DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

ARCADIS

CONTRACT NOS. 4400023921, 4400023922, 4400023923, 4400024185, 4400024186, 4400024187, 4400024188, AND 4400024189

IDIQ CONTRACTS FOR BRIDGE PRESERVATION
STATEWIDE

May 10, 2022

Arcadis
Silver Comet Trail
Cobb County, GA

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

ARCADIS

Sections 1-11

Arcadis
North Bayou Black Drive Bridge/
Hanson Canal

Terrebonne Parish, LA

DOTD FORM: 24-102

(Revised March 1, 2022)

PROPOSAL TO PROVIDE CONSULTANT SERVICES

Prime consultant shall complete the DOTD Form 24-102 without altering the Form's text; however, the instruction and/or guidance for Sections 12 through 23 can be removed but do not remove Section title and number.

ANY CONSULTANT FAILING TO SUBMIT ANY OF THE INFORMATION REQUIRED ON THE DOTD FORM 24-102, OR PROVIDING INACCURATE INFORMATION ON THE DOTD FORM 24-102, MAY BE CONSIDERED NON-RESPONSIVE.

Prime consultant should enter the firm name in the footer at the bottom of this page. (It will carry over to subsequent pages.)

1. Contract title as shown in the advertisement	IDIQ CONTRACTS FOR BRIDGE PRESERVATION STATEWIDE
2. Contract number(s) as shown in the advertisement	CONTRACT NOS. 4400023921, 4400023922, 4400023923, 4400024185, 4400024186, 4400024187, 4400024188, AND 4400024189
3. State Project Number(s), if shown in the advertisement	N/A
4. Prime consultant name (as registered with the Louisiana Secretary of State where such registration is required by law)	ARCADIS Arcadis U.S., Inc.
5. Prime consultant license number (as registered with the Louisiana Professional Engineering and Land Surveying Board (LAPELS) if registration is required under Louisiana law)	EF.0002808 DUNS 057690414
6. Prime consultant mailing address	10352 Plaza Americana Drive Baton Rouge, LA 70816
7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)	10352 Plaza Americana Drive Baton Rouge, LA 70816
8. Name, title, phone number, and email address of prime consultant's contract point of contact	Osama Shahawy, PE Project Manager P. 469 865 9791 | E. osama.shahawy@arcadis.com
9. Name, title, phone number, and email address of the official with signing authority for this proposal	Akhil Chauhan, PE, PTOE, PTP, PMP Senior Vice President P. 225 368 6563 | E. akhil.chauhan@arcadis.com
10. This is to certify that all information contained herein is accurate and true, and that the team presently has sufficient staff to perform these services within the designated time frame. By submitting this proposal,	

proposer certifies that it is not engaged in a boycott of Israel and it will, for the duration of its contract obligations, refrain from a boycott of Israel. Proposer also certifies and agrees that the following information is correct: In preparing its response, the proposer has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor or supplier, refused to transact or terminated business activities, or taken other actions intended to limit commercial relations, with a person or entity that is engaging in commercial transactions in Israel or Israeli-controlled territories, with the specific intent to accomplish a boycott or divestment of Israel. The proposer also has not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. DOTD reserves the right to reject the response of the bidder or proposer if this certification is subsequently determined to be false, and to terminate any contract awarded based on such a false response.	 Akhil Chauhan, PE, PTOE, PTP, PMP Date:
11. If a Disadvantaged Business Enterprise (DBE) goal has been set for this advertisement, indicate which firm(s) will be used to meet the DBE goal and each firm(s)' percentage.	Firm(s): Firm(s)' %: APS: 6% CD&C: 4% Rahman: 8%

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

ARCADIS

Sections
12-14

WJE
East Roundbunch Road over Cow Bayoue
Orange County, TX

12. Past Performance Evaluation Discipline Table:

As indicated in the advertisement, insert the completed table here. The percentages for the prime and sub-consultants must total 100% for **each past performance evaluation discipline**, as well as the overall total percent of the contract.

The only past performance evaluation disciplines to be used are: Road, Bridge, Traffic, CE&I/OV, Geotech, Survey, Environmental, Data Collection, Planning, Right-of-Way, CPM, ITS, Appraiser and Other. The crosswalk from the old categories to the new categories can be found at the link below: http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/CCS/General%20Information/CPPR%20Crosswalk%20to%20New%20Evaluation%20Disciplines.pdf. (same link as in the advertisement)

Sub-consultants are allowed to be used for this proposal. Fill in the table by identifying only those evaluation disciplines consistent with the approach and methodology proposed in Section 19 of the DOTD Form 24-102*, the name of each firm that is part of the proposal, and the percentage of work in each past performance evaluation discipline to be performed by that firm. The percentage estimated for each evaluation discipline is for evaluation purposes only and will not control the actual performance or payment of the work. The percentages for the prime and sub-consultants must total 100% for each past performance evaluation discipline, as well as the overall total percent of the contract.

Evaluation Discipline(s)	% of Overall Contract	Arcadis	APS (DBE)	CD&C (DBE)	Rahman (DBE)	TranSystems	WJE	Fenstermaker
Bridge	78%	62%			10%	18%	10%	
Road	4%	100%						
Survey	6%			65%				35%
Traffic	3%	100%						
Geotech	6%		100%					
Environmental	3%	100%						
Identify the percentage of work for the overall contract to be performed by the prime consultant and each sub-consultant.								
Percent of Contract	100%	58%	6%	4%	8%	14%	8%	2%

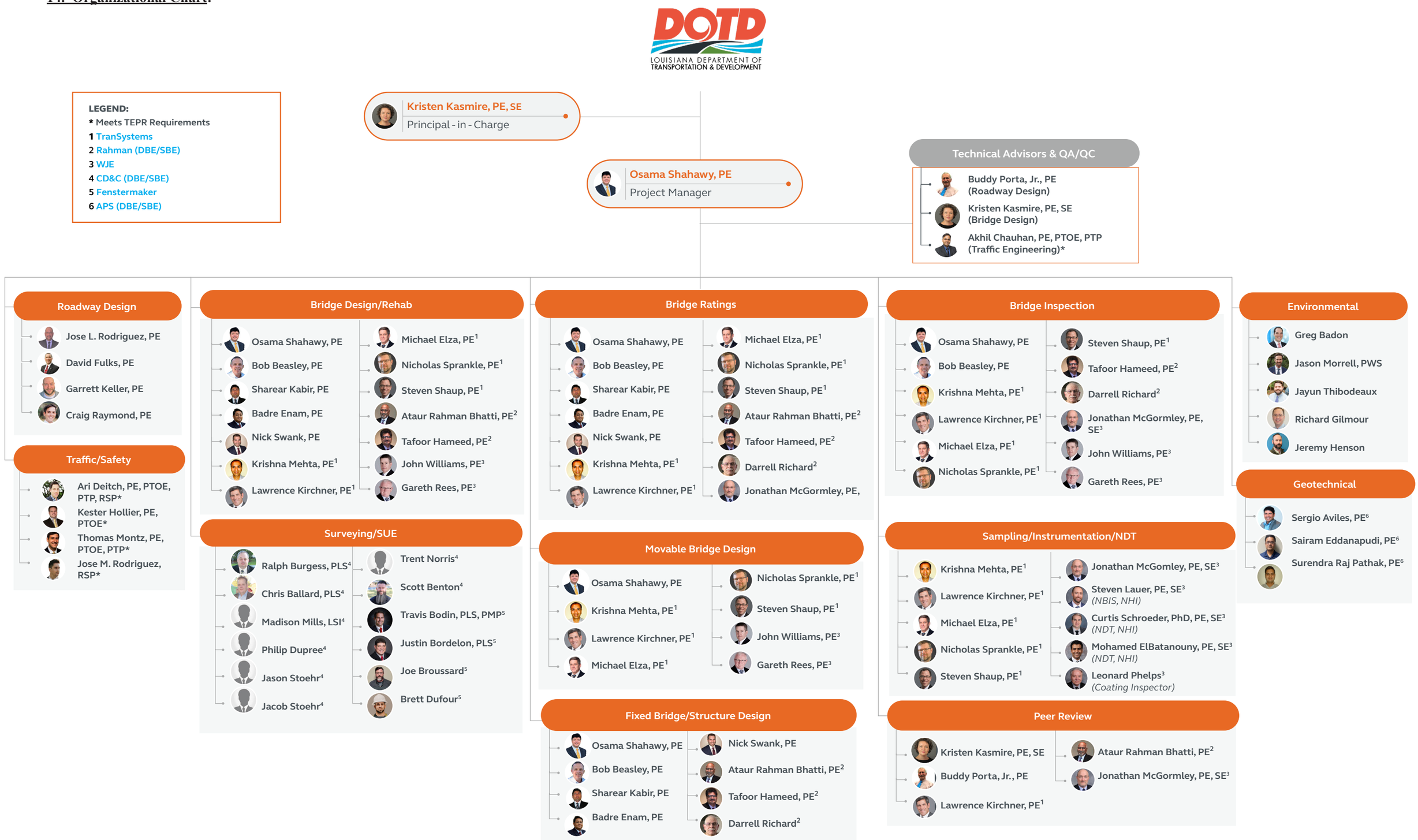
13. Firm Size:

Firm name	DOTD Job Classification	Number of personnel committed to this contract	Total number of personnel available in this DOTD Job Classification (if needed)
ARCADIS	Principal	3	5
	Engineer	5	17
	Engineering – Aide	1	5
	Supervisor Engineer	6	10
	Environmental Pro	1	3
	Biologist/Wetlands	1	3
	Engineer Intern	1	4
	Senior Technician	1	2
	Clerical	1	2
	Engineer – Other	2	3
APS Engineering and Testing (DBE/SBE)	Engineer	5	5
	Driller	8	8
	Technician	12	12
C&C INCORPORATED (DBE/SBE)	Surveyor	2	2
	Party Chief	2	4
	Instrument Man	2	2
	Rodman	2	3
	CADD Operator	1	1
	Senior Technician	3	5
RA RAHMAN & ASSOCIATES, INC. Civil and Structural Engineers (DBE/SBE)	Engineer	2	2
	Engineer Intern	1	1
	CADD Drafter	2	2
TranSystems	Principal	1	43
	Supervisor – Engineer	2	12
	Supervisor – Other	1	258
	Engineer	4	12
	Engineer – Other	6	274
	Engineering Intern	2	83
	Administrative	1	10
	Clerical	1	10
	CADD Operator	2	9

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS	CADD Technician	1	4
	Clerical	2	7
	Engineer	3	3
	Engineer Intern	2	28
	Engineering-Aide	1	1
	Engineer - Other	2	28
	Geologist	2	2
	Principal	4	45
	Professional	4	19
	Senior Technician	1	58
	Supervisor - Arch	1	1
	Supervisor - Eng	1	13
	Supervisor - Other	3	113
	Technician	1	7
FENSTERMAKER C. H. Fenstermaker & Associates, L.L.C.	Biologist/Wetlands	1	1
	CADD Technician	2	4
	Clerical	1	2
	Engineer	3	14
	Environmental Pro	1	4
	GIS Analyst	1	2
	Inspector	2	3
	Inspector-Certified	1	2
	Inspector-Lead	1	3
	Instrument Man	2	4
	Party Chief	2	5
	Engineer Intern	4	9
	Principal	1	6
	Rodman	1	4
	Senior-Technician	2	9
	Supervisor-Eng	1	4
	Supervisor-Other	1	4
	Surveyor	1	3
	Technician	3	7

(Add rows as needed)

14. Organizational Chart:



DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

ARCADIS

Sections 15-17

Arcadis
GDOT Bridge Bundle Contract
Statewide, GA

15. Minimum Personnel Requirements:

MPR No. Do not insert wording from ad	Personnel being used to meet the MPR *(Individual(s) may not satisfy more than one MPR unless specifically allowed by Attachment B of the advertisement)*	Firm employed by	Type of license / certification & number	State of license	License / certification expiration date
1	Kristen Kasmire	ARCADIS	PE	LA	PE43461 09/30/2023
2	Kristen Kasmire		PE	LA	PE43461 09/30/2023
3	Osama Shahawy		PE	LA	PE35652 09/30/2022
	Bob Beasley		PE	LA	PE34159 03/31/2023
4	Osama Shahawy		PE	LA	PE35652 09/30/2022
	Bob Beasley		PE	LA	PE34159 03/31/2023
5	Krishna Mehta	TranSystems	PE	LA	PE45352 09/30/2023
	Michael Elza		PE	LA	PE39135 03/31/2023
	John R. Williams	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS	PE	LA	PE44300 9/30/2022
6	Nicholas Sprankle	TranSystems	PE	LA	PE45388 09/30/2023
	Gareth Rees	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS	PE	LA	PE40754 9/30/2022
7	Steven Shaup	TranSystems	PE	LA	PE45298 03/30/2023
	Lawrence Kirchner		PE	LA	PE31409 03/31/2024
	Jonathan McGormley	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS	PE	LA	PE43912 3/31/2024

8	Jose L. Rodriguez	ARCADIS	PE	LA	PE30492 03/31/2023
9	Sergio Aviles	APS Engineering and Testing (DBE/SBE)	PE	LA	PE33571 03/21/2024
	Sairam Eddanapudi		PE	LA	PE35129 03/31/2024

(Add rows as needed)

16. Staff Experience:

Firm employed by	ARCADIS		Meet MPR Nos. 3 & 4
Name	Osama Shahawy, PE	Years of relevant experience with this employer	1
Title	Bridge Practice Manager	Years of relevant experience with other employer(s)	30
Degree(s) / Years / Specialization		MS / 1991 / Civil (Structures), Florida State University BS/1983/Civil Engineering	
Active registration number / state / expiration date		PE.0035652 / LA / Exp. 09/2022	
Year registered	2001	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Project Manager, Bridge Design/Structural Design Lead	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Shahawy has more than 31 years of structural bridge engineering experience working on variety of different projects throughout Louisiana and the Southeast. He served as PM or TL on 100+ projects with extensive bridge plan, specification and estimate, bridge preservation, rehabilitation, repair and replacement. His experience includes coordinating teams of engineers and other technical personnel on the preparation of bridge PS&E design/ management including on/off-system bridges in rural/urban areas with heavy utilities & complex TCP. Mr. Shahawy has a design background in concrete and steel structures that includes strong construction capabilities–a benefit that ensures constructible technical solutions and more complete construction documents. Leveraging his decades of experience, he will check accuracy, verify compliance to review comments, and will ensure that agency and stakeholder comments and concerns are addressed.
04/12 – 05/13	**LA 1 over I-19 Bridge Rehabilitation, Rapides Parish, LA.** *Project Manager, Engineer of Record*. Provided professional inspection, rehabilitation design, and construction engineering services. The bridge is a 4 spans steel plate girder structure that has uneven settlement and rotation at the abutments which required rehabilitation to stabilize the movement and raise the bridge back to its original as built elevation. Responsibilities included directing team and over all task involves the preparation of geometric layout plan development; bridge design and final plans, specifications and estimates for LA 1 Bridge over I-49 according to LADOTD BDEM. Performed QA/QC, prepared construction cost estimate, reviewed/revised plans based on LADOTD comments.
07/11 – 05/13	**MacArthur Drive Bridge Interchange, Rapides Parish, LA.** *Structure Manager, Engineer of Record*. Responsible for widening revising and redesigning the MacArthur Drive Interchange completing Phase 1. The design and plan production are related to the design changes required for Ramps 7 and 8. Design deck slab for 18 spans, which include Trapezoidal girders & Bulb-T girders. Design Bearing Pads for all proposed Trapezoidal and Bulb-T girders. Design Inverted-T Caps and special geometric columns for piers. Responsible for the design and production geometric and span layout modifications, superstructures, and substructures. Review for accuracy and completeness of the plans and related designs. Review of all design products for compliance and good engineering practice as directed by a Project Quality Control Plan.
10/20 – Ongoing	**I-10 Construction Management at Risk (CMAR) SEGMENT 1, Baton Rouge, LA.** *Structure Task Lead, Engineer of Record* for CMAR project to improve I-10 through widening and reconstruction of the main line from three to four lanes in each direction, including bridge replacement and rehabilitation, interchange and ramp modification, shoulder widening, and auxiliary lane(s) from LA 415 to Essen Lane on I-10 and I-12. Responsibilities include designing the substructure for the Terrace- Washington bridges, including temporary and permanent bridge widenings. Participates in task force meetings and works with the CMAR

	Contractor and DOTD to develop preferred bridge concepts. Responsible for QA/QC of all designs, plans, and estimated quantities according to LADOTD guidelines.
02/19 – 5/20	Pecue Lane/I-10 Interchange. City of Baton Rouge / East Baton Rouge Parish. Structure Manager for design of twin bridges over I-10 constructed in conjunction with a Diverging Diamond Interchange. Scope of work includes design of girder span bridges including substructure and superstructure. Responsibilities include the development of preliminary and final engineering plans for the construction of the bridge structures and retaining walls needed for the new I-10 interchange with multiple through and turn lanes on Pecue Lane.
10/18 – 11/20	Alphonse Forbes Bridge at Sandy Bayou Replacement, City of Baton Rouge, East Baton Rouge Parish, LA / 18-Br-Pt-0017 *Structure Manager.* Responsible for the replacement of the Alphonse Forbes Road Bridge over Sandy Creek located in Central, Louisiana, in East Baton Rouge Parish. Reviewed final plan and calculations QC design analysis and final bridge structure plans for 5 concrete slab span bridge. Provide read lines and review comments for final plans and estimated quantities according to LADOTD guidelines.
07/11 – 05/13	Mississippi River Bridge at Vicksburg, Mississippi, LA. *Project Manager, Engineer of Record*. Responsible for the four-lane continuous main steel-truss through-deck bridge covers a total length of 1,716 ft. and a width of 60 ft. The main truss consists of two symmetrical 640.5 ft. cantilever spans and one 435 ft. drop span. The approach spans consist of 101 prestressed concrete spans and reinforced concrete pier caps. Responsible for review of as-built plans and all rehab projects plans; indexed and developed inspection forms; supervised and reviewed results from the 3D computer model; model calibration; performed QA/QC according to LADOTD BDEM and assisted in developing the final report.
07/11 – 06/12	I-10 over Calcasieu River - Lake Charles Bridge, Lake Charles, LA. Project Manager, Engineer of Record. Responsible for bridge inspection that includes four steel deck trusses as well as a cantilever steel through-truss for the main span portion of the bridge, covering a total length of 6,617 ft. with a width of 62.67 ft. The east and west approach spans of the bridge consist of two bridge systems: first, a longitudinal girder system supported on steel bents; second, a fracture-critical span system, consisting of a two-girder, floor beam, and stringer system. Responsible for review of the as-built and rehab project plans and indexing; developed inspection forms; supervised and reviewed the results from the 3D computer model; model calibration; performed load rating based on the present condition, capacity and loading of the bridge; rated the gusset plate and connection systems following the Federal Highway Administration (FHWA)-IF-09-014; performed QA/QC and assisted in developing the final report.
09/10 – 09/12	Load Rating of 230 Bridges Statewide, Baton Rouge, LA. *Project Manager/ Team Leader, Engineer of Record*. The project consisted of all necessary engineering services required for performing the structural load rating of approximately 230 non-complex bridges statewide, using the Load and Resistance Factor Rating (LRFR) method. Performed the evaluation and load rating of 80 bridges, comprised of 36 concrete slab spans, three void slab spans, 10 precast deck panels with transverse post-tensioning spans, six quad-beam girder spans, two steel plate girder continuous spans, two rolled girder spans, 12 (AASHTO) Type II, III, IV, or BT-72 girder spans, eight bridges with multiple units of varying girder type, one Duel steel plate main girder system supporting transverse steel plate floor beams and transverse rolled steel stringers. Supervised the daily activities of the load rating team, checked results, performed QA/QC and developed final rating reports according to LADOTD BDEM.

