicitation or proposed award of a contract and state in part the following:

1. Any protest concerning the solicitation or other solicitation specifications or requirements must be made and received by the County within seven business days from the posting of the solicitation or addendum on the Purchasing Division's website. Such protest must be made in writing to the Director of Purchasing. Failure to timely protest solicitation specifications or requirements is a waiver of the ability to protest the specifications or requirements.

2. Any protest concerning a solicitation or proposed award above the award authority of the Director of Purchasing, after the RLI or RFP opening, shall be submitted in writing and received by the Director of Purchasing within five business days from the posting of the recommendation of award for Invitation to Bids or the final recommendation of ranking for Request for Letters of Interest and Request for Proposals on the Purchasing Division's website.

3. Any actual or prospective Vendor who has a substantial interest in and is aggrieved in connection with the proposed award of a contract that does not exceed the amount of the award authority of the Director of Purchasing, may protest to the Director of Purchasing. The protest shall be submitted in writing and received within three (3) business days from the posting of the recommendation of award for Invitation to Bids or the final recommendation of ranking for Request for Letters of Interest and Request for Proposals on the Purchasing Division's website.

4. For purposes of this section, a business day is defined as Monday through Friday between 8:30 a.m. and 5:00 p.m. Failure to timely file a protest within the time prescribed for a proposed contract award shall be a waiver of the Vendor's right to protest.

5. As a condition of initiating any protest, the protestor shall present the Director of Purchasing a nonrefundable filing fee in accordance with the table below.

Estimated Contract Amount	Filing Fee
$30,000 - $250,000	$ 500
$250,001 - $500,000	$1,000
$500,001 - $5 million	$3,000
Over $5 million	5,000

If no contract proposal amount was submitted, the estimated contract amount shall be the County's estimated contract price for the project. The County may accept cash, money order, certified check, or cashier's check, payable to Broward County Board of Commissioners.

T. Right of Appeal

Pursuant to Section 21.83.d of the Broward County Procurement Code, any Vendor that has a substantial interest in the matter and is dissatisfied or aggrieved in connection with the Selection or Evaluation Committee's determination of responsiveness may appeal the determination pursuant to Section 21.120 of the Broward County Procurement Code.

1. The appeal must be in writing and sent to the Director of Purchasing within ten (10) calendar days of the determination by the Selection or Evaluation Committee to be deemed timely.

2. As required by Section 21.120, the appeal must be accompanied by an appeal bond by a Vendor having standing to protest and must comply with all other requirements of this section.

3. The institution and filing of an appeal is an administrative remedy to be employed prior to the institution and filing of any civil action against the County concerning the subject matter of the appeal.

U. Rejection of Responses

The Selection or Evaluation Committee may recommend rejecting all submittals as in the best interests of the County. The rejection shall be made by the Director of Purchasing, except when a solicitation was approved by the Board, in which case the rejection shall be made by the Board.

V. Negotiations

The County intends to conduct the first negotiation meeting no later than two weeks after approval of the final ranking as recommended by the Selection or Evaluation Committee. At least one of the representatives for the Vendor participating in negotiations with the County must be authorized to bind the Vendor. In the event that the negotiations are not successful within a reasonable timeframe (notification will be provided to the Vendor) an impasse will be declared and negotiations with the first-ranked Vendor will cease. Negotiations will begin with the next ranked Vendor, etc. until such time that all requirements of Broward County Procurement Code have been met. In accordance with Section 286.0113 of the Florida Statutes and the direction of the Broward County Board of Commissioners, negotiations resulting from Selection or Evaluation Committee Meetings are closed. Only County staff and the selected vendor and their team will be present during negotiations.

W. Submittal Instructions:

1. Broward County does not require any personal information (as defined under Section 501.171, Florida Statutes), such as social security numbers, driver license numbers, passport, military ID, bank account or credit card numbers, or any personal pin numbers, in order to submit a response for ANY Broward County solicitation. DO NOT INCLUDE any personal information data in any document submitted to the County. If any personal information data is part of a submittal, this information must be redacted prior to submitting a response to the County.

2. **Vendor MUST submit its solicitation response electronically and MUST confirm its submittal in order for the County to receive a valid response through BidSync.** It is the Vendor's sole responsibility to assure its response is submitted and received through BidSync by the date and time specified in the solicitation.

3. The County will not consider solicitation responses received by other means. Vendors are encouraged to submit their responses in advance of the due date and time specified in the solicitation document. In the event that the Vendor is having difficulty submitting the solicitation document through Bid Sync, immediately notify the Purchasing Agent and then contact BidSync for technical assistance.

4. Vendor must view, submit, and/or accept each of the documents in BidSync. Web-fillable forms can be filled out and submitted through BidSync.

5. After all documents are viewed, submitted, and/or accepted in BidSync, the Vendor must upload additional information requested by the solicitation (i.e. Evaluation Criteria and Financials Statements) in the Item Response Form in BidSync, under line one (regardless if pricing requested).

6. Vendor should upload responses to Evaluation Criteria in Microsoft Word or Excel format.

7. If the Vendor is declaring any material confidential and exempt from Public Records, refer to Confidential Material/ Public Records and Exemptions for instructions on submitting confidential material.

8. After all files are uploaded, Vendor must submit and **CONFIRM** its offer (by entering password) for offer to be received through BidSync.