Firm employed by	ARCADIS		Meet MPR Nos. 1 & 2
Name	Kristen Kasmire, PE, SE	Years of relevant experience with this employer	6
Title	Senior Bridge Engineer	Years of relevant experience with other employer(s)	18
Degree(s) / Years / Specialization		MS / 2004 / Civil Engineering, Georgia Institute of Technology BS / 1996 / Civil Engineering, Georgia Institute of Technology	
Active registration number / state / expiration date		PE.0043461 / LA / Exp. 09/2023	
Year registered	2001	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Principal-in-Charge/Peer Review	

Experience dates	Experience and qualifications relevant to the proposed contract
	Ms. Kasmire has more than 24 years of experience designing structures including bridges, retaining walls, and other transportation facilities; and managing transportation projects from concept through construction. She has worked for a variety of clients including state DOTs, counties, cities, contractors, and private developers. She has experience in both design-bid-build and design-build projects. She uses her diverse experience to deliver innovative solutions. Her role on this contract is to provide QAQC and serve as a technical advisory for any structural design components that may be required.
05/20 – 11/20	**Alphonse Forbes Bridge at Sandy Bayou Replacement, East Baton Rouge City-Parish, Watson, LA / 18-Br-Pt-0017.** *Bridge Quality Assurance and Technical Advisor.* Oversight of bridge design and plan production to ensure project met the requirements of the City, complied with AASHTO and City policies, and underwent Arcadis Quality Control and Quality Assurance process. The project will replace an existing bridge on Alphonse-Forbes Road over Sandy Creek with a new 9-span flat slab bridge on pile bents. The project was designed to fit within the existing right-of-way and meet the required hydraulic opening.
01/20 – Ongoing	**US 90 Business Signing Upgrades and Construction Engineering Support, LADOTD, Jefferson and Orleans Parishes, LA.** *Structures Technical Advisor.* Provide high-level structural guidance and review for the replacement of overhead and roadside sign structures. The existing and proposed sign structures are attached to existing bridges of various configurations and material types which required unique structural solutions to handle the current design loads without negatively impacting the existing bridges.
03/16 – 08/18	**SR-11 Bridge Replacement over Apalachee River, Walton/Barrow Counties, GA.** *Bridge Design Lead*. This project will replace a structurally deficient bridge and provide operational improvements to traffic on SR 11. The project will relocate SR 11 west of its present location, for a total of 0.57 miles. The proposed new bridge will be a 280' x 44' 3-span PSC beam bridge and will be located just west of the existing bridge. The relocated SR 11 will consist of two 12' lanes with 10' rural shoulders (4' paved). Traffic will be maintained on the existing bridge while the proposed bridge is constructed to maintain local and through traffic during construction.
10/14 – Ongoing	**Buena Vista Road Bridges (Spider Web Network), Columbus, GA.** *Bridge Design Lead* for this TIA funded project will replace an at-grade railroad crossing with a grade separated crossing, improving safety and reducing travel delays on Buena Vista Road. Approximately 7 trains per day cross Buena Vista Road causing significant delays to the 27,000 cars traveling that corridor. Through analysis of traffic patterns in the area, the corridor will be re-aligned, and several intersections reconstructed to improve traffic flow and reduce congestion. The project will require staging of traffic to construct the grade separation while limiting impacts to the traveling public. The project also includes 4 retaining walls and the replacement of an existing bridge carrying Buena Vista Road over Bull Creek. The bridge will be replaced using stage-construction.

09/15 – 06/18	I-85 Express Lanes Design Build, GDOT, Gwinnett County, GA. *Bridge Design Lead*. Responsible for producing design plans for impacted bridges to accommodate expansion of a congested Metro Atlanta interstate. The design plans propose to completely replace the southbound (SB) bridge over I-985; constructing one new bridge to transport I-85 northbound (NB) managed lane over general purpose lanes; and widening I-85 NB and SB bridges over SR 20. The SB bridge over I-985 is a three-span PSC beam bridge, utilizing 74-inch Bulb Tee beams to span up to 163 feet. The bridge is supported on concrete piers with a mix of spread and pile footings and will be stage-constructed to maintain interstate traffic. NB managed lane bridge over I-985 is also a three-span bridge, using 78-inch Florida I-Beams to span up to 183 feet. Stability of this long-span beam was carefully analyzed during manufacture, transport, erection and in the final condition. The twin bridges over SR 20 are four-span bridges with span lengths ranging from 52 to 96 feet. The widening will be constructed of 54-inch Bulb Tee beams supported on reinforced concrete intermediate bents and steel h-pile end bents. Rock is shallow around the bridge, and foundations will be a combination of spread footings founded on rock and pile supported footings.
09/16 – Ongoing	I-16 / I-95 Interchange Widening, GDOT, Chatham County, GA. *Project Manager and Bridge Design Lead. R*esponsible for the delivery of roadway and bridge costing plans, full survey database, and an approved environmental document (Categorical Exclusion) to support this Interchange Reconstruction and Interstate Widening project. As bridge lead, Kristen prepared conceptual staging plans for eight bridge replacements and provided cost estimates for the replacements, two new flyover ramps and some minor repair work. This effort assisted the roadway team in evaluating staging alternatives and allowed GDOT to evaluate costs and right-size project scope. With the better-defined scope, Kristen oversaw preparation of costing plans for the new flyovers, replacement of four bridges, and repair of five bridges. She coordinated the bridge work that was performed in-house and by subconsultants, ensuring consistency across all deliverables. As the Project Manager, Kristen leads a multi-disciplinary team and works closely with GDOT's Office of Innovative Delivery to ensure the costing plans and supporting documents are delivered on schedule, enabling the Department to select the Design-Build team in June 2018.
10/14 – 08/16	I-75 South Managed Lanes Design-Build, GDOT, Henry County, GA. *Bridge Design Lead.* For design of variable rate toll lanes along I-75 between SR 155/ McDonough Road and SR 138 / Stockbridge Highway utilizing GDOT's innovative DB approach to expedite project delivery. Project includes two reversible lanes in I-75 center median from SR 138 in south Clayton County to just north of SR 20. and one reversible lane also in the center median, extending to SR 155 in Henry County. The project uses three slip access locations to provide ingress / egress from the managed lanes to / from I-75 general purpose lanes. A new dedicated "express-lane only" access interchange is proposed south of Jonesboro Road with a connector road back to Jonesboro Road. A flyover ramp to I-675 on northern terminus is included and provides slip ramps on I-675 near SR 138.

Firm employed by	ARCADIS			Meet MPR Nos. 3 & 4
Name	Robert Beasley, PE	Years of relevant experience with this employer	32	
Title	Senior Bridge Engineer	Years of relevant experience with other employer(s)	0	
Degree(s) / Years / Specialization		BS / 1989 / Civil Engineering, University of Akron, Structures		
Active registration number / state / expiration date		PE.0034159 / LA / Exp.03/2023		
Year registered	2005	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities.		Bridge Design/Rehab/Ratings/Inspection		

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Beasley has more than 32 years of relevant design experience in management and design of bridges and structures. He has been exposed to a variety of projects working for many municipalities such as counties, cities, and park districts and other clients such as Louisiana Departments of Transportation, the US Army Corps of Engineers, CSX Transportation, and Norfolk Southern Railroad. His varied project experience includes numerous railroad structures, highway underpass and overpass bridges, bridge rehabilitations, pedestrian bridges including cable-stayed, and retaining walls. Bob has inspected and load rated many bridges. Bob is a member of AREMA Subcommittee 8 – Concrete Structures & Foundations assisting with the development of structural specifications.
11/17 – 12/20	**H.009250 / I-10. Highland to LA 73 Design-Build, LADOTD, East Baton Rouge Parish, LA.** *Independent Design Reviewer.* For performing an independent design assessment and analytical check of the new interstate bridges over Highland Road (LA 42) as well as for the widening and rehabilitation of the interstate bridges over Bayou Manchac. The Highland Road bridge was 310'-0" long with a 190'-0" steel plate girder main span. The Bayou Manchac bridge was 200'-0" long with 25'-0" slab spans on pile bents. Arcadis completed separate, independent calculations of the deck, girders, slab spans, bearings, splices, and substructure using DOTD approved design software.
01/07 – 11/13	**Gulf Intracoastal Waterway, West Closure Complex, US Army Corps of Engineers, New Orleans, LA.** *Lead Bridge Engineer.* This $800 million project which was completed using the ECI (early contractor involvement) method. This method is the same as Construction Management at Risk **(CMAR).** Arcadis worked directly with the Corps and Contractor to reduce flood risk for residences and businesses in three parishes on the west bank of the Mississippi River. As a part of this project Arcadis developed an access bridge using precast, prestressed concrete voided slabs on pile bents with precast concrete piles. Portions of the access structure were supported on the pump station inlet walls. Numerous utilities going to and from the pump station were supported on the side and below the voided slabs.
03/19 – Ongoing	**US 90 Business Signing Upgrade Construction Engineering Support Task Orders, LADOTD, Jefferson & Orleans Parishes, LA / H.010634.5.** *Senior Structural Engineer:* Responsible for review of Requests for Information (RFI), Steel and Anchor Bolt Shop Drawings, and other Contractor Submittals. Participated in designing of the overhead and roadside signing structures following LADOTD and AASHTO design standards for the US 90 Business corridor for a length of approximately 9.8 miles.
1/11 – 06/16	**I-75 Over US 6, WOO-75-10.61 Accelerated Bridge Replacements, ODOT, Bowling Green, OH.** *Senior bridge Designer.* For major bridge reconstruction project along I-75 in Wood County, Ohio which extends from Portage Road to Devil's Hole Road. A unique project element is the bridge replacement of WOO-75-12.94 which carries I-75 over US 6, known locally as Grand Army of the Republic Freeway. An innovative approach is being used for this 4-span bridge replacement, termed Accelerated Bridge

	Construction (ABC), which will "slide" the Northbound and Southbound bridge replacement superstructures into final position over 2 distinct weekends. The new 200' long structures are 2-span, prestressed concrete I-beams supported on stub abutments on piling behind MSE walls and cap & column piers founded on piling.
02/12 – 09/15	WOO-75-12.94 Third Lane Widening, ODOT, District 2, Ohio. *Project Manager and Lead Bridge Engineer.* Bridge project that was part of the reconstruction and widening of approximately nine miles of I.R.75. The project includes interchange acceleration and deceleration improvements as well as mainline bridge rehabilitations and/or replacements. During the initial phases of the project Arcadis evaluated the U.S. 6 interchange for design deficiencies and provided revised geometrics. Another key feature of the project utilized by ODOT was to replace the I-75 over U.S. 6 mainline bridge utilizing accelerated bridge construction (ABC) techniques. To provide the required vertical clearance, U.S. 6 was lowered. Duration of construction of the bridge was six months utilizing ABC instead of a typical two season project. Traffic on I.R. 75 was disrupted for two weekends only. U.S. 6 traffic was reduced to bi-directional traffic for the entire project duration and closed for two weekends. The existing 4-span rolled steel beam bridge was replaced by a 2-span prestressed concrete beam structure. The substructure consisted of stub abutments behind MSE walls and a cap and column pier, all constructed underneath the existing bridge while maintaining traffic. The 200' long superstructure was constructed adjacent to the existing bridge. In one weekend an existing bridge was demolished, a new superstructure was pulled into position and all ancillary work was completed. The process was repeated for the second bridge.
01/11 – 11/12	Bridge Design for Oberlin Rd., West Ridge Rd. and Gulf Rd. Bridges, Ohio Turnpike Commission, Lorain County, OH. *Lead Bridge Engineer*. Responsible for repair, replacement and/or rehabilitation of the following bridges over the Turnpike in Lorain County: (1) Bridge Parapet Investigation and Replacement/Rehabilitation of the Oberlin Road Bridge over the Turnpike at Milepost 141.2; (2) Approach Slab and Substructure Investigation and Repair/Replacement of the West Ridge Road Bridge over the Turnpike at Milepost 142.6; and (3) Bridge Deck Replacement of the Gulf Road Bridge over the Turnpike at Milepost 146.4.
03/18 – Ongoing	East Jessup Yard Improvements, Confidential Client, Howard Co., MD. *Lead Bridge Engineer.* For this project where Jessup Yard is a critical juncture for freight locomotives between Savage and Dorsey Maryland as this location is also the station meeting place for all east/west MARC service from Baltimore to Washington. The project includes the addition of a second lead track that allows arriving trains to use to avoid entering mainline tracks and causing delays to the mainline traffic. An existing brick arch culvert was widened using CSXT standard details to span Dorsey Run. The single span bridge extension consists of 44' steel rolled beams on steel pipe pile supported end bents. The design was developed to avoid track outages on the existing line. Construction is scheduled for 05/19.
02/12 – 08/12	Albany Division, River Subdivision Second Main – Coxsackie Phase 1, Confidential Client, Coxsackie, NY. *Lead Bridge Engineer.* For the addition of a second main line. Arcadis inspected and load rated five bridges. Bridge types included single and multi-span riveted deck plate girders, welded ballasted through girders, ballast deck beams and a metal culvert. Bridge assessments for each structure were prepared. Based on condition, two bridges were determined to require replacement. His responsibilities included inspecting bridges, checking load-rating calculations, and leading the preliminary design effort on the 2 replacement bridges

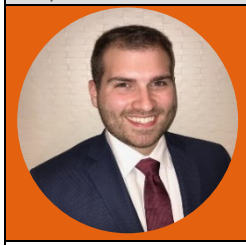
Firm employed by	ARCADIS		
Name	Badre Enam, PhD, PE	Years of relevant experience with this employer	13
Title	Senior Structural Engineer	Years of relevant experience with other employer(s)	7
Degree(s) / Years / Specialization		PhD / 2008 / Structural Engineering, Florida State University MS / 2001 / Structural Engineering, Bangladesh University of Engineering and Technology BS / 1998 / Civil Engineering, Bangladesh University of Engineering and Technology	
Active registration number / state / expiration date		PE.037647 / LA / Exp. 09/2023	
Year registered	2013	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Bridge Design/Rehab/Ratings	

Experience dates	Experience and qualifications relevant to the proposed contract
	Dr. Enam has more than 20 years of experience as a structural engineer. His professional design experience includes: structural analysis and design of steel and concrete structures (using STAAD Pro, Sap 2000, RISA 3D etc.), deep foundation design using pile and drilled shaft, Finite Element Analysis (using GTStrudl, ANSYS), concrete bridges as per LRFD specifications using pre-stressed box, bulb tees and AASHTO girders, railroad bridge, steel plate girder bridges (LRFD) including moveable spans, dynamic effects from ship/barge impact on bridge piers, hydraulic structures such as Sector Gate, Vertical Lift Gate, and T-wall, residential & commercial buildings, and stability analysis of dams for seismic loading. His responsibilities have included structural design, FE analysis, P&S preparation, bid document preparation, shop drawing review, cost estimation, QA/QC etc.
04/13 – 04/14	**US 11 Railroad Replacement and Corridor Improvements EA, LADOTD, St. Tammany Parish, LA / H.000688.2.** *Lead Bridge Engineer.* Replacement and widening of the US 11 roadway overpass of the Norfolk Southern Railroad. Project included evaluating partial and full access intersection options and bridge alignment and type alternatives for the heavily skewed and long steel span bridge in this urban area of Slidell, Louisiana. A key feature of the project was preliminary design of a 380-ft long steel plate girder bridge span on an S curve over the Norfolk Southern right-of-way. Performed cost estimation and construction sequencing to minimize traffic delay during construction.
08/19 – 11/20	**Alphonse Forbes Bridge at Sandy Bayou Replacement, East Baton Rouge City-Parish, Watson, LA / 18-Br-Pt-0017.** *Bridge Design Engineer.* The Alphonse Forbes Road bridge was closed and Arcadis was selected by the City-Parish to complete a design study, topographic survey, and preliminary and final designs. The engineering responsibilities include the development of General Plans, foundation layouts, super-elevation diagrams in addition to structural design, detailing and load ratings of various bridge components such as: slab spans, bent caps, approach slabs, etc.
10/15 – 04/18	**North Bayou Black Drive / Hanson Canal Bridge, LADOTD Off-System Highway Bridge Replacement Program, Terrebonne Parish, LA / H 011533.5.** *Designer of Record and Project Manager*. Responsible for providing all necessary engineering and related services required for developing plans for the replacement of an off-system highway bridge. Detailed designed effort included filed surveying, right of way adjustment, crash barrier selection, hydraulic analysis, preliminary plan preparation and quantity estimation.
03/19 – Ongoing	**US 90 Business Signing Upgrades and Construction Engineering Support Task Orders, LADOTD, Jefferson & Orleans Parishes, LA / H.010634.5.** *Senior Structural Engineer.* Responsible for review of Requests for Information (RFI), Steel and Anchor Bolt Shop Drawings, and other Contractor Submittals. Participated in designing of the overhead and roadside signing structures following LADOTD and AASHTO design standards for the US 90 Business corridor for a length of approximately 9.8 miles.