9. If a solicitation requires an original Proposal Bond (per Special Instructions to Vendors), Vendor must submit in a sealed envelope, labeled with the solicitation number, title, date and the time of solicitation opening to:

   Broward County Purchasing Division
   115 South Andrews Avenue, Room 212
   Fort Lauderdale, FL 33301

   A copy of the Proposal Bond should also be uploaded into Bid Sync; this does not replace the requirement to have an original proposal bond. Vendors must submit the original Proposal Bond, by the solicitation due date and time.

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Supplier: **Metric Engineering, Inc.**

VENDOR QUESTIONNAIRE AND STANDARD CERTIFICATIONS
Request for Proposals, Request for Qualifications, or Request for Letters of Interest

Vendor should complete questionnaire and complete and acknowledge the standard certifications and submit with the solicitation response. If not submitted with solicitation response, it must be submitted within three business days of County's request. Failure to timely submit may affect Vendor's evaluation.

If a response requires additional information, the Vendor should upload a written detailed response with submittal; each response should be numbered to match the question number. The completed questionnaire and attached responses will become part of the procurement record. It is imperative that the person completing the Vendor Questionnaire be knowledgeable about the proposing Vendor's business and operations.

1. Legal business name:**Metric Engineering, Inc.**
2. Doing Business As/ Fictitious Name (if applicable):**N/A**
3. Federal Employer I.D. no. (FEIN):**59-1685550**
4. Dun and Bradstreet No.:**083104604**
5. Website address (if applicable): **www.metriceng.com**
6. Principal place of business address: **13940 SW 136th Street, Miami, FL 33186**
7. Office location responsible for this project: **525 Technology Park, Suite 153 Lake Mary, FL 32746**
8. Telephone no.:**407-644-1898** Fax no.:**407-644-2376**
9. Type of business (check appropriate box):
   - ☑ Corporation (specify the state of incorporation):**FLORIDA**
   - ☐ Sole Proprietor
   - ☐ Limited Liability Company (LLC)
   - ☐ Limited Partnership
   - ☐ General Partnership (State and County Filed In)
   - ☐ Other - Specify
10. List Florida Department of State, Division of Corporations document number (or registration number if fictitious name): **509621**
11. List name and title of each principal, owner, officer, and major shareholder:
    a) **VMB Investments, LTD (100%)**
    b) **Douglas Cauley, Executive Vice President**
    c) **SEE 2019 FLORIDA PROFIT CORPORATION ANNUAL REPORT PROVIDED**
    d)
12. AUTHORIZED CONTACT(S) FOR YOUR FIRM:

Name: **Dale W. Cody, PE, PTOE**
Title: **Senior Vice President**
E-mail: **dale.cody@metriceng.com**
Telephone No.: **407-644-1898**

Name: **Charles B. Stratton III**
Title: **Vice President**
E-mail: **charles.stratton@metriceng.com**
Telephone No.: **407-644-1898**

13.	Has your firm, its principals, officers or predecessor organization(s) been debarred or suspended by any government entity within the last three years? If yes, specify details in an attached written response.	☐ Yes ☑ No
14.	Has your firm, its principals, officers or predecessor organization(s) ever been debarred or suspended by any government entity? If yes, specify details in an attached written response, including the reinstatement date, if granted.	☐ Yes ☑ No
15.	Has your firm ever failed to complete any services and/or delivery of products during the last three (3) years? If yes, specify details in an attached written response.	☐ Yes ☑ No
16.	Is your firm or any of its principals or officers currently principals or officers of another organization? If yes, specify details in an attached written response.	☐ Yes ☑ No
17.	Have any voluntary or involuntary bankruptcy petitions been filed by or against your firm, its parent or subsidiaries or predecessor organizations during the last three years? If yes, specify details in an attached written response.	☐ Yes ☑ No
18.	Has your firm's surety ever intervened to assist in the completion of a contract or have Performance and/or Payment Bond claims been made to your firm or its predecessor's sureties during the last three years? If yes, specify details in an attached written response, including contact information for owner and surety.	☐ Yes ☑ No
19.	Has your firm ever failed to complete any work awarded to you, services and/or delivery of products during the last three (3) years? If yes, specify details in an attached written response.	☐ Yes ☑ No
20.	Has your firm ever been terminated from a contract within the last three years? If yes, specify details in an attached written response.	☐ Yes ☑ No
21.	Living Wage solicitations only: In determining what, if any, fiscal impacts(s) are a result of the Ordinance for this solicitation, provide the following for informational purposes only. Response is not considered in determining the award of this contract. Living Wage had an effect on the pricing. If yes, Living Wage increased the pricing by% or decreased the pricing by%.	☐ Yes ☑ No ☐ N/A

Cone of Silence Requirement Certification:
The Cone of Silence Ordinance, Section 1-266, Broward County Code of Ordinances prohibits certain communications among Vendors, Commissioners, County staff, and Selection or Evaluation Committee members. Identify on a separate sheet any violations of this Ordinance by any members of the responding firm or its joint ventures. After the application of the Cone of Silence, inquiries regarding this solicitation should be directed to the Director of Purchasing or designee. The Cone of Silence terminates when the County Commission or other awarding authority takes action which ends the solicitation.

The Vendor hereby certifies that: (check each box)

☑ The Vendor has read Cone of Silence Ordinance, Section 1-266, Broward County Code of Ordinances; and

☑ The Vendor understands that the Cone of Silence for this competitive solicitation shall be in effect beginning

upon the appointment of the Selection or Evaluation Committee, for communication regarding this solicitation with the County Administrator, Deputy County Administrator, Assistant County Administrators, and Assistants to the County Administrator and their respective support staff or any person, including Evaluation or Selection Committee members, appointed to evaluate or recommend selection in this RFP/RLI process. For Communication with County Commissioners and Commission staff, the Cone of Silence allows communication until the initial Evaluation or Selection Committee Meeting.

☑ The Vendor agrees to comply with the requirements of the Cone of Silence Ordinance.

Drug-Free Workplace Requirements Certification:
Section 21.31.a. of the Broward County Procurement Code requires awards of all competitive solicitations requiring Board award be made only to firms certifying the establishment of a drug free workplace program. The program must consist of:

1. Publishing a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the offeror's workplace, and specifying the actions that will be taken against employees for violations of such prohibition;

2. Establishing a continuing drug-free awareness program to inform its employees about:
   a. The dangers of drug abuse in the workplace;
   b. The offeror's policy of maintaining a drug-free workplace;
   c. Any available drug counseling, rehabilitation, and employee assistance programs; and
   d. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

3. Giving all employees engaged in performance of the contract a copy of the statement required by subparagraph 1;

4. Notifying all employees, in writing, of the statement required by subparagraph 1, that as a condition of employment on a covered contract, the employee shall:
   a. Abide by the terms of the statement; and
   b. Notify the employer in writing of the employee's conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or of any state, for a violation occurring in the workplace NO later than five days after such conviction.

5. Notifying Broward County government in writing within 10 calendar days after receiving notice under subdivision 4.b above, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

6. Within 30 calendar days after receiving notice under subparagraph 4 of a conviction, taking one of the following actions with respect to an employee who is convicted of a drug abuse violation occurring in the workplace:
   a. Taking appropriate personnel action against such employee, up to and including termination; or
   b. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency; and

7. Making a good faith effort to maintain a drug-free workplace program through implementation of subparagraphs 1 through 6.

The Vendor hereby certifies that: (check box)

☑ The Vendor certifies that it has established a drug free workplace program in accordance with the above requirements.

Non-Collusion Certification:
Vendor shall disclose, to their best knowledge, any Broward County officer or employee, or any relative of any such officer or employee as defined in Section 112.3135 (1) (c), Florida Statutes, who is an officer or director of, or has a material interest in, the Vendor's business, who is in a position to influence this procurement. Any Broward

County officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement. Failure of a Vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the Broward County Procurement Code.

The Vendor hereby certifies that: (select one)

☑ The Vendor certifies that this offer is made independently and free from collusion; or

☐ The Vendor is disclosing names of officers or employees who have a material interest in this procurement and is in a position to influence this procurement. Vendor must include a list of name(s), and relationship(s) with its submittal.

Public Entities Crimes Certification:
In accordance with Public Entity Crimes, Section 287.133, Florida Statutes, a person or affiliate placed on the convicted vendor list following a conviction for a public entity crime may not submit on a contract: to provide any goods or services; for construction or repair of a public building or public work; for leases of real property to a public entity; and may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 for Category Two for a period of 36 months following the date of being placed on the convicted vendor list.

The Vendor hereby certifies that: (check box)

☑ The Vendor certifies that no person or affiliates of the Vendor are currently on the convicted vendor list and/or has not been found to commit a public entity crime, as described in the statutes.

Scrutinized Companies List Certification:
Any company, principals, or owners on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List is prohibited from submitting a response to a solicitation for goods or services in an amount equal to or greater than $1 million.

The Vendor hereby certifies that: (check each box)

☑ The Vendor, owners, or principals are aware of the requirements of Sections 287.135, 215.473, and 215.4275, Florida Statutes, regarding Companies on the Scrutinized Companies with Activities in Sudan List the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List; and

☑ The Vendor, owners, or principals, are eligible to participate in this solicitation and are not listed on either the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List; and

☑ If awarded the Contract, the Vendor, owners, or principals will immediately notify the County in writing if any of its principals are placed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List.

I hereby certify the information provided in the Vendor Questionnaire and Standard Certifications:

Dale W. Cody, PE, PTOE	**Senior Vice President**	**09/11/2019**
*AUTHORIZED SIGNATURE/NAME	TITLE	DATE

Vendor Name: **Metric Engineering, Inc.**

* I certify that I am authorized to sign this solicitation response on behalf of the Vendor as indicated in Certificate as to Corporate Principal, designation letter by Director/Corporate Officer, or other business authorization to bind on behalf of the Vendor. As the Vendor's authorized representative, I attest that any and all statements, oral, written or otherwise, made in support of the Vendor's response, are accurate, true and correct. I also acknowledge that inaccurate, untruthful, or incorrect statements made in support of the Vendor's response may be used by the County as a basis for rejection, rescission of the award, or termination of the contract and may also serve as the basis for debarment of Vendor pursuant to Section 21.119 of the Broward County Procurement Code. I certify that the Vendor's response is made without prior understanding, agreement, or connection with any corporation, firm or person submitting a response for the same items/services, and is in all respects fair and without collusion or fraud. I also certify that the Vendor agrees to abide by all terms and conditions of this solicitation, acknowledge and accept all of the solicitation pages as well as any special instructions sheet(s).