Firm employed by	ARCADIS		
Name	Sharear Kabir, PE	Years of relevant experience with this employer	5
Title	Structural Engineer	Years of relevant experience with other employer(s)	8
Degree(s) / Years / Specialization		MS / 2008 / Civil Engineering, Louisiana State University BS / Civil Engineering / Khulna University of Engineering and Technology, 2000	
Active registration number / state / expiration date		PE.0037169 / LA / Exp. 09/2022	
Year registered	2012	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Bridge Design/Rehab/Ratings	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Kabir is experienced in civil engineering field ranging from bridge design and analysis for LADOTD to construction management and field supervision for private industries. He possesses good understanding of Louisiana Department of Transportation and Development (LADOTD), American Association of State Highway and Transportation Officials (AASHTO), American Society of Civil Engineers, American Conference Institute, and American Institute of Steel Construction design standards and has a demonstrated proficiency in bridge design and load rating, structural design, calculation, and documentation.
07/16 – 04/18	**North Bayou Black Drive Bridge over Hanson Canal, Terrebonne Parish, LA.** *Project Structural Engineer*. Conducted structural design and prepared CAD drawings for a 28 ft wide and 80 ft long slab span bridge to replace the structurally deficient or functionally obsolete North Bayou Black Drive Bridge under the off-system bridge replacement program of LADOTD.
04/14 – 07/16	**LA 63 Pigeon Creek Bridge, LADOTD, St. Helena Parish, LA.** *Bridge Design Engineer*. Replace the existing bridge with a 32 ft wide and 140 ft long new precast slab bridge on LA 63 utilizing a phased construction technology to expedite the construction process. Served as the Bridge design engineer for LADOTD and completed the 100 percent final plans that included the design of precast slab panels, approach slab panels, Bent cap panels, foundation layout, and estimation of bridge quantities. Worked closely with the road design, environmental and survey sections of LADOTD to establish the final bridge alignment and final taking lines.
04/16 – 07/16	**LA 506 Castor, Castor Relief, & Drain Bridges, LADOTD, Caldwell Parish, LA.** *LADOTD Bridge Design Representative*. Responsible for replacing six existing bridges with new cast in place slab span bridges in accordance with the most current and applicable LADOTD and AASHTO bridge design specifications. Developed General Plans, foundation layouts and super elevation diagrams. Designed guard rails and conducted structural design and load ratings of various bridge components. slab spans, bent caps, approach slabs, etc.
04/14 – 10/15	**US-165 Bridges Near Fenton, LADOTD, Jefferson Parish, LA.** *Structural Engineering*. Four new bridges were proposed to be constructed on US-165 to replace the existing bridges. Among the four bridges, Bridge 1 and 2 were proposed to be precast slab span bridges. The concrete slab panels, approach slab panels, bent cap sections for slab panel bridges are to be fabricated off-site and then brought to the site ready to be erected in-place to form the whole structure gradually. Conducted structural design and load rating of the precast slab panels, bents, and approach slab panels for Bridges 1 and 2 as an LADOTD bridge design engineer.
07/16 – Ongoing	**US 90 Business Signing Upgrades and Construction Engineering Support, Jefferson and Orleans Parishes, LA.** *Project Structural Engineer*. Participated in designing of the overhead and roadside signing structures following LADOTD and AASHTO design standards for the US 90 Business corridor for a length of approximately 9.8 miles. Investigated the as-built plans for the types, sizes and clearances of existing bridge girders, barrier, parapets, and deck overhangs to specify the sign-support attachments. Responsibility also included the analysis of structural quantities and preparation of structural drawings. Currently providing engineering support during construction including review of contractor submittals and RFIs.

Firm employed by	ARCADIS		
Name	Nicholas Swank, PE	Years of relevant experience with this employer	6
Title	Structural Engineer	Years of relevant experience with other employer(s)	<1
Degree(s) / Years / Specialization		MS / 2018 / Engineering in Structural Engineering, Lehigh University BS / 2017 / Civil Engineering, University of Akron	
Active registration number / state / expiration date		PE.87415 / OH /Exp. 12/2023 E-Rail Certification – E-Rail US	
Year registered	2021	Discipline	N/A
Contract role(s) / brief description of responsibilities.		Bridge Design/Rehab/Ratings/Inspection	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Swank has six years of experience in the design of bridges and structures. He has been exposed to a variety of projects working for clients such as the Departments of Transportation for Ohio, Louisiana, Georgia and Florida, CSX Transportation, and many counties and cities. He has completed the final design of a complex truss bridge using 3D FEM for the City of Akron. He has prepared structure type studies, inspection finding reports, bridge plans and construction estimates for a variety of bridge types. He has assisted in cursory/in-depth/fracture critical bridge inspections. He has completed bridge superstructure and substructure analyses, load rating and design of rehabilitation and replacement structures and retaining walls.
07/16 – Ongoing	**US 90 Business Signing Upgrades and Construction Engineering Support, Jefferson and Orleans Parishes, LA.** *Structural Engineer*. Participated in designing of the overhead and roadside signing structures following LADOTD and AASHTO design standards for the US 90 Business corridor for a length of approximately 9.8 miles. Investigated the as-built plans for the types, sizes and clearances of existing bridge girders, barrier, parapets, and deck overhangs to specify the sign-support attachments. Responsibility also included the analysis of structural quantities and preparation of structural drawings. Currently providing engineering support during construction including review of contractor submittals and RFIs.
01/15 – 08/16	**12th Street Reconstruction and Bridge Replacement, City of Canton, Canton, OH.** *Drafter*. Served as a drafter and was responsible for assisting in plan development for this project. This project consisted of the reconstruction of one-half mile of 12th Street NW from I-77 to Monument Street including the replacement of two reinforced concrete arch bridges over Nimishillen Creek and the Canton Park Raceway as well as the relocation of a pedestrian bridge over Nimishillen Creek. Work also included pavement replacement, streetscaping, decorative street lighting, storm sewers, traffic signals, signing and pavement markings, retaining walls, and relocation of the Park multi-use path and walking path. The new 2-span Nimishillen Creek Bridge consists of reinforced concrete arch span and a reinforced concrete frame span. The new Canton Park Raceway Bridge consist of a single span reinforced concrete frame.
07/16 – 12/19	**Multi-Year Bridge Load Ratings No. 99-16-01, MP 151.1 TO 240.4, Ohio Department of Transportation, Districts 4, 11 & 12, Akron, OH.** *Bridge Load Rating Engineer*. Assisted on inspections on this project. Responsibilities included creating inspection routes, determining field information needed, performing load ratings and the creating the load rating reports. Arcadis was selected for this four-year project that includes the inspection and load rating of 200+ bridges for the eastern half of the Turnpike. The work includes inspections to determine deterioration of superstructure members for use in load ratings. The primary scope of work is the load rating of various types of bridges including steel beam, concrete slabs, and culverts. The ratings are completed in AASHTO BrR with reports prepared and submitted to the Commission.

08/20 – 12/20	Cow Bayou Bridge Study & Design, Marathon Petroleum Company LLC, Webster, Summit County, OH. *Design Engineer*. Responsibilities include cost estimates for the rehabilitation and replacement structures, design of the replacement structure, plan development and cost estimate. Arcadis performed a study of this pipeline bridge crossing over Cow Bayou to determine if the bridge should be rehabilitated or replaced, including costs, bridge type, repair types, hydraulic and environmental effects. The study also included a hydraulic study and permitting discussion. Final plans were then developed for bridge replacement comprised of four drilled shafts supporting two steel beams with steel cross beams, to support all 7 pipelines crossing the creek.
03/15 – 07/18	Summit County Load Ratings, Summit County, Summit County, OH. *Bridge Load Rating Engineer*. Assisted on inspections on this project. Responsibilities included creating inspection routes, determining field information needed, and performing load ratings. Arcadis completed the inspections and load ratings for ten bridges in Summit County. Two bridges consisted of curved steel beams and the remainder was multiple span continuous steel beam bridges. Bridges were inspected to confirm plan dimensions and determine amounts of deterioration to be considered in the load ratings. Software programs Descus and BARS PC were used to complete the load ratings. Project manager and checked and performed various load ratings.
12/18 – 02/19	Trumbull County Load Ratings, Trumbull County, Trumbull County, OH. *Bridge Load Rating Engineer*. Responsibilities included performing load ratings and the creating the load rating report. Arcadis completed the inspections and load ratings for 16 bridges in Trumbull County. Multiple bridge types were rated including single and multiple span earth-filled concrete arches, single and multiple span concrete beams and an earth-filled stone arch. One bridge has multiple structure types that included prestressed I-beams, prestressed concrete box beams, steel rolled beams and a 200’ span open spandrel concrete deck arch. Each bridge was inspected to confirm plan dimensions and determine amounts of deterioration to be considered in the load ratings. An inspection vehicle was utilized to gain access to the arch bridges. The software program BARS PC was used to complete the load ratings of the concrete beams, steel beams and prestressed beams. The software programs RISA, along with Excel and Mathcad, were used to analyze the arches. The analysis of the open spandrel arch required a three-dimensional model with plate elements. After the completion of the analysis, a report was written to summarize the bridge inspections and the results of the analysis. Project Manager and Bridge Load Rating Engineer on this project. Responsibilities included oversight of the project team, coordination of inspections, checking and performing load ratings and the review of all load ratings and preparation of the report.

Firm employed by	ARCADIS		
Name	Lloyd "Buddy" Porta, Jr., PE	Years of relevant experience with this employer	10
Title	Principal Engineer	Years of relevant experience with other employer(s)	37
Degree(s) / Years / Specialization		BS / 1973 / Civil Engineering, Louisiana State University	
Active registration number / state / expiration date		PE.016425 / LA / Exp. 09/2023	
Year registered	1977	Discipline	Civil Engineer, Environmental Engineer
Contract role(s) / brief description of responsibilities.		Technical Advisor & QAQC (Roadway Design)/Peer Review	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Porta brings more than 47 years of experience in the transportation field. During his 37-year career at LADOTD, he practiced highway design for 11 years with 8 of those years in responsible charge of a design squad. He spent the next 21 years of his career in project/program management. He managed the Off-System Bridge Replacement Program and the Urban System Program. Both programs replaced or constructed new bridges on parish and state routes. Both programs replaced/constructed several bridges in District 04. In 2001 he was tasked with being the LADOTD TIMED Program Manager. This $5 billion program was developed to multi-lane over 500 miles of state highways as well as construct 3 new bridges. 2 of these bridges across the Mississippi River. He spent the last 5 years of his career at LADOTD as the State Road Design Engineer Administrator.
10/16 – 02/18	**North Bayou Black Drive Bridge Off-System Highway Bridge Replacement Program, LADOTD, Terrebonne Parish, LA / H 011533.5.** *QA / QC Reviewer.* Reviewed plans for the replacement of an off-system highway bridge. Detailed design effort included field surveying, right of way adjustments, crash barrier selection, hydraulic analysis, preliminary and final plan preparation and quantity estimation.
04/12 – 01/14	**US 11 Railroad Bridge Replacement and Corridor Improvements EA, LADOTD, Slidell, LA / H.000688.2.** *QA / QC Reviewer.* Responsible for LADOTD guideline compliance for the replacement and widening of the US 11 roadway overpass of the Norfolk Southern Railroad. The project included evaluating partial and full-access intersection options and bridge alignment and type alternatives for the heavily skewed and long steel span bridge in this urban area of Slidell, Louisiana. Key issues included the bridge's imminent historic status, commercial parking impacts and adapting to the Norfolk Southern right-of-way and travel pattern changes following the construction.
06/84 – 10/90 10/05 – 10/10	**Off-System Bridge Program, LADOTD, Stateside, LA.** *Program Manager.* Replaced / rehabilitated existing bridges located on nonfederal routes in the cities and/or parishes in Louisiana. Provided the project and program management. Responsible for the selection of the qualifying sites, the distribution of the federal funds to the participating parishes, the selection of the design consultant, the coordination with the parishes and the consultants, the development of the scope of services and fee for each project, the technical review of the topographic surveys and construction plans and providing comments to the consultants and parishes, and the approval of all invoices.
09/12 – Ongoing	**US 165 Connector and Ouachita River Bridge - Environmental Impact Statement, Line and Grade and Toll Study, LADOTD, Monroe, LA / 4400004807 / H.004782.** *QA / QC Reviewer.* Responsible for LADOTD guideline compliance. Three alternatives were developed and evaluated along with various tolling scenarios. All alternatives traverse substantial tracts of wooded wetlands associated with Chauvin Swamp near the Russell Sage Wildlife Management Area.

07/15 – 05/19	US 190B at Jefferson Ave. Roundabouts, LADOTD, Covington, LA / H.011495. *QA / QC Reviewer.* Supported the construction of a new roundabout in Covington as a quality assurance/quality control reviewer. Plans reviewed included the construction of sidewalk for use by pedestrians.
01/14 – Ongoing	Pete's Highway EA and Alternatives, LADOTD, Livingston Parish, LA / 4400004727 / H.002397.2. *QA / QC Reviewer.* Responsible for LADOTD guideline compliance for the high-priority project completing an EA and traffic engineering services related to improving congestion and operations along Range Avenue in the vicinity of I-12. Alternatives include two split diamond interchange options with roundabout, partial clover leafs, and c-d road components at both Range Avenue and the next existing, eastern overpass at Pete's Highway (LA 16) and a diverging diamond interchange alternative at Range Avenue.
04/12 – 01/14	LA 434 Corridor Stage 1 Environmental Assessment, New Orleans Regional Planning Commission, Lacombe, LA / LA003230. *QA / QC Reviewer.* Responsible for LADOTD guideline compliance. EA for the widening and improvements of LA 434 between LA 36 and the anticipated new junction with LA 3241 near LaCombe, Louisiana in St. Tammany Parish. The project involved stream permit application coordination.
10/90 – 10/01 10/05 – 10/10	Urban System Program MPOs & Urbanized Areas, LADOTD, Statewide, LA. *Program Manager.* Responsible for the selection of the consultants, coordinating with the Metropolitan Planning Officials (MPOs) and the cities/parishes officials, coordinating with the LADOTD Planning Section, developing the scope of services and fee for the projects, reviewing the construction plans and providing comments to the consultants and cities / parishes, and approving all invoices. Mr. Porta was responsible for developing the Urban Systems Program Seminar, which provided information on the processes and procedures used in the program. He served as project manager for signal projects in St. Bernard, Orleans, St. Tammany, and Ouachita Parishes
09/01 – 05/06	Transportation Infrastructure Model for Economic Development (TIMED) Program, LADOTD, Statewide, LA. *LADOTD TIMED Program Manager*. Worked and coordinated on a daily basis with the TIMED Program Manager (LTM) to develop training, procedures, policies, and guidelines for the program. This $5 billion program was developed to multilane over 500 miles of state highways as well as construct three new bridges; two of these bridges across the Mississippi River. The program manager was required to monitor the progress of the program and had full invoice approval of the consultant's monthly invoice. This position was a member of the TIMED Program Executive Committee and reported directly to the Secretary of the LADOTD. This program was mandated in the Louisiana Constitution. There were 16 projects that were recognized throughout the state. Bonds were sold to finance and, therefore, accelerate the program.
05/06 – 07/10	Road Design Engineer Administrator, LADOTD, Statewide, LA. Responsible for transitioning the focus of his section from project management back to roadway design as desired by the Chief Engineer. To support this mandate, brought in training from the FHWA Resource Center in Atlanta, GA to assist the development of a young group of designers. Coordinated the training provided through the Louisiana Transportation Training Education Center. Developed a Legal Seminar with the assistance of the Attorney General's Office to address the lack of experience in Road Design and other LADOTD sections in depositions and representing the Department in court. This seminar was presented in several cities in Louisiana to LADOTD employees. Responsible for the development of design criteria for Offset Left Turn Lanes and design guidelines for the replacement of bridges on state routes.

Firm employed by	TranSystems			Meet MPR No. 5
Name	Krishna Mehta, PE		Years of relevant experience with this employer	5
Title	Sr. Mechanical Engineer		Years of relevant experience with other employer(s)	11
Degree(s) / Years / Specialization			BS / 2005/ Mechanical Engineering, Pennsylvania State University	
Active registration number / state / expiration date			PE.0045352 / LA / Exp. 09/2023	
Year registered	2011	Discipline	Mechanical Engineering	
Contract role(s) / brief description of responsibilities.			Movable Bridge Design/Ratings/Inspection	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Mehta is a Senior Mechanical Engineer. Krishna will provide mechanical inspections, repair/improvements, alternatives analysis, construction plans and historic bridge considerations for this project. He has 15 years of experience in the movable bridge industry, specifically with vertical lift bridges. His experience includes the preparation of contract plans, specifications, and cost estimates for rehabilitation and new bridge design, field inspection of machinery and providing construction support services such as reviewing shop drawings and procedures. Krishna has provided mechanical construction engineering and inspection services and contractor services such as providing strain gauge bridge balance testing, balance calculations, counterweight design, balance testing swing bridges, and provided field support with millwrights to assist in the precision alignment of mechanical machinery systems. He has also been the lead mechanical inspector for tunnels, inspected to the latest SNTI and TOMIE standards.
03/09 – 12/11	**Historic SR 5 Main Street Vertical Lift Bridge, FDOT District 2, Jacksonville, FL.** *Mechanical Engineer* for the analysis of the existing Main Street vertical lift bridge over the St. Johns River in downtown Jacksonville, which included a study of the feasibility for installing truss protection, replacing the existing lift span open steel deck with an Exodermic deck, evaluation of the towers to support current and possible future loadings, an evaluation of deterioration at flanking truss expansion bearings, an evaluation of the existing lift span buffer cylinders, a condition assessment with recommendations for remedial action for the uphaul and downhaul ropes, and a complete load rating of the bridge for as-inspected conditions, including a special analysis of the gusset plates for the primary truss members based on FHWA draft guidelines using Load and Resistance Factor Rating (LRFR) methods.
04/08 – 09/11	**Columbus Road Vertical Lift Bridge, Cuyahoga County, OH.** *Mechanical Engineer* during the rehabilitation and partial replacement of the Columbus Road Vertical Lift Bridge over the Cuyahoga River. This bridge was originally built in 1940 and was last rehabilitated in 1999. Provided field installation verification and inspection, foundation analysis and soil and slope investigation.
03/10 – 09/10	**West 3rd Vertical Lift Bridge Rehabilitation.** *Mechanical Engineer.* TranSystems conducted a study to assess the integrity and reliability of the operating system at the West 3rd Street Bridge, which was prompted by reported recurring operational problems after the rehabilitation of the bridge including noted problems with the electrical system such as frequent fuse failures, warning and barrier gate failures, electrical cable issues, bridge seating and span balance issues. TranSystems developed a coordinated mechanical and electrical approach to assess the adequacy of the system design as well as its implementation in the field to determine those components and/or systems that were likely contributing to the operational problems. Recommendations were made to address all issues found.

08/17 – 02/19	J.A. Wintzell Memorial Bridge Vertical Lift, Alabama DOT, Bayou La Batre, AL. *Mechanical Engineer* for the design of span lock machinery for a span drive vertical lift bridge. This bridge is subject to high water events during a 100-year flood and during the last high water event, the span locks were damaged. This rehabilitation was designed to replace the span locks with new span locks that will not be damaged during a 100-year flood. Mechanical design included replacing the span lock machinery including preparation/review of calculations, design and drawings, specifications and cost estimates.
05/08 – 10/13	Historic Ortega River Bascule Bridge Rehabilitation, FDOT District 2, Jacksonville, FL. *Mechanical Engineer.* This rehabilitation of the Ortega River Bascule Bridge consisted of the replacement of numerous components of the mechanical and electrical systems, including replacement of the control console, system and rail to provide more space in the existing control house; replacement of the existing drives; a new relay-based control system; upgrading the span drive and lock machinery; replacement of span support machinery components as needed to meet all AASHTO requirements and eliminate failure of pintles; replacement of the existing CCTV system; and replacement of the existing traffic warning gates and signals.
02/19 – Present	Asset Management for Movable Bridges, SCDOT, SC. *Mechanical Engineer* for the inspection of movable bridges as part of an SCDOT asset maintenance contract. Inspections of movables are performed biennially and consist of trunnion bascule and swing bridges with conventional gear drives and hydraulic drives. Work includes inspecting all machinery, including span drive machinery, span support machinery, span locks, traffic gates and barriers, taking measurements of the open gearing, drive bearings, trunnion bearings, span locks, and taking pressure gauge readings.

Firm employed by	TranSystems		Meet MPR No. 7
Name	Lawrence Kirchner, PE	Years of relevant experience with this employer	8
Title	Principal, Sr. Vice President, National Bridge Practice Leader	Years of relevant experience with other employer(s)	27
Degree(s) / Years / Specialization		MBA / 2000 / Management Accounting, DePaul University BS / 1987 / Engineering Science and Mechanics, Virginia Polytechnic Institute and State University	
Active registration number / state / expiration date		PE.0031409 / LA / Exp. 03/2024	
Year registered	1995	Discipline	Structural Engineering
Contract role(s) / brief description of responsibilities.		Bridge Design/Rehab/Ratings/Inspection/Instrumentation/Peer Review	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Kirchner is a Senior Structural Engineer and firm Principal. Larry has 34 years of experience in structural design and project management for a wide range of bridge and roadway construction, rehabilitation, and widening projects, including movable bridges throughout the US. He has been responsible for performing structural inspections of historic bridges; developing Bridge Condition Reports; generating type, size, and location plans; and preparation of contract plans, special provisions and estimates.
11/11 – 12/13	**Torrence Avenue Vertical Lift Bridge Rehabilitation, Chicago DOT, Chicago, IL.** *Project Manager/Contractor.* Coordinating Engineer that was responsible for reviewing all engineering submittals to the contractor and providing construction engineering oversight for the rehabilitation of the Torrence Avenue Bridge lift span over the Calumet River in Chicago. After more than 70 years in operation, the structure experienced major deterioration to the stringers, floor beams, and chord members, and underwent a major rehabilitation to the lift span truss. The complete bottom chord and floor systems were replaced, and all electrical and mechanical components were rehabilitated. Larry, acting as the coordinating engineer for the $25 million Chicago Department of Transportation rehabilitation, oversaw all engineering submittals prior to review by the City of Chicago and the city's Resident Engineer. He also performed detailed structural analyses of the general contractor's means and methods of construction, as well as providing engineering and design recommendations as needed by the contractor. Larry reviewed steel shop drawings and provided detailed analyses of the contractor's demolition and erection scheme. He coordinated between multiple engineering disciplines and subcontractors to make sure work was performed accurately and of the highest quality.
09/13 – 05/14	**Van Buren Street Bridge Rehabilitation, Chicago DOT, Chicago, IL.** *Project Manager* for Phase I (preliminary) engineering services for the rehabilitation of this Chicago-style, double-leaf, trunnion type bascule bridge. The bridge was operable but rated in serious condition. Built in 1956, it replaced one of the original Scherzer Rolling Lift bridges from the late 1890s. It has an overall length of 267 feet, a roadway width of 44 feet, and a deck width of 69 feet. As part of the preliminary engineering design phase, Larry participated in and oversaw a full site inspection, including evaluation of the structural, mechanical, and electrical systems. Additional inspection areas included architectural elements, environmental, detailed survey, and underwater inspection. The structural inspection included an in-depth inspection of the existing deck, sidewalks, gratings, railings, steel superstructure, substructure, and adjacent river walls.

03/03 – 05/05	Division Street Bascule Bridges, Chicago DOT, Chicago, IL. *Project Structural Engineer*. Provided design services for bridges spanning the North Branch of the Chicago River and the North Branch Canal at Goose Island in Chicago. Larry performed work as part of the Project Development Report, including structural inspection of the two historic bascule bridges onto Goose Island, development of the Bridge Condition Reports, and development of the TS&L plans. In addition, he performed a feasibility study for the relocation of one of the bridges to Blackhawk Boulevard just north of Division Street. The Phase I engineering included construction staging alternatives for temporary run-around structures and design considerations incorporating a future bike path and riverwalk within the substructure. Several innovative signature bridge concepts were evaluated, including a cable-stayed structure at the North Branch of the Chicago River and a tied-arch structure at the North Branch Canal.
02/15 – 08/16	Neches River Vertical Lift Bridge, Texas DOT, Beaumont, TX. *Project Structural Engineer*. Conducted a Freight Movement Feasibility Study to evaluate rail movements and operations near the existing Neches River crossing. TranSystems advanced the Neches River Bridge Study to the geometric design level (30% design) and environmental clearance to improve rail operations and support rail-based industry. This project included the evaluation of a new railroad vertical lift bridge over the Neches River with vertical clearance requirements of 150 ft. and horizontal clearance of 200 ft. Provided technical information in support of the review of all environmental resources required by FRA. Conceptual engineering services for the development of four rail alternatives, development of environmental constraint maps, an environmental document, and supporting technical reports. We completed the 30% structural, mechanical, and electrical design for the preferred vertical lift bridge on an adjacent alignment.

Firm employed by	TranSystems		Meet MPR No. 5
Name	Michael Elza, PE	Years of relevant experience with this employer	2
Title	Assistant Vice President, Movable Structures M&E Team Leader	Years of relevant experience with other employer(s)	24
Degree(s) / Years / Specialization		BS / 1995 / Mechanical Engineering, University of Florida	
Active registration number / state / expiration date		PE.0039135 / LA / Exp. 03/2023	
Year registered	2001	Discipline	Mechanical Engineering
Contract role(s) / brief description of responsibilities.		Bridge Design - Mechanical	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Elza is a Senior Mechanical Engineer. Mike will provide mechanical inspections, repair/improvements, alternatives analysis, construction plans and historic bridge considerations for this project. He provides a valuable combination of engineering and management experience, coupled with unmatched experience with vertical lift bridges. He applies proven organizational, analytical, and communication skills on every project. Mike has provided machine design services for the movable bridge industry including mechanical power transmission equipment and hydraulic machinery. His heavy movable structures experience, specifically with vertical lift bridges, includes design and inspection services, as well as floating draw spans and ferry ramps.
05/21 – Ongoing	**Bridgeport Vertical Lift Bridge - Br. No. 02475.** *Mechanical Engineer of Record* for the rehabilitation of this tower drive vertical lift bridge. Project includes rehabilitation of gearboxes, guides, and live load supports with replacement of counterweight wire ropes, brakes, couplings, and buffer cylinders. Includes rebalancing of bridge. Project includes development of design calculations, technical specifications, construction cost estimate, and construction schedule. Post design services include shop drawing review, RFI review, shop inspections, and site inspections.
11/10 – 04/15	**Historic Main Street Vertical Lift Bridge over the St. Johns River, FDOT D2, Jacksonville, FL.** *Mechanical Engineer of Record* for the counterweight trunnion/sheave replacement study for this span drive vertical lift bridge. Including investigation for the replacement of the wire ropes and end attachments to allow for individual tension adjustment of the ropes. Responsible for investigation and report preparation.
05/21 – Ongoing	**Kansas City Terminal Railroad Vertical Lift Bridge Kansas City Terminal Railroad, KS.** *Mechanical Engineer of Record* for new operating system for this double deck four track vertical lift railroad bridge. Design includes unique strand jack lifting system to raise and hold three bridge spans out of the flood zone as necessary during the rainy season. The largest span is 300 feet long and weights over 7M pounds. All three spans must be raised and held without the use of counterweights. Project includes development of design calculations, technical specifications, construction cost estimate, and construction schedule. Post design services include shop drawing review, RFI review, shop inspections, and site inspections.
03/12 – 11/17	**Burlington Canal Vertical Lift Bridge, Public Works and Government Services Canada, Hamilton, Ontario.** *Mechanical Engineer of Record and Team Leader* for the mechanical rehabilitation of the main drive machinery. Performed detail design for the replacement of the primary open gear set with an enclosed differential reducer with auxiliary drive. Performed detailed design for the replacement of the motor and machinery brakes. Developed design calculations, technical specifications, construction cost estimate, and construction schedule. Provided post design services including shop drawing review, RFI review, shop inspections, and site inspections. Also included emergency response for auxiliary counterweight failure.

12/10 – 08/11	Vertical Lift Railroad Bridge Over Cape Cod Canal, USACOE, Buzzards Bay, MA. *Lead Mechanical Engineer/Team Leader* for the in-depth inspection, including strain gauge balance testing wire ropes load sharing of this tower drive vertical lift railroad bridge. Responsible for hands-on inspection and preparation of report.
01/07 – 10/07	NJ State Vertical Lift Bridge Inspections, New Jersey DOT, NJ. *Lead Mechanical Engineer* for the inspection of one vertical lift and two bascule bridges for NJDOT. Performed hands-on mechanical inspections and prepared reports.
08/04 – 08/15	Historic West Columbus Drive Swing Bridge Design, Hillsborough County, Tampa, FL. *Mechanical Engineer of Record* responsible for the conceptual, preliminary, and detailed designs for the mechanical rehabilitation of this historic 1926 bob-tailed swing bridge. Developed design plans, calculations, technical specifications, and construction cost estimate. Provided post design services including shop drawing review, RFI review, and site inspections.
03/13 – 12/15	Historic Kennedy Street Rolling Lift Bascule Bridge, Hillsborough County, Tampa, FL. *Mechanical Engineer of Record* for the rehabilitation of this historic rolling lift bascule bridge. Developed design plans, technical specifications, calculations, and construction cost estimate. Provided post design services including shop drawing review, RFI review, and site inspections.

Firm employed by	TranSystems			Meet MPR No. 6
Name	Nicholas Sprankle, PE		Years of relevant experience with this employer	9
Title	Sr. Electrical Engineer		Years of relevant experience with other employer(s)	8
Degree(s) / Years / Specialization			BS / 2005/ Electrical Engineering, University of Pittsburgh	
Active registration number / state / expiration date			PE.0045388 / LA / Exp. 09/2023	
Year registered	2013	Discipline	Electrical Engineering	
Contract role(s) / brief description of responsibilities.			Bridge Design – Electrical	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Sprankle is a Senior Electrical Engineer. Nick will provide electrical inspections, repair/ improvements, alternatives analysis, and construction plans for this project. He has experience in inspection, design, hydraulics and construction management of movable bridges, including vertical lift bridges. Nick has strong knowledge of engineering principles to design, fabricate, install and/or repair general electromechanical products. He has performed numerous electrical inspections, testing, evaluation, installation, rehabilitation and maintenance of operating equipment for movable bridges and other heavy movable equipment. He has served as Team Leader on successful projects for clients including FDOT, NJDOT, CTDOT, DelDOT, MassDOT, and Maryland DOT.
04/08 – 09/11	**Columbus Road and Willow Street Vertical Lift Bridges, Cuyahoga County, Cleveland, OH.** *Electrical Engineer* provided electrical engineering design services for the rehabilitation of the electrical control, power, and drive systems for Columbus Road (a span-drive vertical lift bridge) and for Willow Street (a tower-drive vertical lift bridge). Scope included design of a PLC system with a relay backup. Scope included development of a complete specifications package. The Columbus Road Bridge was identified as a Select Bridge in ODOT's Ohio Historic Bridge Inventory and determined eligible for the National Register.
05/08 – 10/13	**Historic Ortega River Bascule Bridge, FDOT District 2, Jacksonville, FL.** *Electrical Engineer.* Scope included providing plans and specifications for complete replacement of the bridge electrical power, control, and variable speed drive systems. The control system uses relay logic with a Programmable Logic Controller for monitoring. The drive system uses current flux vector, variable speed drive technology.
02/15 – 08/16	**Neches River Vertical Lift Bridge, Texas DOT, Beaumont, TX.** *Electrical Engineer*. TranSystems was tasked with conducting a Freight Movement Feasibility Study to evaluate rail movements and operations near the existing Neches River crossing (ICW). TranSystems advanced the Neches River Bridge Study to the geometric design level (30% design) and environmental clearance to improve rail operations and support rail-based industry in the region. This project included the evaluation of a new railroad vertical lift bridge over the Neches River with vertical clearance requirements of 150 feet and horizontal clearance of 200 feet for this navigable waterway. TranSystems provided technical information in support of the review of all environmental resources required by the FRA. TranSystems provided conceptual engineering services for the development of four rail alternatives, development of environmental constraint maps, an environmental document, and supporting technical reports (specific to one Build alternative and the No Build). TranSystems completed the 30% structural, mechanical, and electrical design for the preferred vertical lift bridge on an adjacent alignment.

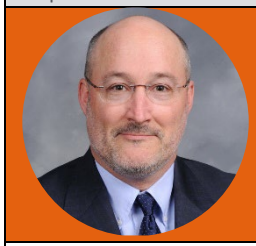
08/17 – 02/19	J.A. Wintzell Memorial Bridge Vertical Lift, Alabama DOT, Bayou La Batre, AL. *Electrical Engineer*. TranSystems designed plans and specifications for replacement of the approved traffic gates, traffic barriers and span lock systems at the J.A. Wintzell Memorial Bridge in Bayou La Batre on SR-188 in Mobile County, Alabama. We reviewed bridge materials supplied by ALDOT, performed a field assessment of the span lock system, traffic gates and traffic barriers of the vertical lift bridge, and submitted a preliminary design report describing findings.
04/10 – 03/13	Movable Bridge Design Services, Ohio DOT, City of Cleveland, OH. *Electrical Engineer.* Responsible for assessing the integrity and reliability of the operating systems of three movable bridges: Willow Avenue Lift Bridge, Center Street Swing Bridge and Carter Road Lift Bridge. This project was on a tight schedule and involved providing recommendations as required to maintain and/or improve the operable and structural conditions of these structures.
05/15 – Ongoing	Metro-North Railroad Bridge Inspections, Connecticut DOT, Newington, CT. *Electrical Engineer.* TranSystems is providing the annual inspection of approximately 200 Metro-North railroad bridges, including five movable bridges; underwater inspections; mechanical, and electrical inspections; as well as inspection of the high towers (supporting the high voltage catenary lines) at the movable bridges. The scope of work includes assigned bridge load rating evaluations, as well as other activities such as nondestructive testing and ultrasonic testing as directed in CTDOT's Railroad Bridge Inspection Manual.
12/10 – 08/11	Vertical Lift Railroad Bridge Over Cape Cod Canal, USACOE, Buzzards Bay, MA. *Lead Mechanical Engineer/Team Leader* for the in-depth inspection, including strain gauge balance testing wire ropes load sharing of this tower drive vertical lift railroad bridge. Responsible for hands-on inspection and preparation of report.
01/07 – 10/07	NJ State Vertical Lift Bridge Inspections, New Jersey DOT, NJ. *Lead Mechanical Engineer* for the inspection of one vertical lift and two bascule bridges for NJDOT. Performed hands-on mechanical inspections and prepared reports.
08/04 – 08/15	Historic West Columbus Drive Swing Bridge Design, Hillsborough County, Tampa, FL. *Mechanical Engineer of Record* responsible for the conceptual, preliminary, and detailed designs for the mechanical rehabilitation of this historic 1926 bob-tailed swing bridge. Developed design plans, calculations, technical specifications, and construction cost estimate. Provided post design services including shop drawing review, RFI review, and site inspections.
03/13 – 12/15	Historic Kennedy Street Rolling Lift Bascule Bridge, Hillsborough County, Tampa, FL. *Mechanical Engineer of Record* for the rehabilitation of this historic rolling lift bascule bridge. Developed design plans, technical specifications, calculations, and construction cost estimate. Provided post design services including shop drawing review, RFI review, and site inspections.

Firm employed by	TranSystems		Meet MPR No. 7
Name	Steven Shaup, PE	Years of relevant experience with this employer	30
Title	Sr. Vice President, Division Leader	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		MS / 1993 / Structural Engineering, University of California BS / 1992 / Structural Engineering, University of California	
Active registration number / state / expiration date		PE.0045298 / LA / Exp. 09/2023	
Year registered	1997	Discipline	Structural Engineering
Contract role(s) / brief description of responsibilities.		Bridge Design/Rehab - Electrical	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Shaup is a Senior Structural Engineer. Steve has unparalleled experience in new design, rehabilitation, analysis and inspection of all types of movable bridges, including vertical lift bridges. He has served as a project manager, project/structural engineer or senior inspector for numerous inspections, load rating, rehabilitation, new design, and miscellaneous services, many including complex and movable bridges. Steve is a co-author of the AASHTO "Guidelines for Historic Bridge Rehabilitation and Replacement" and has been involved in many statewide historic bridge surveys and management plans.
04/08 – 09/11	**Columbus Road Vertical Lift Bridge, Cuyahoga County, Cleveland, OH.** *Technical Advisor* for the rehabilitation of the 1940 vertical lift Columbus Road bridge over the Cuyahoga River. The project included replacement of the lift span, all mechanical and electrical systems, and rehabilitation of towers, existing piers and abutments. The bridge was identified as a Select Bridge in ODOT's Ohio Historic Bridge Inventory and determined eligible for the National Register.
03/09 – 12/11	**Historic SR 5 Main Street Vertical Lift Bridge, FDOT District 2, Jacksonville, FL.** *Project Manager and Project Engineer* for the analysis of the existing Main Street vertical lift bridge over the St. Johns River in downtown Jacksonville, which included a study of the feasibility for installing truss protection, replacing the existing lift span open steel deck with an Exodermic deck, evaluation of the towers to support current and possible future loadings, an evaluation of deterioration at flanking truss expansion bearings, an evaluation of the existing lift span buffer cylinders, a condition assessment with recommendations for remedial action for the uphaul and downhaul ropes, and a complete load rating of the bridge for as-inspected conditions, including a special analysis of the gusset plates for the primary truss members based on FHWA draft guidelines using Load and Resistance Factor Rating (LRFR) methods.
02/15 – 08/16	**Neches River Vertical Lift Bridge, Texas DOT, Beaumont, TX.** *Technical Advisor.* TranSystems was tasked with conducting a Freight Movement Feasibility Study to evaluate rail movements and operations near the existing Neches River crossing (ICW). We advanced the Neches River Bridge Study to the geometric design level (30% design) and environmental clearance improving rail operations and supported the rail-based industry. The project included evaluation of a new railroad vertical lift bridge over the Neches River with vertical clearance requirements of 150 feet and horizontal clearance of 200 feet for this navigable waterway. We provided technical information supporting the review of all environmental resources required by FRA. TranSystems provided conceptual engineering for the development of four rail alternatives, development of environmental constraint maps, an environmental document, and supporting technical reports (specific to one Build alternative and the No Build). We completed the 30% structural, mechanical, and electrical design for the preferred vertical lift bridge on an adjacent alignment.