Supplier: **Metric Engineering, Inc.**

Office of Economic and Small Business Requirements: CBE Goal Participation

A. In accordance with the Broward County Business Opportunity Act of 2012, Section 1-81, Code of Ordinances, as amended (the "Business Opportunity Act"), the County Business Enterprise (CBE) Program is applicable to this contract. All Vendors responding to this solicitation are required to utilize CBE firms to perform the assigned participation goal for this contract.

B. The CBE participation goal will be established based on the expected expenditure amount for the proposed scope of services for the project. The Office of Economic and Small Business Development (OESBD) will not include alternate items, optional services or allowances when establishing the CBE participation goal. If the County subsequently chooses to award any alternate items, optional services or allowances as determined by OESBD and the Contract Administrator to be related to the scope of services, OESBD may apply the established CBE participation goal. In such an instance, the County will issue a written notice to the successful Vendor that the CBE participation goal will also apply to the alternate items, optional services or allowances. Vendor shall submit all required forms pertaining to its compliance with the CBE participation goal, as applicable. Failure by Vendor to submit the required forms may result in the rejection of Vendor's solicitation submittal prior to the award or failure to comply with the contract requirements may have an impact on the vendor performance evaluation post award, as applicable.

C. CBE Program Requirements: Compliance with CBE participation goal requirements is a matter of responsibility; Vendor should submit all required forms and information with its solicitation submittal. If the required forms and information are not provided with the Vendor's solicitation submittal, then Vendor must supply the required forms and information no later than three (3) business days after request by OESBD. Vendor may be deemed non-responsible for failure to fully comply with CBE Program Requirements within these stated timeframes.

   1. Vendor should include in its solicitation submittal a **Letter Of Intent Between Bidder/Offeror and County Business Enterprise (CBE) Subcontractor/Supplier** for each CBE firm the Vendor intends to use to achieve the assigned CBE participation goal. The form is available at the following link: http://www.broward.org/EconDev/Documents/CBELetterOfIntent.pdf

   2. If Vendor is unable to attain the CBE participation goal, Vendor should include in its solicitation submittal an **Application for Evaluation of Good Faith Efforts** and all of the required supporting information. The form is available at the following link: http://www.broward.org/EconDev/WhatWeDo/Documents/GoodFaithEffortEval.pdf

D. OESBD maintains an online directory of CBE firms. The online directory is available for use by Vendors at https://webapps4.broward.org/smallbusiness/sbdirectory.aspx.

E. For detailed information regarding the CBE Program contact the OESBD at (954) 357-6400 or visit the website at: http://www.broward.org/EconDev/SmallBusiness/

F. If awarded the contract, Vendor agrees to and shall comply with all applicable requirements of the Business Opportunity Act and the CBE Program in the award and administration of the contract.

   1. No party to this contract may discriminate on the basis of race, color, sex, religion,

national origin, disability, age, marital status, political affiliation, sexual orientation, pregnancy, or gender identity and expression in the performance of this contract.

2. All entities that seek to conduct business with the County, including Vendor or any Prime Contractors, Subcontractors, and Bidders, shall conduct such business activities in a fair and reasonable manner, free from fraud, coercion, collusion, intimidation, or bad faith. Failure to do so may result in the cancellation of this solicitation, cessation of contract negotiations, revocation of CBE certification, and suspension or debarment from future contracts.

3. If Vendor fails to meet or make Good Faith Efforts (as defined in the Business Opportunity Act) to meet the CBE participation commitment (the "Commitment"), then Vendor shall pay the County liquidated damages in an amount equal to fifty percent (50%) of the actual dollar amount by which Vendor failed to achieve the Commitment, up to a maximum amount of ten percent (10%) of the total contract amount, excluding costs and reimbursable expenses. An example of this calculation is stated in Section 1-81.7, Broward County Code of Ordinances.

4. Vendor shall comply with all applicable requirements of the Business Opportunity Act in the award of this contract. Failure by Vendor to carry out any of these requirements shall constitute a material breach of the contract, which shall permit the County to terminate this contract or to exercise any other remedy provided under this contract, the Broward County Code of Ordinances, the Broward County Administrative Code, or other applicable laws, with all such remedies being cumulative.

5. Vendor shall pay its CBE subcontractors and suppliers, within fifteen (15) days following receipt of payment from the County, for all completed subcontracted work and supplies. If Vendor withholds an amount from CBE subcontractors or suppliers as retainage, such retainage shall be released and paid within fifteen (15) days following receipt of payment of retained amounts from the County.

6. Vendor understands that the County will monitor Vendor's compliance with the CBE Program requirements. Vendor must provide OESBD with a Monthly Utilization Report (MUR) to confirm its compliance with the Commitment agreed to in the contract; timely submission of the MUR every month throughout the term of the contract, including amendment and extension terms, is a condition precedent to the County's payment of Vendor under the contract.

Supplier: **Metric Engineering, Inc.**

LOBBYIST REGISTRATION REQUIREMENT CERTIFICATION FORM

The completed form should be submitted with the solicitation response but must be submitted within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

The Vendor certifies that it understands if it has retained a lobbyist(s) to lobby in connection with a competitive solicitation, it shall be deemed non-responsive unless the firm, in responding to the competitive solicitation, certifies that each lobbyist retained has timely filed the registration or amended registration required under Broward County Lobbyist Registration Act, Section 1-262, Broward County Code of Ordinances; and it understands that if, after awarding a contract in connection with the solicitation, the County learns that the certification was erroneous, and upon investigation determines that the error was willful or intentional on the part of the Vendor, the County may, on that basis, exercise any contractual right to terminate the contract for convenience.

The Vendor hereby certifies that: (select one)

☑ It has not retained a lobbyist(s) to lobby in connection with this competitive solicitation; however, if retained after the solicitation, the County will be notified.

☐ It has retained a lobbyist(s) to lobby in connection with this competitive solicitation and certified that each lobbyist retained has timely filed the registration or amended registration required under Broward County Lobbyist Registration Act, Section 1-262, Broward County Code of Ordinances.

It is a requirement of this solicitation that the names of any and all lobbyists retained to lobby in connection with this solicitation be listed below:

Name of Lobbyist: **N/A**
Lobbyist's Firm:
Phone:
E-mail:

Name of Lobbyist:
Lobbyist's Firm:
Phone:
E-mail:

Authorized Signature/Name: Dale W. Cody, PE, PTOE Date: 09/06/2019

Title: Senior Vice President

Vendor Name: Metric Engineering, Inc.

Supplier: **Metric Engineering, Inc.**

DOMESTIC PARTNERSHIP ACT CERTIFICATION FORM (REQUIREMENT AND TIEBREAKER)

Refer to Special Instructions to identify if Domestic Partnership Act is a requirement of the solicitation or acts only as a tiebreaker. If Domestic Partnership is a requirement of the solicitation, the completed and signed form should be returned with the Vendor's submittal. If the form is not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes. To qualify for the Domestic Partnership tiebreaker criterion, the Vendor must currently offer the Domestic Partnership benefit and the completed and signed form must be returned at time of solicitation submittal.

The Domestic Partnership Act, Section 16 ½ -157, Broward County Code of Ordinances, requires all Vendors contracting with the County, in an amount over $100,000 provide benefits to Domestic Partners of its employees, on the same basis as it provides benefits to employees' spouses, with certain exceptions as provided by the Ordinance.

For all submittals over $100,000.00, the Vendor, by virtue of the signature below, certifies that it is aware of the requirements of Broward County's Domestic Partnership Act, Section 16-½ -157, Broward County Code of Ordinances; and certifies the following: (check only one below).

☑ 1. The Vendor currently complies with the requirements of the County's Domestic Partnership Act and provides benefits to Domestic Partners of its employees on the same basis as it provides benefits to employees' spouses

☐ 2. The Vendor will comply with the requirements of the County's Domestic Partnership Act at time of contract award and provide benefits to Domestic Partners of its employees on the same basis as it provides benefits to employees' spouses.

☐ 3. The Vendor will not comply with the requirements of the County's Domestic Partnership Act at time of award.

☐ 4. The Vendor does not need to comply with the requirements of the County's Domestic Partnership Act at time of award because the following exception(s) applies: **(check only one below)**.

- ☐ The Vendor is a governmental entity, not-for-profit corporation, or charitable organization.
- ☐ The Vendor is a religious organization, association, society, or non-profit charitable or educational institution.
- ☐ The Vendor provides an employee the cash equivalent of benefits. (Attach an affidavit in compliance with the Act stating the efforts taken to provide such benefits and the amount of the cash equivalent).
- ☐ The Vendor cannot comply with the provisions of the Domestic Partnership Act because it would violate the laws, rules or regulations of federal or state law or would violate or be inconsistent with the terms or conditions of a grant or contract with the United States or State of Florida. Indicate the law, statute or regulation (State the law, statute or regulation and attach explanation of its applicability).

Dale W. Cody, PE, PTOE	Senior Vice President	Metric Engineering, Inc.	09/06/2019
Authorized Signature/Name	**Title**	**Vendor Name**	**Date**

Supplier: **Metric Engineering, Inc.**

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

☐ There are no material cases for this Vendor; or

☑ Material Case(s) are disclosed below:

Is this for a: (check type) ☑ Parent, ☐ Subsidiary, or ☐ Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor: **Metric Engineering, Inc.** Or No ☐
Party	
Case Number, Name, and Date Filed	**2019-CA-000148; Mary Vest Renfroe and Lonnie C. Renfroe, Plantiff vs. Florida Department of Transportation, Dragados, USA Inc., Prince Contracting LLC, and Metric Engineering Inc., Defendants; March 2019**
Name of Court or other tribunal	**In the Circuit Court of the First Judicial Circuit in and for Santa Rosa County, Florida**
Type of Case	Bankruptcy ☐ Civil ☑ Criminal ☐ Administrative/Regulatory ☐
Claim or Cause of Action and Brief description of each Count	**Allegation of negligence, plaintiff's accident on 6/21/2017**
Brief description of the Subject Matter and Project Involved	**2015 contract with FDOT Contract #C9J23: CEI Services for State Road 8 (I-10) from Escambia Bay Bridge to East of State Road 281 (Avalon Boulevard) in Santa Rosa County, Florida**
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending ☑ Settled ☐ Dismissed ☐ Judgment Vendor's Favor ☐ Judgment Against Vendor ☐ If Judgment Against, is Judgment Satisfied? ☐ Yes ☐ No
Opposing Counsel	Name: **Morgan & Morgan, Wyatt M. Oakey, Esq.** Email: **woakey@forthepeople.com** Telephone Number: **850-316-9100**

Vendor Name: Metric Engineering, Inc.