09/01 – 12/09	Historic Movable Bridge of Lions Rehabilitation, FDOT District 2, St. Augustine, FL. *Senior Structural Engineer* for the design of the new movable span superstructure and existing bascule piers rehabilitation/strengthening. Work also included design of a temporary lift span and piers to be used during construction at the permanent bridge. Responsible for the historic evaluation of the existing bridge, listed on the National Register of Historic Places, and worked closely with the department and SHPO to obtain the determination of No Adverse-Effect on this property. Steve's responsibilities included design and back-checking of calculations for bridge components, plans and HAER-level historic documentation.
09/01 – 12/09	Dania Beach Blvd. (SR A1A) over ICWW Bridge Rehabilitation, FDOT District 4, Hollywood, FL. *Senior Structural Engineer* for the complete the rehabilitation design and post-design services for the double-leaf bascule bridge carrying SR A1A over the Intracoastal Waterway in Hollywood, Florida. Work included structural, mechanical, and electrical engineering, as well as architectural improvements to the control house. The project focused on bridge maintenance repairs due to deterioration and extending the life of the bridge, as well as ensuring reliable operation. TranSystems' design included new epoxy overlays on the approach spans, new cover plates for the bascule girders, live load shoe refurbishment, open gear replacement and span balancing.
05/08 – 10/13	Historic Ortega River Bascule Bridge Rehabilitation, FDOT District 2, Jacksonville, FL. *Project Manager* for the rehabilitation of the Ortega River Bridge, including the replacement of numerous components of the mechanical and electrical systems, replacement of the control console and control system with a control rail to provide more space in the existing control house, replacement of the existing drives, a new relay-based control system, upgrading the span drive and span lock machinery and replacement of span support machinery components as needed.
01/09 – 12/09	Guidelines for Historic Bridge Rehabilitation and Replacement Project 25-25 Task 19, NCHRP. *Project Engineer.* The report includes a literature search, findings of a survey on the current state of historic bridge rehabilitation or replacement decision making, and nationally applicable decision-making guidelines for historic bridges.

Firm employed by	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS		Meet MPR No. 7
Name	Jonathan McGormley, PE, SE	Years of relevant experience with this employer	28
Title	Principal	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization		MS / 1994 / Civil Engineering, Purdue University BS / 1992 / Civil Engineering, University of Cincinnati	
Active registration number / state / expiration date		PE 43912 / LA / Exp. 03/2024; NBIS Certified Team Leader and Program Manager; NHI 130078 - Fracture Critical Inspection Techniques of Steel Bridges; NHI 130055 - Safety Inspection of In-Service Bridges (& Refresher 130053); ATSSA Traffic Control Technician Training/ TC Supervisor Training	
Year registered	2019	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities.		Movable/Fixed Bridge Design/Inspection/Ratings/Instrumentation/Peer Review	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. McGormley will fulfill MPR7, leading WJE's structural engineering including instrumentation and testing, bridge inspections, and repair design. Mr. McGormley is experienced in the inspection and evaluation of steel bridge structures with an emphasis on fatigue and fracture problems. He is experienced in visual, magnetic particle, and ultrasonic testing techniques and has overseen bridge retrofit projects in which WJE personnel were responsible for self-performing the work. Mr. McGormley has conducted numerous instrumentation and field-testing projects to better characterize the behavior of structures and is experienced in the finite element modeling of steel, concrete, and aluminum structural members.
07/19 – Ongoing	**Danziger Lift Span Bridge, US 90, over the Industrial Canal, New Orleans, LA.** *Project Manager*. Responsible for overseeing the inspection of portions of the lift span contributing to reported operational issues, an in-depth inspection of the lift bridge machinery and electrical systems, and development of repairs to restore the bridge's long-term functionality and reliability. Oversaw the development of a unique monitoring and sensor installation plan, the installation of instrumentation and monitoring equipment, and the creation of a web-accessible reporting platform to evaluate the bridge's operations over an extended period. Assisted with development of plans and specifications to address emergency repairs including the installation of polyester polymer concrete lift span orthotropic deck overlay repairs, replacement of failed pinion bearings, elimination of lift span-to-approach span contact issues, and the improvement of the lift span seating by counterweight movements and air buffer repairs. Bridge monitoring is ongoing.
05/19 – 08/19; 08/20 – Ongoing	**I-255 Jefferson Barracks Bridge over the Mississippi River, Emergency Repairs, Mehlville, MO.** *Project Manager.* Responsible for emergency repairs and subsequent rehabilitation repair design. Following the discovery of a six-foot-long crack in the steel tie girder during a fracture critical inspection, performed an in-depth inspection of similar details, obtained material samples for laboratory testing, coordinated emergency repairs, oversaw repair installation, and prepared investigation report. Completed bridge rehabilitation plans for the twin, tied-arch structures with construction ongoing.
03/21 – Ongoing	**Luling Bridge Deck Overlay Repair Consultation, St. Charles Parish, LA.** *Project Manager*. Responsible for revising the project specifications and providing quality control assistance for the repair of an orthotropic deck overlay system comprising and epoxy underlayment with a SFRC overlay on the cable-stayed spans. Installed a long-term monitoring system to evaluate the performance of the overlay repairs.

02/19 – Ongoing	US 90 over Bayou Ramos, St. Mary Parish, LA. *Project Manager*. Leading the investigation of delayed end cracking of precast, prestressed concrete (PPC) girders. The project includes the evaluation of previously collected monitoring data, development of a detailed finite element model to examine crack initiation and repair options, inspection of existing retrofits, laboratory testing of CFRP repairs, and development of a trial retrofit program.
09/21 – Ongoing	I-10/310 Bonnet Carré Fire Damage Repair, St. Charles Parish, LA. *Project Manager*. Overseeing the emergency inspection and load rating of the PPC girders, substructures, and bridge deck damaged by fire. Developed repair scope of work and estimated probable construction costs. Preparation of repair drawings and specifications ongoing.
12/21 – Ongoing	Jefferson St. Bascule Bridge Rehabilitation, Joliet, IL. *Project Manager*. Overseeing the rehabilitation of structural, mechanical, and electrical components of this rolling Scherzer lift bridge. Inspection and design work ongoing.
02/19 – 07/19	Lake Shore Drive Bridge over the Chicago River, Girder Fracture Investigation, Chicago, IL. *Project Manager*. Leading the investigation, stabilization, and repair installation after the bridge experienced two girder fractures related to corrosion.
10/18 – 01/19	Sunshine Bridge over the Mississippi River, St. James Parish, LA. *Project Manager*. Responsible for the development and implementation of a monitoring plan to provide information regarding redistribution of loads during the installation of repairs to the truss bottom compression chord damaged by impact. Responsible for the design of the jacking system, review of member repair design, site observations, preparation of shop and jacking procedure drawings, field technical assistance, and chord jacking operations oversight.
03/15 – 06/17	IH-345 Inspection, Analysis, and Retrofit Design, Dallas, TX. *Project Manager*. Responsible for a fracture critical inspection of the 1.6-mile-long steel two-girder structure connecting I-35, I-45, and US 75 with local city streets, visual examination of substructure elements, and a visual and exploratory study of the PT deck. Oversaw instrumentation and field load testing for finite element method model calibration and trial retrofit installations. Developed fatigue retrofit contract documents and provided on-site construction observation and technical support throughout construction.
03/14 – 12/14	S. Halsted Street over the Little Calumet River, Chicago, IL. *Project Advisor*. Performing QA/QC for load ratings and gusset plate rehabilitation design to address live load rating concerns for this steel truss bridge.
09/13 – 09/13	Grand Avenue Bascule Bridge, Chicago, IL. *Project Engineer*. Responsible for gusset plate condition assessment, load ratings, and preliminary retrofit development for members of this double leaf bascule bridge with inadequate live load capacity.
04/10 – 04/11	Hylebos Bridge, Tacoma, WA. *Project Engineer*. Conducting the visual inspection of the double-leaf bascule bridge in preparation for its rehabilitation.
02/10 – 08/10	Scherzer Rolling Lift Bridges, Joliet, IL. *Project Manager*. Responsible for fracture critical inspections, gusset plate load rating, and repair recommendations of three lift bridges over the Illinois River.
03/08 – 06/09	I-5 Columbia River Bridge, Portland, OR. *Project Engineer*. Responsible for span balance and counterweight adjustments of lift span bridge. Documented number and location of concrete blocks, cored counterweights to determine voids, oversaw instrumentation of operating rope turnbuckles and pinion shafts, inspected bearings and guide rollers.

Firm employed by	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS		Meet MPR No. 6
Name	Gareth Rees, PE	Years of relevant experience with this employer	3
Title	Principal	Years of relevant experience with other employer(s)	51
Degree(s) / Years / Specialization		BS / 2017 / College Associateship Electrical Engineering (BS Electrical), Polytechnic of Wales (now University of South Wales)	
Active registration number / state / expiration date		PE.0040754 / LA / Exp. 09/2022	
Year registered	2016	Discipline	Electrical and Computer Engineer
Contract role(s) / brief description of responsibilities.		Bridge Rehab/Movable Bridge Design/Inspection	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Rees will fulfill MPR 6 and will serve as Lead Electrical Engineer responsible for task orders involving movable bridges. Mr. Rees is fully versed in all aspects of electrical engineering. His experience includes movable bridges, heavy industrial, electrical and electric utility generation, transmission and distribution. Mr. Rees' movable bridge experience spans more than thirty years and includes hundreds of movable bridge inspections ranging from cursory to in-depth inspections, failure analysis, and trouble shooting. His movable bridge engineering and design experience includes rehabilitation of existing bridges and design for new bridge electrical power and control systems.
07/19 – Ongoing	**Danziger Lift Bridge, New Orleans, LA.** *Lead Electrical Engineer*. Responsible for the inspection of relevant portions of the main lift span contributing to reported operational issues, an in-depth inspection of the lift bridge machinery and electrical systems, and development of repairs to restore the long-term functionality and reliability of the bridge. Prepared a new lift span skew control system design after the existing Selsyn components were removed from the bridge, developed electrical controls for the clutches with the span drive differentials, and provided recommendations for rehabilitation of the bridge.
08/15 – Ongoing	**3rd Street Bascule Bridge over Islais Creek, San Francisco, CA.** *Senior Electrical Engineer.* Responsible for the design of a replacement bridge that included the design of new electrical power and control systems to be integrated with the MUNI light rail traction power and signal system.
03/20 – 12/20	**Skew Detection System Replacement on Vertical Lift Bridges, LA.** *Principal Investigator*. Reviews alternatives for skew control, monitoring, and indication for tower drive vertical lift bridges based on effective management of skew and minimizing advanced electronic equipment. The study included a literature review, interviews with current owners and maintainers of vertical lift bridges, and interviews with industry control specialists experienced in skew control systems. As a result of the study, a preferred system of skew control that combines the use of direct skew measurement with an inclinometer for skew monitoring and trip indication, and indirect measurement of skew using encoders for controlling skew during operation was recommended. To minimize maintenance, mean-time-to-repair, and to limit dependency on PLC systems, it was recommended that control integration be achieved using SMART relays (that contain self-diagnostics) that may easily be replaced in the event of an issue.
03/18 – 02/20	**Charles Berry (Erie Ave) - Lorain 6 Bascule Bridge Rehabilitation, Lorain, LA.** *Movable Bridge Project Coordinator*. Responsible for the rehabilitation of the operating and support systems for this historic double leaf deck truss bascule bridge including complete replacement of the drive machinery and electrical power and controls control systems. Services included review,

	coordination and integration of the mechanical, electrical, and structural systems, review of all shop drawings for fit-up and constructability; shop inspection of critical components; field oversight during construction for critical assemblies; verification of final alignment of machinery; shop and field acceptance testing of the electrical system installation, commissioning of the installed operating systems, strain gage operational testing and power recordings to confirm satisfactory performance of the newly installed systems, and development of the Operations and Maintenance Manual.
04/13 – 10/19	Fort Madison Toll Bridge, Fort Madison, IA. *Engineer of Record and Project Manager*. Responsible for the rehabilitation of this double decker swing span bridge. The first phase was the design of a new aerial and submarine power cable installation, the new installation to be configured as redundant power sources. The design of the submarine cable installation included surveying of the existing submarine cable, routing of the new cable, and designing and specifying the cable. The work also included excavation requirements and developing an approved trenching system. The design and contract documents were developed based on staged construction to satisfy marine, railroad, and highway operations as well as Coast Guard and emergency services with respect to bridge operating outages. Construction services were also performed.
03/10 – 11/17	Sir Ambrose Shea Lift Bridge, Placentia, NL, Canada. *Engineer of Record*. Responsible for the design of a replacement tower drive vertical lift bridge with two duty motors and brakes in each tower and two sets of span locks. The bridge operator's control house is located at roadway level and remote from the bridge with CCTV surveillance and fiber optic communications to the towers. The PCL-based control system was designed with Hot standby redundant PLC's, a human machine interface (HMI), and control console and a redundant fiber optic communications transmission backbone. The electric services are distributed to state-of-the-art intelligent MCC's in each of the bridge towers and have internal communications capabilities and interface directly with the bridge control system PLC for bridge operation, drive monitoring, and data acquisition.
06/14 – 06/16	East Roundbunch Road over Cow Bayou, Orange County, TX. *Lead Electrical Engineer*. Responsible for designing new drives, controls, and field devices for the span drive machinery and the end wedge machinery as part of a rehabilitation of this historic structure to provide long-term reliable service. Span drive machinery was comprised of components with a proven history of utilization on movable bridges and was powered by an electric motor. Design and integration of new traffic control features, bridge and maintenance lighting, and a CCTV system were also included.
01/14 – 12/14	Haystack Bascule Bridge over Petaluma River, Petaluma, CA. *Engineer of Record and Lead Electrical Engineer*. Responsible for the relocation, rehabilitation, and reassembly of a single leaf rolling lift bascule railroad bridge. The designed bridge electrical systems consist of modern PLC logic control and flux vector variable frequency drives. The electric service and standby generator for bridge back-up power are located on one side of the navigable channel with the bridge operating system on the other. An under-channel installation was developed to connect the electric service equipment and associated communications to the bridge operating system. The system design included communications, fire life safety system design as well as the integration of the bridge operating system with the railroad train control.
10/10 – 02/12	Port Severn Swing Bridge 60 Rehabilitation, Port Severn, ON, Canada. *Lead Electrical Engineer*. Responsible for a bridge inspection, condition survey, engineering analysis and preparation of plans, specifications, and cost estimate.

Firm employed by	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS		Meet MPR No. 5
Name	John Williams, PE	Years of relevant experience with this employer	3
Title	Associate Principal	Years of relevant experience with other employer(s)	23
Degree(s) / Years / Specialization		BS / 1996 / Engineering Science, The Pennsylvania State University	
Active registration number / state / expiration date		PE.0044300 / LA / Exp. 09/2022	
Year registered	2020	Discipline	Mechanical Engineer
Contract role(s) / brief description of responsibilities.		Bridge Design/Rehab - Mechanical/Instrumentation	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Williams will fulfill MPR 5 and will serve as Lead Mechanical Engineer responsible for task orders involving movable bridges. Mr. Williams has more than twenty-five years of experience as a mechanical engineer and is recognized as a heavy movable structures specialist. His experience includes movable bridge construction coordination, directing heavy machinery field alignment, CEI, design of machinery for new structures and rehabilitation of existing structures, calculations, field and source inspection of machinery, strain gage testing and CAD management. His work includes strain gage balancing of more than fifty movable structures, inspection of more than one hundred movable structures, mechanical design services for more than twenty movable structures, construction engineering support more than fifty movable structures, and coordination of mechanical work on various bridge construction projects with structural and electrical work.
07/19 – Ongoing	**Danziger Lift Span Bridge, US 90, over the Industrial Canal, New Orleans, LA.** *Senior Mechanical Engineer*. Responsible for the inspection of portions of the lift span contributing to reported operational issues, an in-depth inspection of the lift bridge machinery systems, and development of repairs to restore the bridge's long-term functionality and reliability. Assisted with the development of a unique monitoring and sensor installation plan, the installation of instrumentation and monitoring equipment, and the creation of a web-accessible reporting platform to evaluate the bridge's operations over an extended period. Lead the development of plans and specifications to address emergency failed pinion bearing repairs. Performed strain gage testing to measure span balance, implemented weight changes and air buffer repairs to improve seating of the span, and determined through testing that the span drive differentials on both towers were not functioning properly, requiring work with the manufacturer to properly adjust the associated clutches.
08/15 – Ongoing	**3rd Street Bascule Bridge over Islais Creek, San Francisco, CA.** *Project Manager and Lead Mechanical Engineer.* Responsible for the design of a replacement bridge that included new span operating machinery, new span support machinery for the new leaf to be supported by the existing substructure and development of complex construction staging to address constraints for the number and duration of outages for MUNI light rail services. The project started with a detailed scoping inspection including a rating assessment of the structure, mechanical, and electrical systems that identified critical deficiencies leading to the decision to replace the bascule span superstructure in its entirety.
07/20 – 01/20	**St. Claude Avenue Bridge Construction Engineering Services, New Orleans, LA.** *Project Manager and Senior Mechanical Engineer*. Responsible for construction engineering services on an expedited basis to assist with the replacement of the second link pins which connect the counterweight truss to the balance link. Services included balance testing, design of the counterweight support system, development of a sequence of work for supporting the structure, unloading and removing the

	pins, completing the repairs and restoring the bridge to service within a marine navigation closure that was controlled by repairs to the adjacent lock. Mechanical engineering services were provided on an expedited basis due to the short time-period between the award of the project and the start of the marine navigation closure.
10/14 – 07/19	St. Peters Canal Swing Bridge Replacement, Cape Breton, NS, Canada. *Project Manager and Engineer of Record*. Overseeing the mechanical and hydraulic machinery design for this new hydraulically operated center bearing swing bridge. Responsibilities included design and backchecking of design calculations, plans preparation and detailing, and preparation of contract specifications and construction cost estimates during design. Responsibilities during construction included coordination of a team of mechanical and electrical engineers and inspectors to review and approve construction submittals and provide complete shop and field inspection of all mechanical/electrical aspects of the rehabilitation project.
08/08 – 08/18	Columbus Road Lift Bridge, Cleveland, OH. *Senior Mechanical Engineer*. Responsible for the rehabilitation project with the objective to maintain the historic character of the structure while significantly reducing maintenance requirements and improving overall system efficiency. A scoping inspection of the mechanical machinery determined suitability for continued long-term service and compliance with current AASHTO code requirements. The new mechanical design provides for complete replacement of all span support machinery, span drive machinery, and span locks.
07/14 – 02/18	Burlington Canal Lift Bridge, Hamilton, ON, Canada. *Movable Bridge Construction Specialist and Heavy Machinery Specialist*. Responsible for the contractor as part of a major electrical and minor mechanical rehabilitation of this critical vertical lift bridge. The electrical scope of work included complete replacement of the electrical power and control systems for the bridge including an aerial cable installation and skew control of the lift span. The mechanical scope of work included replacement of the high-speed end of the span drive machinery (brakes, speed reducer, shaft, and couplings). The scope of work required the contractor's engineer to sign and seal all submittals including shop drawings.
03/10 – 11/17	Sir Ambrose Shea Lift Bridge Replacement, Placentia, NL, Canada. *Project Manager and Mechanical Engineer of Record*. Responsible for the design of span drive machinery, span lock machinery and span support machinery for a new tower drive lift bridge. Duties included preparation and review of all relevant calculations (sized motor, gear tooth strength calculations, sized brakes, shaft calculations for moment and torsion, sized couplings, designed machinery base plates, sized span lock bars, sized span lock and lockbar actuator, performed fatigue analysis of trunnion shaft, and sized trunnion bearings), and preparation of design drawings, specifications, and cost estimates as part of design. During construction, responsibilities included review of contractor's shop drawings and procedures for conformance to contract requirements, disposition of non-conformance reports, and responding to requests for information or changes.
02/04 – 11/13	Mystic Bridge Rehabilitation, Connecticut Department of Transportation, Groton, CT. *Project Manager and Senior Mechanical Engineer*. Responsible for the rehabilitation of the historic single leaf, mechanically operated Brown bascule bridge. The mechanical design included upgrades to the capacity of the span drive machinery and design of a custom vehicular safety barrier gate to rise out of the roadway to protect errant vehicles from entering the waterway with the bridge raised yet remain visually unobtrusive with the bridge seated and open to vehicular traffic. Responsibilities included design and backchecking of design calculations, plans preparation and detailing, and preparation of contract specifications and construction cost estimates.

Firm employed by	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS		
Name	Curtis Schroeder, PhD, PE, SE	Years of relevant experience with this employer	3
Title	Senior Associate	Years of relevant experience with other employer(s)	8
Degree(s) / Years / Specialization		PhD / 2018 / Civil Engineering, Purdue University MS / 2011 / Civil Engineering, Purdue University BS / 2009 / Civil Engineering, Michigan Technological University	
Active registration number / state / expiration date		PE 44013 / WI / Exp. 07/2022; SE 081.008638 / IL / Exp. 11/2022; NHI 130078 - Fracture Critical Inspection Techniques of Steel Bridges; NHI 130055 - Safety Inspection of In-Service Bridges (& Refresher 130053); AWS Certified Welding Inspector; NDT Ultrasonic Technician - Level II; NDT Magnetic Particle Testing - Level II	
Year registered	2021; 2015	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities.		Sampling/Inspection/Instrumentation/NDT	

Experience dates	Experience and qualifications relevant to the proposed contract
	Dr. Schroeder will lead nondestructive testing of steel elements focusing on phased array UT (PAUT) and MT. He also will participate in sampling, bridge inspection, load rating, and development of welding procedures. Dr. Schroeder is skilled in advanced inspection techniques for the fabrication of new welded steel structures and the evaluation of existing steel structures using fitness for service (FFS) assessments. He completed his PhD with research on the use of phased array ultrasonic testing (PAUT) of steel bridge welds. Dr. Schroeder has eleven years of experience in the inspection and evaluation of steel bridges.
11/21 – Ongoing 06/19 – 07/20	**Purdue-Fort Wayne Pedestrian Bridge, Fort Wayne, IN.** *Project Engineer*. Assisting with UT and PAUT inspection of CJP welds, review of repair design calculations, load rating, and visual, MT, and UT inspection of repairs for this cable stay bridge.
01/21 – Ongoing	**Chicago Skyway Bridge, Chicago, IL.** *Project Engineer.* Assisting with visual inspection and load rating of primary members and gusset plates on steel deck truss bridge and steel piers.
11/21 – 02/22	**Susquehanna River Railroad Bridge, Havre de Grace, MD.** *Project Engineer*. Assisting with UT and PAUT inspection of 45 pinned connections of deck truss railroad bridge with known defect indications.
05/21 – 01/22	**SR 66 over I-64, Carefree, IN.** *Team Leader*. Responsible for special inspection of bridge containing 18 pinned hinge connections, including visual inspection, ultrasonic testing (UT), and magnetic particle testing (MT). Assisted with development and implementation of repairs for cracked pin plate fillet welds.
09/21 – 12/21	**Water Street Bridge, Pittston, PA.** *Project Engineer*. Responsible for the the UT of ten transfer pins in steel through-truss bridge.
08/21 – 10/21	**Black Hawk Bridge, Lansing, IA.** *Project Engineer*. Responsible for UT and PAUT of 21 pinned connections in a steel through truss and suspended spans. Assisted with fracture critical inspection of steel through-truss spans.
07/21 – 08/21	**Hernando de Soto Bridge, Memphis, TN.** *Project Engineer*. Responsible for the fracture investigation of a tie girder fabricated using T-1 steel in one of two tied arches. Performed UT, PAUT, and wet fluorescent MT of removed fracture specimen and steel cores. Performed QA verification of PAUT inspection procedure.

03/21 – 08/21 05/19 – 09/19	Jefferson Barracks Bridge, St. Louis, MO. *Project Engineer*. Responsible for the fracture critical inspection of the twin tied-arch bridges over the Mississippi River. Performed PAUT and MT inspection of tie girder welds during emergency repair work to estimate extent and size of cracking. Performed inspection of welded repairs as a certified welding inspector (CWI), assisted with follow-up MT inspection of tie girder welds, and reviewed weld repair design for rehabilitation project.
05/21 – 08/21 09/19 – 11/19	Burlington-Bristol Bridge Sheave Inspections, Burlington, NJ. *Project Engineer*. Performing PAUT of surface indications on thrust face of vertical lift bridge cast sheave and wet fluorescent MT inspection of cast sheaves. Assisted with development of repair recommendations.
04/21 – 06/21	Hawthorne Bridge, Portland, OR. *Project Engineer*. Assisting with UT and wet fluorescent MT inspection of vertical lift bridge trunnions, including through-bore examinations.
01/21 – 05/21	US 136 over Wabash River, Covington, IN. *Team Leader*. Responsible for special inspection of a post-tensioned, concrete trapezoidal box girder bridge that included visual inspection of epoxy-injected cracks in the web wall, ground penetrating radar (GPR) inspection to locate vertical shear reinforcement, and concrete core removal for testing of concrete strength.
01/21 – 04/21	Franklin Street Bridge, Michigan City, IN. *Project Engineer*. Assisting with the development of tread casting crack repairs and performing visual and MT inspection of field-welded repairs.
09/20 – 01/21	North Dakota DOT Pin and Link Inspections. *Project Manager*. Responsible for PAUT of 344 bridge pins on 17 bridges with both pin and hanger and pinned hinge connections.
10/20 – 11/20	Eagle's Nest Bridge, Hebron, ND. *Project Manager*. Responsible for repair of cracked pin plates at bridge pinned hinges. Developed weld repair solution and performed MT and CWI inspection of welded repairs.
08/20 – 11/20	Charles Berry Bridge, Lorain, OH. *Project Engineer*. Assisting with UT inspection of bascule bridge trunnions, including through-bore examinations.
04/20 – 06/20	US 6 over SR 331, Bremen, IN. *Team Leader*. Responsible or special inspection of bridge containing 14 pinned hinge connections, including visual inspection, UT, and MT. Assisted with development of repair recommendations for cracked pin plate fillet welds.
05/19 – 08/19 01/17 – 03/17	Delaware River Bridge, Bristol, PA. *Project Engineer*. Develop PAUT inspection plan to locate weld-filled holes in truss members within a gusset plate connection. Assisted with PAUT technician performance testing. (2017) Project Engineer to develop UT inspection plan to locate weld-filled holes in truss members. Assisted with investigation of bridge member fracture.

Firm employed by	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS		
Name	Leonard Phelps	Years of relevant experience with this employer	37
Title	Associate Principal	Years of relevant experience with other employer(s)	8
Degree(s) / Years / Specialization		BS / 1979 / Biology, University of Illinois BA / 1979 / Chemistry, University of Illinois MS / 1991 / Chemistry, DePaul University	
Active registration number / state / expiration date		SSPC (AMPP) Certified Protective Coatings Specialist, 2021-014-012 / Exp. 12/2025	
Year registered	2021	Discipline	N/A
Contract role(s) / brief description of responsibilities.		Sampling and Testing	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Phelps will serve as the Primary Coating Inspector. Mr. Phelps often serves as lead chemist on various project teams whose task is the resolution of construction-related materials problems. His work experience includes a variety of coating projects, such as failure analysis, condition assessment, corrosion protection, specification development, remedial coating recommendations, coating characterization, performance evaluation, and long-term durability assessment. Mr. Phelps routinely consults with clients regarding material acceptability and selection, surface preparation, coating application, specification explication, resolution of disputes, and litigation. He has been principal investigator in determining the cause of the failure of coatings applied to a variety of substrates of various commercial, governmental, and industrial structures and has been responsible for determining the cause of failure of other construction materials, such as adhesives, sealants, and roofing.
04/21 – 11/21	**Pacific Highway Land Port of Entry Envelope Renovation, Blaine, WA.** *Lead Chemist*. As part of the building envelope upgrade, provided project advice regarding the coating specification, minimum adhesion rating for tests on canopy coating, coating tape adhesion test results, and coating submittals.
08/21 – 08/21	**I-255 Jefferson Barracks Bridge over the Mississippi River, Emergency Repairs, Mehlville, MO.** *Lead Chemist.* The twin structures consist of a main span 910-ft long tied-arch structure with a steel box arch and a 12-foot-deep steel I-shaped tie girder. WJE completed bridge rehabilitation plans for both structures with construction ongoing. As Lead Chemist, assisted with bridge cable specification development and guidance regarding metalizing of the hanger cables that have experienced corrosion in the splash zone. The specification included trial testing to determine the proper blast media to prepare the surface without substantially removing the existing galvanized coating.
04/15 – 04/15	**I-20/I-55 Bridge over the Pearl River, Fatigue Retrofits, Jackson, MS.** *Lead Chemist.* The twin I-20/I-55 structures consist of precast prestressed concrete girder approach spans and a 3-span continuous welded plate girder river crossing with a maximum span length of 130 ft. MDOT retained WJE to develop and install fatigue retrofits to address distortion-induced cracking and to correct observed section loss in the girders at the abutments. As Lead Chemist, provided guidance for the surface preparation which included coatings containing lead and painting of the bridge repairs. Also advised on bridge coating repair issues including the removal of a holding primer prior to the application of a permanent coating system.
10/11 – 03/14	**Airport Cooling Tower, Confidential Client, Confidential Location.** *Project Manager, Lead Coatings Investigator.* Blistering and delamination of the polyurethane-based liner from interior concrete surfaces of upper and lower precast concrete cells of a cooling tower prompted a field investigation of the liner system, which included observations of the liner, sealant, and panel-

	to-panel conditions, as well as measurement of in-wall concrete relative humidity, determination of liner adhesion and coating thickness measurements. Samples of the liner and concrete substrate were also obtained and reserved for laboratory studies by Mr. Phelps. Laboratory studies of selected samples included visual, microscopic, and petrographic examinations; analyses by SEM/EDS; and analyses by infrared spectroscopy, and x-ray diffraction. Studies for acid-soluble chloride contents and conformational coating thickness were also conducted. The primary contributing cause to these delaminations was exposure of water to the backside of the liner at open, breached, weathered, and split sealant joints. Water at the backside interface can move past the backer rod to the sealant and create breaches in the sealant joints by freezing/ice jacking. Irregularities associated with installation techniques and methods may also contribute to the formation of mid-field blisters. Drawings and specifications were prepared to remediate the failed coating.
06/11 – 04/14	Reeds Island Bridge, Hilo, HI. *Primary Coating Inspector and Lead Chemist.* Prepare specifications for preparation and shop painting of new galvanized steel, and for the painting and repair of site elements in a damp, wet environment due to average rainfall of about 130 inches of rain per year and waterway below. Led efforts to perform site inspections of shop and field surface preparation and coating application. The field coating application was in a wet environment due to frequent Hilo rainfall, and waterway below.
10/12 – 11/12	Assessment of Weathering Steel Bridge Performance and Development of Inspection and Maintenance Techniques, Iowa Department of Transportation, Various Locations. *Primary Coating Advisor and Reviewer.* Responsible for the inspection and evaluation of weathering steel patinas for thirty-one bridges as part of research project to evaluate the performance of weathering steel bridge structures to identify types of structures that are most vulnerable to chloride contamination, identify locations on individual structures that are most susceptible, identify possible testing methods or inspection techniques, evaluate the effectiveness of water washing, and develop prioritization for washing based on the type and condition of the structure.
09/05 – 10/07	Aloha Stadium, State of Hawaii, Honolulu, HI. *Primary Coating Inspector and Lead Chemist.* Responsible for assessing the condition of the substrate and extant coatings applied to structural weathering steel of the Aloha Stadium. Subsequently developed specifications for the preparation and coating (zinc-rich primer; epoxy stripe, filler, and intermediate; and fluoropolymer finish-- brush, roller, and airless spray) of the salt contaminated structural weathering steel. Performed numerous site inspections of multiple phases of work required to prepare and coat the steel in a salt environment.
03/99 – 08/99	Chicago Skyway, Chicago, IL. *Project Manager and Primary Coating Inspector.* Performing a condition assessment of existing coatings and underlying steel substrate of the Calumet Bridge, viaducts, overpasses, and ramps. Adhesion testing, coating thickness measurement, review of substrate condition, and assessment of original substrate preparation were done.
12/96	Bridge of the Americas, Panama City, Panama. *Senior Chemist.* Overseeing the coating condition survey for the bridge condition evaluation of the riveted tied-arch bridge that runs east to west and spans a mile and a half over the Panama Canal. For the condition survey of the coating covering the bridge steel (an oil-based primer pigmented with red lead and top coated with aluminum pigmented alkyd-based coating), witnessed tests conducted by contractor on the existing coating system and he conducted random on-site evaluations of the existing coating on accessible areas of the bridge, including surface chloride analyses, peel-adhesion tests, and coating thickness tests. Performed a review of the coating specifications and proposed a method of surface preparation and a recoating system.

Firm employed by	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS		
Name	Mohamed ElBatanouny, PhD, PE, SE	Years of relevant experience with this employer	7
Title	Senior Associate	Years of relevant experience with other employer(s)	5
Degree(s) / Years / Specialization		PhD / 2012 / Civil Engineering, University of South Carolina MS / 2010 / Civil Engineering, University of South Carolina BS / 2008 / Civil Engineering, Helwan University	
Active registration number / state / expiration date		PE P24910 / IA / Exp. 12/2023; PE 11805073-2202 / UT / Exp. 03/2023; PE 48217 – 6 / WI / Exp. 07/2022; SE 081.008166 / IL / Exp. 11/2022	
Year registered	2018; 2018 2020; 2021	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities.		Sampling/Instrumentation/NDT	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. ElBatanouny will lead the nondestructive testing and evaluation of concrete elements He also will serve as an instrumentation engineer for structural monitoring and load testing task orders. Mr. ElBatanouny's background and interest is in condition assessment of existing structures, nondestructive evaluation, concrete material degradation, load testing, and full-scale experimental characterization. He has worked on a variety of projects, including structural evaluation, vibration analysis, and health monitoring and instrumentation. Prior to joining WJE, Dr. ElBatanouny served as Postdoctoral Fellow and Adjunct Professor at the University of South Carolina, where he participated in a number of sponsored research projects, including a four-year project sponsored by NIST entitled "Self-Powered Wireless Sensor Network for Structural Bridge Health Prognosis." In this research project, he used acoustic emission monitoring to develop a novel noninvasive approach for corrosion damage detection and classification in prestressed and post-tensioned concrete members.
04/19 – Ongoing	**Performance Evaluation of Polyester Polymer Concrete Overlays, Iowa Department of Transportation, Various Locations.** *Project Manager*. Responsible for inspection and condition documentation of two bridge decks using visual inspection, GPR, half-cell potential, impact echo, sounding, and material testing. The project included construction observation, assistance, and acceptance testing (rebound hammer and pull-off testing) during installation of the first polyester polymer overlays on Iowa DOT bridges. Follow-up inspections, every 2 years, and service life analysis are also being completed.
01/21 – Ongoing	**Condition Assessment of Approach Slabs, South Dakota Department of Transportation, Various Location.** *Project Manager.* Responsible for inspection and condition documentation of 15 bridge approach slabs using visual inspection, GPR, and elevation surveys. Also included is an assessment of differential settlement at the approach slabs.
07/19 – Ongoing	**Danziger Lift Span Bridge, US 90, over the Industrial Canal, New Orleans, LA.** *Project Engineer*. Assisting in the development of a unique monitoring and sensor installation plan, the installation of instrumentation and monitoring equipment, and the creation of a web-accessible reporting platform to evaluate the bridge's operations over time. The monitoring was designed to assess bridge span lift operations and included laser distance devices, linear potentiometers, strain gages, temperature measurements, ultrasonic distance measurements, and WiFi cameras. Assisted with the development of specifications for the installation of polyester polymer concrete lift span orthotropic deck overlay repairs.