Supplier: **Metric Engineering, Inc.**

AGREEMENT EXCEPTION FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, it shall be deemed an affirmation by the Vendor that it accepts the terms and conditions of the County's Agreement as disclosed in the solicitation.

The Vendor must either provide specific proposed alternative language on the form below. Additionally, a brief justification specifically addressing each provision to which an exception is taken should be provided.

☐ There are no exceptions to the terms and conditions of the County Agreement as referenced in the solicitation; or

☑ The following exceptions are disclosed below: (use additional forms as needed; separate each Article/ Section number)

Term or Condition Article / Section	Insert version of exception or specific proposed alternative language	Provide brief justification for change
Article 5.5	**5.5 If Contractor fails to substantially complete a project on or before the substantial completion date specified in its agreement with County, and the failure to substantially complete is caused in whole or in part by Consultant, then Consultant shall pay to County its proportional share of any claim for damages to contractor arising out of the delay. The provisions for the computation of delay costs, damages, or any other amounts, whether direct or indirect, in the agreement between the Contr**	**Language is not covered by insurance.**

Vendor Name: **Metric Engineering, Inc.**

Supplier: **Metric Engineering, Inc.**

VOLUME OF PREVIOUS WORK ATTESTATION FORM

The completed and signed form should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Failure to provide timely may affect the Vendor's evaluation.

This completed form MUST be included with the Vendor's submittal at the time of the opening deadline to be considered for a Tie Breaker criterion (if applicable).

Points assigned for Volume of Previous Work will be based on the amount paid-to-date by the County to a prime Vendor **MINUS** the Vendor's confirmed payments paid-to-date to approved certified County Business Enterprise (CBE) firms performing services as Vendor's subcontractor/subconsultant to obtain the CBE goal commitment as confirmed by County's Office of Economic and Small Business Development. Reporting must be within five (5) years of the current solicitation's opening date.

Vendor must list all received payments paid-to-date by contract as a prime vendor from Broward County Board of County Commissioners. Reporting must be within five (5) years of the current solicitation's opening date.

Vendor must also list all total confirmed payments paid-to-date by contract, to approved certified CBE firms utilized to obtain the contract's CBE goal commitment. Reporting must be within five (5) years of the current solicitation's opening date.

In accordance with Section 21.31.d. of the Broward County Procurement Code, the Vendor with the lowest dollar volume of work previously paid by the County over a five-year period from the date of the submittal opening will receive the Tie Breaker.

The Vendor attests to the following:

Item No.	Project Title	Contract No.	Department/ Division	Date Awarded	Prime: Paid to Date	CBE: Paid to Date
1.	**Traffic Signalization Improvement Program Continuing Services**	**RLI# R0840008R1**	**Highway Construction and Engineering Division**	**06/28/2011**	**$4,704,968.81**	**$1,139,642.53**
2.	**Continuing Engineering Services for Traffic, Roadway and Civil Engineering Services**	**RFP# R1177105P1**	**Highway Construction and Engineering Division**	**06/2/2015**	**$4,097,215.93**	**$591,222.74**
3.						
4.						
5.						
6.						
7.						

Grand Total	**$8,802,184.74**	**$1,730,865.27**

Has the Vendor been a member/partner of a Joint Venture firm that was awarded a contract by the County?

Yes ☐ No ☑

If Yes, Vendor must submit a **Joint Vendor Volume of Work Attestation Form**.

Vendor Name:

Authorized Signature/Name **Title** **Date**

VOLUME OF PREVIOUS WORK ATTESTATION JOINT VENTURE FORM

If applicable, this form and additional required documentation should be submitted with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Failure to timely submit this form and supporting documentation may affect the Vendor's evaluation.

If a Joint Venture, the payments paid-to-date by contract provided must encompass the Joint Venture and each of the entities forming the Joint Venture. Points assigned for Volume of Previous Work will be based on the amount paid-to-date by contract to the Joint Venture firm **MINUS** all confirmed payments paid-to-date to approved certified CBE firms utilized to obtain the CBE goal commitment. Reporting must be within five (5) years of the current solicitation's opening date. Amount will then be multiplied by the member firm's equity percentage.

In accordance with Section 21.31.d. of the Broward County Procurement Code, the Vendor with the lowest dollar volume of work previously paid by the County over a five-year period from the date of the submittal opening will receive the Tie Breaker.

The Vendor attests to the following:

Item No.	Project Title	Contract No.	Department/ Division	Date Awarded	JV Equity Percent	Prime: Paid to Date	CBE: Paid to Date
1.	**N/A**						
2.	**N/A**						
3.	**N/A**						
4.	**N/A**						
5.	**N/A**						
6.	**N/A**						
7.	**N/A**						
8.	**N/A**						
					Grand Total	**$0.00**	**$0.00**

Vendor is required to submit an executed Joint Venture agreement(s) and any amendments for each project listed above. Each agreement must be executed prior to the opening date of this solicitation.