03/21 – Ongoing	Luling Bridge Deck Overlay Repair Consultation, St. Charles Parish, LA. *Project Engineer*. Responsible for providing quality control assistance for the repair of an orthotropic deck overlay system comprising and epoxy underlayment with a SFRC overlay on the cable-stayed spans. Developed and installed a long-term monitoring system to evaluate the performance of the overlay repairs.
06/21 – 08/21	Nondestructive Evaluation of Industrial Equipment Foundation, Multiple Facilities, IN. *Project Manager*. Responsible for inspection and condition documentation of industrial equipment foundations to detect voiding condition using NDT methods including ultrasonic pulse velocity (UPV) and ultrasonic shear-wave tomography.
09/16 – 12/21	James K. Polk Building, Nashville, TN. *Project Manager*. Responsible for the long-term acoustic emission and vibration monitoring of post-tension wire breaks.
05/18 – 10/20	Ship Channel Bridge, Houston, TX. *Project Engineer*. Responsible to monitor girder movement in existing bridge.
12/18 – 02/19	Chicago Public School District, Chicago, IL. *Project Engineer*. Participating in the structural condition assessment; instrumentation and load testing of reinforced concrete roofs (several schools, date for one load test is included).
10/18 – 01/19	Sunshine Bridge, St. James Parish, LA. *Project Engineer*. Responsible for the development and implementation of a monitoring plan to provide information regarding redistribution of loads during the installation of repairs to the truss bottom compression chord damaged by impact. Assisted with field technical assistance and chord jacking operations oversight.
05/18 – 09/18	High-Rise Building, Chicago, IL. *Project Engineer*. Completing the condition assessment of post-tensioned slabs and concrete façade using multiple NDT techniques including GPR, rebound hammer, ultrasonic pulse velocity (UPV) and ultrasonic shear-wave tomography to detect voiding conditions within the concrete slabs.
03/15 – 06/17	IH-345 Inspection, Analysis, and Retrofit Design, Dallas, TX. *Project Engineer*. Responsible for instrumentation and field load testing for finite element method model calibration and trial retrofit installations of this 1.6-mile-long steel structure connecting I-35, I-45, and US 75 with local city streets. Instrumented bridge units using wireless instrumentation, reusable strain transducers, and string pots to install gages at over 200 locations. Oversaw rolling load tests to collect in-plane live load and fatigue response stinger and girder cross section.
04/16 – 10/16	TTC Steeles West Subway Station, Ontario, Canada. *Project Engineer*. Performing condition assessment of subway concrete walls using GPR, impulse response, and ultrasonic shear-wave tomography.
05/15 – 12/15	CTA Yellow Line Embankment Investigation, Skokie, IL. *Project Engineer*. Responsible for installing emergency tilt monitoring of temporary slope protection system after sudden collapse of an earthen embankment below an active mass transit rail line due to adjacent construction work.
05/11 – 12/15	Transport of Long Prestressed Concrete Girders, LA. *Project Engineer*. Responsible for the dynamic monitoring of two long prestressed girders during transport from the precast yard to their final installation at the bridge site. Worked on data evaluation of collected dynamic strain and inertial motion data. Evaluated data using dynamic 3D model with sensor mapping and interactive geolocation to correlate significant strain events with position and transport activity. Assisted in preparing report for the LADOTD and LTRC.

Firm employed by	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS		
Name	Steven Lauer, PE, SE	Years of relevant experience with this employer	11
Title	Senior Associate	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		MS / 2010 / Civil Engineering, Purdue University BS / 2009 / Civil Engineering, Purdue University	
Active registration number / state / expiration date		PE 062-068057 / IL / Exp. 11/2023; SE 081-007838 / IL / Exp. 11/2022; NBIS Certified Team Leader/Program Manager; NHI 130078 - Fracture Critical Inspection Techniques of Steel Bridges; NHI 130055 - Safety Inspection of In-Service Bridges (& Refresher 130053); Society of Professional Rope Technicians/ Level I; Transportation Worker Identification Credential (TWIC); Indiana Bridge Load Rating Engineer, IN000551-2022-ATL-F-LRE	
Year registered	2015; 2016	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities.		Bridge Design/Instrumentation/Inspection/Ratings/NDT	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Lauer will serve as Lead Instrumentation Engineer. He also will participate in load ratings and bridge inspections. Mr. Lauer has gained specialized experience through his involvement with the inspection, instrumentation, retrofit, load rating, and design of various steel, concrete, and timber bridge structures. To support these efforts, he has performed nondestructive testing in both the laboratory and on in-service bridges. Mr. Lauer is also well-versed in several structural analysis programs and has used his skills to perform reviews of structural adequacy and code compliance for a variety of steel, concrete, timber, and tensile membrane structures.
07/19 – Ongoing	**Danziger Lift Span Bridge, US 90, over the Industrial Canal, New Orleans, LA.** *Project Engineer*. Assisting in the development of a unique monitoring and sensor installation plan, the installation of instrumentation and monitoring equipment, and the creation of a web-accessible reporting platform to evaluate the bridge's operations over time. The monitoring was designed to assess bridge span lift operations and included laser distance devices, linear potentiometers, strain gages, temperature measurements, ultrasonic distance measurements, and Wi-Fi cameras.
02/22 – Ongoing	**Luling Bridge Deck Overlay Repair Consultation, St. Charles Parish, LA.** *Project Engineer.* Assisting with the development of a long-term monitoring system to evaluate the performance of the repairs the orthotropic deck overlay system comprising and epoxy underlayment with a SFRC overlay on the cable-stayed spans.
05/20 – Ongoing	**Washington Ave Bridge over the Mississippi River, Minneapolis, MN.** *Project Engineer*. Responsible for finite element modeling of the bridge structure, load rating, and the design and installation of the instrumentation system capable of recording strain, displacement, rotation, and temperature. Various scan rates record structure behavior during daily and long-term thermal cycles and live load events. The double-deck bridge has a pedestrian level, and the vehicular level was retrofitted to include light rail transit by adding trusses between the original girders and now has bearing seat distress.
08/21 – Ongoing	**Blackhawk Bridge carrying Iowa 9 over the Mississippi River, Lansing, IA.** *Project Manager*. Responsible for the wireless pier monitoring instrumentation system. Data is remotely accessed and presented on a website for the owner. This work followed

	our routine, in-depth, element-level, fracture critical, inspections that included ultrasonic testing (UT) of pins for the three truss spans and approach spans. An inspection report and repair recommendations were developed.
06/21 – 04/22	SR 62 over Pigeon Creek, Evansville, IN. *Project Engineer*. Responsible for bearing pad inspection and corresponding instrumentation system designed to aid in determining the cause of walking elastomeric bearings.
10/19 – 11/21	Sherman Minton Bridge - I-64 over the Ohio River, New Albany, IN. *Project Engineer*. Responsible for instrumentation and monitoring, crack arrest hole retrofit installation, and Team Leader of fracture critical and routine inspections of truss members using rope-access and structure climbing techniques of the double-deck bridge having tied arch trusses as the main spans and an approach span combination of deck/through trusses.
05/21 – 10/21	I-40 Hernando Desoto Bridge, Emergency Repairs, Memphis, TN. *Project Engineer*. Assisting the contractor in the tie girder fracture repairs for the I-40 Bridge, which was closed due to a partial section fracture. Installed emergency instrumentation utilizing rope-access techniques, mobilizing personnel and equipment to have a working web-accessible system with over 25 sensors functional in a week. Participated in the development of measurement and reporting procedures to be used during tensioning and de-tensioning of the temporary jacking system used for the tie girder repairs.
06/21 – 07/21	I-294 under St. Charles Road, Berkley, IL. *Project Manager*. Responsible for the evaluation of steel multi-beam structure directly exposed to vehicular fire to determine its fitness to return to service. Performed limited inspection, field hardness testing, and steel core extraction for benchtop hardness testing at WJE's Northbrook, IL laboratory and unilateral static tensile tests.
10/18 – 01/19	Sunshine Bridge over the Mississippi River, St. James Parish, LA. *Project Engineer*. Responsible for the development and implementation of a monitoring plan to provide information regarding redistribution of loads during the installation of repairs to the truss bottom compression chord damaged by impact. Assisted with the design of the jacking system, review of member repair design, site observations, preparation of shop and jacking procedure drawings, field technical assistance, and chord jacking operations oversight.
02/17 – 12/17	Joe Page Vertical Lift Span over the Illinois River, Hardin, IL. *Project Manager*. Responsible for bearing reaction determination via load cells and dynamic strain gage balance testing.
08/16 – 08/17	Michigan Avenue Bascule Bridge over the Chicago River, Chicago, IL. *Project Manager*. Responsible for construction project balance calculations and dynamic strain gage balance testing of this double deck, quadruple-leaf, bascule truss bridge with single-unit, side-by-side leaf pairs.
05/11 – 12/15	Transport of Long Prestressed Concrete Girders, LA. *Project Engineer*. Responsible for the dynamic monitoring of two long prestressed girders during transport from the precast yard to their final installation at the bridge site. Performed field instrumentation to monitor dynamic strain and inertial motion, which provided acceleration and rotational orientation of the girder with wireless communication. Evaluated data using dynamic 3D model with sensor mapping and interactive geolocation to correlate significant strain events with position and transport activity. Assisted in preparation of report to LADOTD and LTRC. Monitoring included wireless data collection from video, strain gages, thermocouples and gyroscopes.

Firm employed by	RA RAHMAN & ASSOCIATES, INC.		
Name	Ataur Rahman Bhatti, PE	Years of relevant experience with this employer	36
Title	President	Years of relevant experience with other employer(s)	20
Degree(s) / Years / Specialization		MS / 1979 / Civil Engineering, Tulane University BS / 1967 / Civil Engineering, Engineering University, Lahore, Pakistan	
Active registration number / state / expiration date		PE.0018643 / LA / Exp. 03/2023	
Year registered	1980	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities.		Bridge Design/Rehab/Ratings/Peer Review	

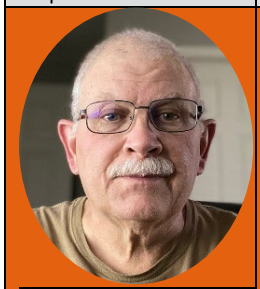
Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Bhatti has more than 45 years' experience as a consulting engineer, with 25 years as President of Rahman and Associates, Inc. Prior to establishing the firm, Mr. Bhatti was associates with other consulting firms in the State of Louisiana and Illinois. Mr. Bhatti has over 40 years' experience in the design of reinforced concrete, prestressed concrete, steel plate girder bridges, pile bent, column bent, substructures. In addition, Mr. Bhatti has comprehensive experience in the design of bridges consisting of curve steel girders, trapezoidal prestressed precast concrete girders, AASHTO girders, steel trusses on multiple concrete column bents and hammerhead column bents with reinforced concrete and post tensioned concrete caps. He has been associated with the design of of well over one hundred bridges, interchanges in Louisiana, Illinois.
2015 – 2017	**Lower Zachary Road Bridge Over Drainage Bayou, LA.** *Project Manager* for this project which included design of Preliminary & final plans for this bridge replacement. Final plans of the project are complete, and project is ready to move to bidding phase.
04/11 – 10/17	**Wisner Blvd. Railroad & 610 Overpass Orleans Parish, LA.** *Lead Designer and Overall-In-Charge*. Designed Preliminary & Final Plans for 13 span of Steel Girders & Concrete girders Overpass for I-610 and Norfolk Southern Railroad Corporation. The project has been completed in September 2017. Lead Designer and Overall-In-Charge of this $20 Million construction cost project. Provided construction support services and load rating.
2015 – Ongoing	**LA 21 – US 190 Tchefuncte River Widening, St. Tammany Parish, LA.** *Lead Designer and Overall-in-charge.* Supervising the design and plan preparation of preliminary and finals plans for widening of 21 spans (type III and steel girders) 43 ft. wide 1,411 ft. long existing bridge to 72 ft. wide bridge with new barrier railings and substructure. Project cost is estimated to be $18 Million.
09/14 – Ongoing	**Causeway-Earhart Traffic Interchange Preliminary Design, Jefferson Parish, LA.** *QA/QC.* Supervising the design and plan preparation of widening of elevated Causeway 25 steel girder span structure and new ramps tie-in on both sides of existing elevated structure. Also incharge of QA/QC of LRFR bridge rating calculations of existing superstructure and substructure.
12/14 – 12/16	**Off System Highway Bridge Program, Sauve Road Bridge Over Soniat Canal,Jefferson Parish, LA.** *Lead Designer and Overall-in-charge.* Supervised the design and plan preparation of single span bridge crossing the canal. Responsible for design of preliminary and final plans. Project cost is $2 Million.
2014	**I-210 Prien Lake Bridge, Lake Charles, La/Pier Protection Replacement.** *Lead Designer and Overall-in-charge*. Preliminary and Final Design and Contract Plans for Pier Protection System for $3 Million.

2014	Jefferson Parish DPW No. 2005-004-DR, Estelle Bridge Crossing Canal G, West bank Jefferson Parish, LA. *Lead Designer and Overall-in-charge.* Prepared preliminary and final plans for three spans 28 ft. wide and 160 ft. long concrete girder bridge on pile bents Review shop drawings for concrete girders. Project cost was $1.3 Million.
07/14 – Ongoing	Off Systems Highway, Mill Dollar/Hosmer Mill/Hwy. 41 Spur Bridges, St. Tammany Parish, LA. *Lead Designer and Overall-In-Charge*. Design of preliminary & final plans. Lead Designer and Overall-In-Charge of this project.
02/12 – 07/13	Metairie Court Bridge, Jefferson Parish, LA. *Lead Designer and Overall-In-Charge*. Designed preliminary & final plans. Performed hydraulic analysis by using DOTD program WSPRO and prepared hydraulic report for required bridge opening estimated pier and abutment scour depth, and backwater calculations.
2012 – 2013	Sunshine Bridge Pier 4 & 5 Fender Repairs, St. James Parish, ST. *Lead Structural Designer.* Inspected and designed retrofit for the damaged fender system of piers 4 & 5. Estimated cost $4 million. Lead Structural Designer of this project.
2010 – 2013	I- 210 Pier 24 & 25 Protection Replacement State. *Lead Designer and Overall-In-Charge.* Inspected existing fender system and proposed and designed new fender system one of kind in the state of Louisiana for Pier 24 & 25. Estimated cost $26 million. Lead Designer and Overall-In-Charge of this project.
02/06 – 07/08	Bayou St. John Bridge, Harrison Ave., Orleans Parish, LA. *Lead Designer and Overall-In-Charge.* Designed preliminary & final plans. Performed hydraulic analysis by using DOTD program WSPRO and prepared hydraulic report for required bridge opening estimated pier and abutment scour depth, and backwater calculations.
02/03 – 07/05	Bayou St. John, Mirabeau Avenue Bridge, Orleans Parish, LA. Designed preliminary & final plans. Performed hydraulic analysis by using DOTD program WSPRO and prepared hydraulic report for required bridge opening estimated pier and abutment scour depth, and backwater calculations.

Firm employed by	RA HAHMAN & ASSOCIATES, INC.			
Name	Tafoor Hameed, PE		Years of relevant experience with this employer	21
Title	Vice President		Years of relevant experience with other employer(s)	12
Degree(s) / Years / Specialization			BS / 1981 / Civil Engineering	
Active registration number / state / expiration date			PE.0030176 / LA / Exp. 09/2022	
Year registered	2002	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities.			Bridge Design/Rehab/Inspection	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Tafoor Ul Hameed has been with the firm since early 1999. He has designed numerous roadways, pedestrian and bicycle facilities, sewerage & drainage structures, bridge structures, and other soil supported, and pile supported structures. He has a broad knowledge of Plans, Specifications and Estimates and he is well experienced in construction management, on sites inspections and laboratory report reviews to ensure that construction work conforms to the project specifications.
09/14 – Ongoing	**Causeway-Earhart Traffic Interchange Preliminary Design, Jefferson Parish, LA.** *Assistant Project Engineer QA/QC*. Participated in design of widened elevated Causeway structure and new ramp tie-ins to elevated structure. Also responsible for QA/QC of LRFR bridge rating calculation of existing superstructure and substructure.
04/11 – 09/17	**Wisner Blvd. Railroad & 610 Overpass, Orleans Parish, LA.** *Assistant Project Manager*. Participated in design of preliminary & final plans for steel girder & concrete girder overpass for I-610 and Norfolk Southern Railroad Corporation. The construction of this project was completed in September 2017. $20 Million construction cost project.
05/05 – 12/07	**I-10 Causeway Interchange.** *Assistant Project Manager, QA/QC.* Participated in design of preliminary and final plans for VE Ramp, SCW Ramp, NCV Ramp, WNC Ramp & SEC Ramp.
05/05 – 12/07	**LA 523 Relocation, Caddo Parish, LA.** *Assistant Project Manager QA/QC*. Participated in design of preliminary and final bridge plans for two bayou crossings. 1) Sand beach bayou 9 span structure; 2) Bayou pier 10 span structure.
05/05 – 12/07	**Route La 66 Bridges, West Feliciana Parish, LA.** *Assistant Project Manager* for this project which required design of six concrete slab spans and quad beam spans Bridges and QA/QC.
2004	**I-10 Mississippi River Bridge Fender System Rehabilitation, Baton Rouge, LA.** *Assistant Project Manager*. Inspected pier fender system damaged by barge collision and prepared inspection report proposing rehabilitation and repairs. Also participated in producing plans and specifications for the fender rehabilitation.
2012 – 2013	**Sunshine Bridge Pier 4 & 5 Fender Repairs, St. James Parish, LA.** *Assistant Project Manager*. Inspected and designed retrofit for the damaged fender system of piers 4 & 5. Estimated cost $4 Million.
2010 –2013	**210 Pier 24 & 25 Protection Replacement State Project No. 450-30-0076.** *Assistant Project Manager.* The project required design of new pier protection for pier 24 & 25. Estimated cost $26 Million. Served as Assistant Project Engineer of this project.
2012 – Ongoing	**US 190 Over Mississippi River Bridge Cleaning, Painting & Repair Phase I & II.** *Assistant Project Manager.* Inspected the sub structure and designed retrofit for installation of new anchor bolts and rocker bearings. Estimated cost $80 million. Sub consultant to TRC. Served as Assistant Project Engineer of this project.
02/06 – 07/08	**Bayou St. John (Harrison Ave.), Orleans Parish, LA.** *Assistant Project Manager.* Project cost was $2.5 Million. Participated in design and plan preparation of seven span twin structure.

Firm employed by	RA RAHMAN & ASSOCIATES, INC.			
Name	Darrell Richard		Years of relevant experience with this employer	25
Title	Senior Design Manager		Years of relevant experience with other employer(s)	30
Degree(s) / Years / Specialization			AAS / Engineering Technology	
Active registration number / state / expiration date			N/A	
Year registered	N/A	Discipline	N/A	
Contract role(s) / brief description of responsibilities.			Fixed Bridge Design/Ratings/Inspection	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Richard has nearly thirty (30) years of design and technical experience in cogo program, survey calculations, roadways and bridge designs following LADOTD requirements and procedures. He is experienced designer and is capable of using Eagle Point Software & Geocogo and Land Desktop 2004 to create contour, plan & profile sheets, general bridge plan designing & cross section data. He has been responsible for the design of turnouts, horizontal and vertical alignments, super elevation transition, geometric turnout and interchange ramp. He is experienced in detailing bridge spans, concrete column bents, curved steel girders, bearing details, post-tensioned caps, and footings. His has also been responsible for structural steel detailing. He has been involved in numerous bridge and drainage projects.
04/11 – Ongoing	**Wisner Blvd. Overpass I-610 & R.R. Crossing City of New Orleans, LA.** *Senior Design Manager.* Remove & replace existing roadway, install new driveways concrete curb & Gutter bottom, new sidewalk with ADA H/C Ramps @ intersections. Responsible for complete drafting and checking of quantities of the project. Const. Cost: $2,500,000.00.
02/06 – 07/08	**S.P. 713-36-0102, Bayou St. John, Harrison Ave., City of New Orleans, LA.** *Senior Design Manager.* Remove & replace existing roadway (4138 Lin. Ft.) with new drainage system, new water mains and sewer mains. Install new driveways concrete curb & Gutter bottom, new sidewalk with ADA H/C Ramps @ intersections. Improvements/enhancement to roadway sides between back of curb & sidewalk. Responsible for complete drafting and checking of quantities of the project. Construction cost $3,400,000.00
02/06 – 07/08	**S.P. No. 713-36-0102, Bayou St. John, Harrison Ave, Orleans Parish, LA.** *Assistant Project Manager.* Project cost was $2.5 Million. Participated in design and plan preparation of seven span twin structure.
04/11 – 10/12	**S.P. 713-36-0101, Bayou St. John, Park Island, Orleans Parish, LA**. *Assistant Project Manager.* Design of preliminary and final plans for the project. Const. Cost: $2,000,000.00.