Vendor Name: Metric Engineering, Inc.

Dale W. Cody, PE, PTOE	**Senior Vice President**	**09/06/2019**
Authorized Signature/Name	**Title**	**Date**

Supplier: **Metric Engineering, Inc.**

SCRUTINIZED COMPANIES LIST REQUIREMENT CERTIFICATION FORM

The completed and signed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non responsive for failure to fully comply within stated timeframes.

Any company, principals, or owners on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List is prohibited from submitting a response to a solicitation for goods or services in an amount equal to or greater than $1 million.

The Vendor, by virtue of the signature below, certifies that:

a. The Vendor, owners, or principals are aware of the requirements of Sections 287.135, 215.473, and 215.4725 Florida Statutes, regarding Companies on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List; and

b. The Vendor, owners, or principals, are eligible to participate in this solicitation and are not listed on either the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List; and

c. If awarded the Contract, the Vendor, owners, or principals will immediately notify the County in writing if any of its principals are placed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List.

Dale W. Cody, PE, PTOE	**Senior Vice President**	**Metric Engineering, Inc.**	**09/06/2019**
Authorized Signature/Name	**Title**	**Vendor Name**	**Date**

Supplier: **Metric Engineering, Inc.**

SUBCONTRACTORS/SUBCONSULTANTS/SUPPLIERS REQUIREMENT FORM
Request for Proposals, Request for Qualifications, or Request for Letters of Interest

The following forms and supporting information (if applicable) should be returned with Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Failure to timely submit may affect Vendor's evaluation.

A. The Vendor shall submit a listing of all subcontractors, subconsultants and major material suppliers (firms), if any, and the portion of the contract they will perform. A major material supplier is considered any firm that provides construction material for construction contracts, or commodities for service contracts in excess of $50,000, to the Vendor.

B. If participation goals apply to the contract, only non-certified firms shall be identified on the form. A non-certified firm is a firm that is not listed as a firm for attainment of participation goals (ex. County Business Enterprise or Disadvantaged Business Enterprise), if applicable to the solicitation.

C. This list shall be kept up-to-date for the duration of the contract. If subcontractors, subconsultants or suppliers are stated, this does not relieve the Vendor from the prime responsibility of full and complete satisfactory performance under any awarded contract.

D. After completion of the contract/final payment, the Vendor shall certify the final list of non-certified subcontractors, subconsultants, and suppliers that performed or provided services to the County for the referenced contract.

E. The Vendor has confirmed that none of the recommended subcontractors, subconsultants, or suppliers' principal(s), officer(s), affiliate(s) or any other related companies have been debarred from doing business with Broward County or any other governmental agency.

If none, state "none" on this form. Use additional sheets as needed. Vendor should scan and upload any additional form(s) in BidSync.

1. Subcontracted Firm's Name: **PLEASE SEE UPLOADED DOCUMENT**

   Subcontracted Firm's Address:

   Subcontracted Firm's Telephone Number:

   Contact Person's Name and Position:
   Contact Person's E-Mail Address:

   Estimated Subcontract/Supplies Contract Amount:

   Type of Work/Supplies Provided:

2. Subcontracted Firm's Name:

   Subcontracted Firm's Address:

   Subcontracted Firm's Telephone Number:

   Contact Person's Name and Position:

   Contact Person's E-Mail Address:

Supplier: **Metric Engineering, Inc.**

AFFILIATED ENTITIES OF THE PRINCIPAL(S) CERTIFICATION FORM

The completed form should be submitted with the solicitation response but must be submitted within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

a. All Vendors are required to disclose the names and addresses of "affiliated entities" of the Vendor's principal(s) over the last five (5) years (from the solicitation opening deadline) that have acted as a prime Vendor with the County.

b. The County will review all affiliated entities of the Vendor's principal(s) for contract performance evaluations and the compliance history with the County's Small Business Program, including CBE, DBE and SBE goal attainment requirements. "Affiliated entities" of the principal(s) are those entities related to the Vendor by the sharing of stock or other means of control, including but not limited to a subsidiary, parent or sibling entity.

c. The County will consider the contract performance evaluations and the compliance history of the affiliated entities of the Vendor's principals in its review and determination of responsibility.

The Vendor hereby certifies that: (select one)

☑ No principal of the proposing Vendor has prior affiliations that meet the criteria defined as "Affiliated entities"

☐ Principal(s) listed below have prior affiliations that meet the criteria defined as "Affiliated entities"

Principal's Name:

Names of Affiliated Entities:

Principal's Name:

Names of Affiliated Entities:

Principal's Name:

Names of Affiliated Entities:

Authorized Signature Name: **Dale W. Cody, PE, PTOE**

Title: **Senior Vice President**

Vendor Name: **Metric Engineering, Inc.**

Date: **09/06/2019**

Supplier: **Metric Engineering, Inc.**

RFP-RFQ-RLI LOCATION ATTESTATION FORM (EVALUATION CRITERIA)

The completed and signed form and supporting information (if applicable, for Joint Ventures) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Failure to timely submit this form and supporting information may affect the Vendor's evaluation. Provided information is subject to verification by the County.

A Vendor's principal place of business location (also known as the nerve center) within Broward County is considered in accordance with Evaluation Criteria. The County's definition of a principal place of business is:

1. As defined by the Broward County Local Preference Ordinance, "Principal place of business means the nerve center or center of overall direction, control and coordination of the activities of the bidder [Vendor]. If the bidder has only one (1) business location, such business location shall be considered its principal place of business."

2. A principal place of business refers to the place where a corporation's officers direct, control, and coordinate the corporation's day-to-day activities. It is the corporation's 'nerve center' and in practice it should normally be the place where the corporation maintains its headquarters; provided that the headquarters is the actual center of direction, control, and coordination, i.e., the 'nerve center', and not simply an office where the corporation holds its board meetings (for example, attended by directors and officers who have traveled there for the occasion).

The Vendor's principal place of business in Broward County shall be the Vendor's "Principal Address" as indicated with the Florida Department of State Division of Corporations, for at least six months prior to the solicitation's due date.

Check one of the following:

☐ The Vendor certifies that it has a principal place of business location (also known as the nerve center) within Broward County, as documented in Florida Department of State Division of Corporations (Sunbiz), and attests to the following statements:

1. Vendor's address listed in its submittal is its principal place of business as defined by Broward County;

2. Vendor's "Principal Address" listed with the Florida Department of State Division of Corporations is the same as the address listed in its submittal and the address was listed for at least six months prior to the solicitation's opening date. A copy of Florida Department of State Division of Corporations (Sunbiz) is attached as verification.

3. Vendor must be located at the listed "nerve center" address ("Principal Address") for at least six (6) months prior to the solicitation's opening date;

4. Vendor has not merged with another firm within the last six months that is not headquartered in Broward County and is not a wholly owned subsidiary or a holding company of another firm that is not headquartered in Broward County;

5. If awarded a contract, it is the intent of the Vendor to remain at the referenced address for the duration of the contract term, including any renewals, extensions or any approved

interim contracts for the services provided under this contract; and

6. The Vendor understands that if after contract award, the County learns that the attestation was erroneous, and upon investigation determines that the error was willful or intentional on the part of the Vendor, the County may, on that basis exercise any contractual right to terminate the contract. Further any misleading, inaccurate, false information or documentation submitted by any party affiliated with this procurement may lead to suspension and/or debarment from doing business with Broward County as outlined in the Procurement Code, Section 21.119.

If the Vendor is submitting a response as a Joint Venture, the following information is required to be submitted:

a. Name of the Joint Venture Partnership
b. Percentage of Equity for all Joint Venture Partners
c. A copy of the executed Agreement(s) between the Joint Venture Partners

☑ Vendor does not have a principal place of business location (also known as the nerve center) within Broward County.

Vendor Information:

Vendor Name: **Metric Engineering, Inc.**

Vendor's address listed in its submittal is:

525 Technology Park, Suite 153
Lake Mary, FL 32746

The signature below must be by an individual authorized to bind the Vendor. The signature below is an attestation that all information listed above and provided to Broward County is true and accurate.

Dale W. Cody, PE, PTOE	**Senior Vice President**	**Metric Engineering, Inc.**	**09/06/2019**
Authorized Signature/Name	Title	Vendor Name	Date

Supplier: **Metric Engineering, Inc.**

RFP-RLI-RFQ LOCAL PREFERENCE AND TIE BREAKER CERTIFICATION FORM

The completed and signed form should be returned with the Vendor's submittal to determine Local Preference eligibility, however it must be returned at time of solicitation submittal to qualify for the Tie Break criteria. If not provided with submittal, the Vendor must submit within three business days of County's request for evaluation of Local Preference. Proof of a local business tax should be submitted with this form. Failure to timely submit this form or local business tax receipt may render the business ineligible for application of the Local Preference or Tie Break Criteria.

In accordance with Section 21.31.d. of the Broward County Procurement Code, to qualify for the Tie Break Criteria, the undersigned Vendor hereby certifies that (check box if applicable):

☐ The Vendor is a local Vendor in Broward County and:

a. has a valid Broward County local business tax receipt;
b. has been in existence for at least six-months prior to the solicitation opening;
c. at a business address physically located within Broward County;
d. in an area zoned for such business;
e. provides services from this location on a day-to-day basis, and
f. services provided from this location are a substantial component of the services offered in the Vendor's proposal.

In accordance with Local Preference, Section 1-74, et. seq., Broward County Code of Ordinances, a local business meeting the below requirements is eligible for Local Preference. To qualify for the Local Preference, the undersigned Vendor hereby certifies that (check box if applicable):

☐ The Vendor is a local Vendor in Broward and:

a. has a valid Broward County local business tax receipt issued at least one year prior to solicitation opening;
b. has been in existence for at least one-year prior to the solicitation opening;
c. provides services on a day-to-day basis, at a business address physically located within the Broward County limits in an area zoned for such business; and
d. the services provided from this location are a substantial component of the services offered in the Vendor's proposal.

Local Business Address:

Vendor does not qualify for Tie Break Criteria or Local Preference, in accordance with the above requirements. The undersigned Vendor hereby certifies that (check box if applicable): The Vendor is not a local Vendor in Broward County.

Dale W. Cody, PE, PTOE	Senior Vice President	Metric Engineering, Inc.	09/06/2019
AUTHORIZED SIGNATURE/NAME	**TITLE**	**COMPANY**	**DATE**