Firm employed by	ARCADIS		Meet MPR No. 8
Name	Jose L. Rodriguez, PE	Years of relevant experience with this employer	1
Title	Senior Civil Engineer	Years of relevant experience with other employer(s)	24
Degree(s) / Years / Specialization		BS / 1992 / Civil Engineering, University of New Orleans	
Active registration number / state / expiration date		PE.0030492 / LA / Exp. 03/2023	
Year registered	2003	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Roadway Design	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Rodriguez has more than 25 years of experience with roles of progressive responsibility as a civil engineer performing roadway design, bridge design, project management, hydraulic analysis, utility coordination, construction supervision, estimating, and project implementation for various clients in the states of Louisiana, Texas, Georgia, and North Carolina. Worked in close relationship with the Louisiana Department of Transportation, City of New Orleans Department of Public Works, New Orleans Sewer and Water Board, Plaquemines Parish, Jefferson Parish, St. Bernard Parish, U.S. Army Corps of Engineers, New Orleans Regional Planning Commission, Marathon Petroleum Co., Yuhuang Chemicals, and others. Extensive experience in Inroads, Autodesk Civil 3d, Leap Bridge for Concrete Bridge Design, and Excel Spread Sheets. Served on the American Concrete Institute (ACI) Louisiana Board, becoming president of the Louisiana Chapter in 2010. Served as a judge in ACI's annual best concrete project competitions and remains active in this organization.
02/07 – 10/09	**John James Audubon Bridge Approach (Design-Build [DB]), LADOTD, New Roads, LA.** *Project Designer.* Responsible for the geometric horizontal and vertical alignment for five approach bridges to the John James Audubon Cable Stay Bridge. The longest cable-stayed bridge in the Western Hemisphere consisting of 1,583' main span. Jose was also in charge of the quality control for all bridge approaches and the design of all precast concrete girders for the project.
10/17 – 03/18	**Traffic Turn Lanes on Highway LA 3127, Yuhuang Chemical Inc., St. James, LA.** *Quality Control (QC).* Review for the design of two turn lanes into the Yuhuang Chemical Methanol plant in St. James Louisiana. During construction, Jose provided the owner, with construction design services for the duration of the construction phase.
1/06 – 09/09	**New Orleans Submerged Roadway Program Management, LADOTD / New Orleans Regional Planning Commission, New Orleans, LA.** *Project Designer and Quality Control Reviewer.* For this multi-million-dollar program management team for the DOTD and the Federal Highway Administration (FHWA). Jose helped develop design guidelines and processes for the standardization of engineering work for the repair of damaged roadways by Hurricane Katrina in the City of New Orleans and other Parishes. He was responsible for conducting quality control reviews on roadway plans prepared by other engineering firms for compliance with DOTD and FHWA design standards.
12/15 – 01/16	**Magnolia Ridge Levee Project, City of New Orleans, St. Charles Parish, LA.** *Quality Control (QC).* QC review and plan preparation for the Magnolia Ridge Levee project for St. Charles Parish.
02/10 – 06/11	**I-10 from Veterans to Clearview, LADOTD, Metairie, LA.** *Project Designer.* Responsible for roadway plan preparation for widening 1.2 miles of I-10 from three lanes to five lanes in each direction. The project also included bridge work to accommodate the new roadway widening. Jose was also responsible for the alignment and design of concrete sound walls along the corridor. He helped implement an innovative two-sided concrete stamp process for the noise wall precast concrete panels.

05/12 – 12/15	Earhart Boulevard Causeway Interchange, LADOTD, New Orleans, LA. *Project Designer.* Responsible for the geometric design and roadway plan preparation for the Earhart Boulevard Causeway Interchange. The Earhart Boulevard Causeway Interchange purpose was to assist in traffic congestion relief for the east-west flow in traffic for the New Orleans Metro Area. It consisted of the development roadway and bridge ramps for the creation of an elevated signal-controlled interchange. The estimated construction cost for this project was approximately fifty-nine million dollars. Responsible for the development of all horizontal and vertical alignments for this project as well as roadway plan preparation, developing all roadway cross sections, drainage design, utility conflict resolution and cost estimating for the project. Bentley InRoads was used for the development of the roadway plans for this project.
07/09 – 07/15	Peters Road Expansion, Phases I, II and III, LADOTD, Plaquemines, LA. *Project Designer.* Responsible for the geometric design, plan preparation and wetland delineation of Peters Road Phase I, II and III. The projects consisted of a new roadway, elevated crossing over the Intracoastal Waterway, approach roadways in Jefferson and Plaquemines parishes to tie Peters Road to Louisiana 23 near Barrier Road. The projects were prepared in coordination with Plaquemines, DOTD and USACE.
06/04 – 01/11	Causeway Boulevard Interchange Improvements Phase I and II, LADOTD, Metairie, LA. *Project Designer.* For the project, which consisted of widening Causeway Boulevard elevated structure at Veterans Boulevard and the construction of new at grade and elevated ramps to provide better accesses, improve safety and ease congestion at this heavily travel interchange. Responsible for evaluating existing girders, the design of new precast concrete girders and the roadway plan preparation for this project. Also, responsible for evaluating and design of new sewer and water lines for the project as well as coordinating the removal and replacement of all utilities affected by the new roadways or/and structure foundations.
01/08 – 05/08	I-12 to Bush Corridor Study Phase III (IES), LADOTD, St. Tammany Parish (STP), LA. *Project Designer.* Responsible for evaluating environmental issues and developing design alternatives in accordance with the National Environmental Policy Act (NEPA) for transportation improvements.
1/20 – 05/20	NC73 Highway Widening, North Carolina DOT, Mecklenburg County, North Carolina. *Project Engineer.* Responsible for the Temporary Traffic Control Plan preparation for the widening of NC 73. A principal arterial roadway, NC 73 Highway, was widened from a two-lane undivided roadway into a four-lane divided highway with a 30-foot wide median. The project presented many challenges for the Temporary Traffic Management Plan's preparation due to the high traffic volumes on NC 73, time restrictions for lane closures, and all NASCAR events at Charlotte Motor Speedway for the duration of the project. To mitigate traffic disruption and enhance roadway safety, assisted in preparing the Transportation Operation Plans and sequence of construction for the project. All design work was performed following NCDOT and the latest MUTCD standards.
3/2019 – 05/20	Eastern Federal Lands Highway Division (EFLHD), Puerto Rico. *Assessment Roadway Lead.* Responsible for the review, report preparation, and coordination for the repairs of over 70 roadway sites damaged by Hurricane Maria. Provided technical assistance to local engineering firms to ensure the project stayed within the client's guidance and strict schedules.
04/18 – 09/20	Texas High-Speed Rail, Texas Central Railway, Dallas to Houston, Texas. *Project Designer.* Assisted with establishing flood elevations for the alignment of over 240 miles of rail tracts. Also responsible for the realignment of at-grade roadways impacted by the High-Speed rail.

Firm employed by	ARCADIS		
Name	David Fulks, PE	Years of relevant experience with this employer	14
Title	Roadway Design Engineer	Years of relevant experience with other employer(s)	12
Degree(s) / Years / Specialization		MS / 2019 / Engineering Management, The George Washington University BS / 1997 / Civil Engineering, Portland State University	
Active registration number / state / expiration date		PE.030151 / LA / Exp. 09/2022	
Year registered	2002	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Roadway Design	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Fulks has more than 26 years of experience in the design of roadways, land developments, flood protection systems, and airports. His experience encompasses analysis and design of geometric and pavement design of highways, streets, sidewalks, restrictive intersections, roundabouts, and interchanges; site hydrology and hydraulics; and traffic impact analysis. His responsibilities have included preparing engineering designs, reports, plans, and specifications preparing and managing project schedules and cost estimates and providing construction administration.
04/13 – 07/14	**US 11 Railroad Bridge Replacement and Corridor Improvements EA, LADOTD, St. Tammany Parish, LA.** *Lead Engineer.* Geometry and roadway design, line and grade study development, and cost estimates for the replacement of an historic railroad overpass bridge and upgrading an existing two-lane rural highway to a four-lane divided highway with access control. Early coordination with Norfolk Southern Railroad.
07/15 – 06/17	**US 190B at Jefferson Ave Roundabout Design, LADOTD, St. Tammany Parish, LA**. *Roadway Engineer.* Geometric and roadway design, preliminary plans preparation, and cost estimate for replacing an existing four-way signalized intersection with a single-lane elliptical roundabout.
05/14 – 05/15	**Joe Sevario / Roddy Road Roundabouts Stage 0 Feasibility Study, LADOTD, Ascension Parish, LA.** *Task Manager and Lead Engineer*. Geometric and roadway design and cost estimates for the replacement of ten existing stop-controlled intersections with single-lane roundabouts.
01/14 – 03/17	**Pete's Highway EA, LADOTD, Livingston Parish, LA.** *Lead Roadway / Bridge Geometrics and Cost Engineer.* High-priority project completing an environmental assessment and traffic engineering services related to improving congestion and operations along Range Avenue in the vicinity of the I-12 interchange. Design alternatives included two split diamond interchange options with roundabout, partial clover leaves, and collector-distributor road components at both Range Avenue and the next existing, eastern overpass at Pete's Highway (LA 16) and a diverging diamond interchange alternative at Range Avenue.
11/14 – 10/15	**LA 44 and Loosemore Road Roundabout, LADOTD, Ascension Parish, LA.** *Deputy Project Manager and Lead Engineer.* Geometric and roadway design, preliminary subsurface utility investigation, and cost estimates for the replacement of an existing two-way stop-controlled intersection with either a single-lane roundabout or two single-lane roundabouts and right-in/right-out control at the existing intersection.
12/13 – 06/15	**Safety Studies Retainer - LA 3235 Stage 0 Safety Feasibility Study, LADOTD; Lafourche Parish, LA**. *Lead Roadway Geometrics and Cost Engineer*. Designed geometric layout of safety improvements including access management, restrictive intersections, and added turn lanes. Developed construction cost estimates for proposed improvements to assess feasibility of proposed alternatives.

09/09 – 03/12	I-20 – Garrett Road Connector Interchange Improvements, LADOTD, Ouachita Parish, LA. *Lead Engineer.* Geometry and roadway design of the new KCS Railroad overpass and connector between Kansas Lane and Garrett Road, including interstate interchange modifications to include two-lane roundabouts at ramp intersections, and three two-lane roundabouts along the corridor outside of the interchange. Improvements to the pedestrian and bicycle facilities were included in accordance with the LADOTD Complete Streets Policy. The compact project area required a detailed layout to confirm feasibility.
08/11 – 09/13	Chef Menteur Bridge and Approaches Replacement EA and Line and Grade Study, LADOTD, Orleans Parish, LA. *Lead Roadway/Bridge Geometrics and Cost Engineer.* Responsible for preparing the proposed geometric configurations of a bridge replacement at Chef Menteur Pass. Investigated four alignments as well as both low-level moveable and high-level fixed span bridge configurations. Performed detailed geometric layout of both the mainline highway, bridge, and adjacent collector roadways to mitigate impacts to environmentally sensitive resources and local residential, commercial, and historical interests.
09/12 – 09/13	US 165 Connector and Ouachita River Bridge EIS, LADOTD, Ouachita Parish, LA. *Roadway Design Engineer.* Responsible for preparing roadway and bridge general plan designs, line and grade report development, and cost estimates for a new five-mile elevated highway through Chauvin Swamp north of Monroe, LA. An in-town corridor was also developed which entailed upgrading Louisville Avenue and Hudson Lane in Monroe, the Lea Joyner Bridge over the Ouachita River, and Stella Street in West Monroe to function as a one-way couplet. Early coordination with Delta Southern Railroad was included.
06/00 – 12/00	Hesper and Helios Avenue Street Rehabilitation, Jefferson Parish Engineering Department, Harvey, LA. *Roadway Engineer.* Completed inspections and rehabilitation recommendations for eight blocks of local streets. Rehabilitation required demolition and replacement of concrete road panels, milling and overlay of asphalt surfaces, and installation of drainage inlets and subsurface drainage, as well as replacement of damaged and under-performing subsurface drainage. Performed inspections, collaborated with Parish representatives and utility companies, identified appropriate rehabilitation measures, and produced plans illustrating the rehabilitation recommendations.
02/09 – 04/10	US 90 – WBV 73 Western Tie-In Crossing Lake Cataouatche Area, United States Army Corps of Engineers (USACE) – New Orleans District, Jefferson Parish & St. Charles Parish, LA. *Deputy Project Manager and Lead Roadway / Drainage Engineer. Development* of preliminary and final design P&S for a 2,540-foot PPC girder / column bent bridge, highway approaches, and frontage roadways.
02/01 – 08/01	US 190 (Gause Boulevard) from LA 433 to US 11, LADOTD, Slidell, LA. *Roadway / Drainage Designer.* Alignment modification and capacity increase for a 3.5-mile stretch of this state highway. The reach included two bridges, a transition from a rural minor arterial to an urban principal arterial, dozens of minor intersections with side streets, a railway crossing, and numerous drainage culverts. The roadway geometric and drainage designs were completed, and design plans were produced. This project required applying many geometric elements, such as super-elevation and multiple closely spaced horizontal curves that required a delicate balance of occasional conflicting requirements.

Firm employed by	ARCADIS		
Name	Garret Keller, PE	Years of relevant experience with this employer	11
Title	Roadway Design Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		MS / 2003 / Transportation Engineering, Louisiana State University BS / 2011 / Civil Engineering, Louisiana State University	
Active registration number / state / expiration date		PE.040977 / LA / Exp. 03/2023	
Year registered	2012	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Roadway Design	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Keller began working with Arcadis as a Technical Intern in the company's Metairie and Baton Rouge offices, gaining experience in civil and structural detailing and design. Immediately after graduating, he began working as a designer with several LADOTD projects. His responsibilities have included structural detailing, structural design, civil design, geometrics, and cost estimating. He also oversees implementation of CAD systems and standards for Louisiana including MicroStation, InRoads, and CAD conform for LADOTD work.
07/15 – 06/17	**US 190B at Jefferson Avenue Roundabout Design, LADOTD, St. Tammany Parish, LA**. *Roadway Engineer*. Responsible for geometric and roadway design for replacing an existing four-lane signalized intersection with a single-lane roundabout. The project also included a Context Sensitive Solutions study to optimize benefit to the adjacent real estate and community needs.
09/12 – 04/14	**US 165 Connector and Ouachita River Bridge EIS, LADOTD, Ouachita Parish LA.** *Roadway Designer.* Responsible for roadway design support on a project that provides needed transportation system linkage in the north Monroe region.
11/12 – 04/13	**LA 594 (Millhaven Rd.) Alternatives, I-20 Economic Development Corporation, Ouachita Parish, LA.** *Primary Designer.* Roadway intersection and roundabout improvement alternatives for a LADOTD Stage 0 study. Two roundabouts were evaluated in compliance with LADOTD EDSM V.1.1.5 (Analysis) and EDSM V.1.1.6 (Design).
08/11 – 09/13	**Chef Menteur Bridge and Approaches EA, LADOTD, Orleans Parish, LA.** *Roadway Designer.* Responsible for geometry and roadway design for a high-priority bridge replacement. Key issues included minimizing impacts to Bayou Sauvage National Wildlife Refuge, Fort McComb, the existing bridge that is eligible for the NRHP, and compliance with Complete Streets Policy.
02/09 – 02/13	**US 90 WBV 73- Western Tie-In Crossing Lake Cataouatche Area (Bridge/Roadway Approach/T-walls), USACE - New Orleans District, Jefferson & St. Charles Parishes, LA.** *Project Designer.* Preparation of Plans and Specifications for new floodwall and highway bridge in St. Charles Parish. Design of floodwalls, four-lane highway bridge, and detour roads to maintain traffic traveling on US Highway 90. The project involved improvement layout and quantity calculations in support of cost estimates.
2009 – 2012	**Seabrook Sector Gate Complex, United States Army Corps of Engineers (USACE) - New Orleans District; LA.** *Project Designer.* Project responsibilities included detailed engineering and design; preparing a Design Documentation Report (DDR), plans and specifications; and support during construction. The construction cost of the project is estimated around $170 million.
02/19 – Ongoing	**NDRC Ohio Creek Watershed Project, City of Norfolk, VA.** *Lead Civil Engineer.* Project consists of earthen berms, reinforced concrete floodwalls, and internal stormwater pump stations, as well as, upgraded existing transportation infrastructure to provide better mobility and safety for pedestrians and bicyclists. These features include elevated roadways, new shared use paths, upgraded culverts with stormwater closure structures, and various green infrastructure treatments.

Firm employed by	ARCADIS		
Name	Craig Raymond, PE	Years of relevant experience with this employer	8
Title	Roadway Design Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		BS / 2013 / Civil Engineering, Louisiana State University	
Active registration number / state / expiration date		PE.0042715 / LA / Exp. 03/2023	
Year registered	2018	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Roadway Design	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Raymond's experience encompasses permitting application including sketches/drawings, geometric design of levees, highways, streets, roundabouts, and aprons. Responsibilities have included preparing engineering designs, plans, and specifications. preparing cost estimates. coordinating with permitting agencies. and project oversight.
04/13 – 07/14	**U.S. 11 Railroad Bridge Replacement and Corridor Improvements EA, LADOTD, St. Tammary Parish, LA.** *Roadway/Bridge Design*. Environmental Assessment for replacement of the US-11 Bridge, which includes widening of US-11 from two lanes to four lanes from US-190 north to 1-12. Responsibilities include providing alternative development and plan preparation for two alternatives.
01/14 – 12/14	**Kansas Lane – Garrett Road Connector and 1-20 Improvements, LADOTD, Ouachita Parish, LA.** *Roadway Engineer*. Responsible for roadway design for an Environmental Assessment for the improvement of 5 different interchanges along Garrett Rd. The project includes design for incorporating modern roundabouts to the 5 interchanges.
01/14 – 12/14	**LA 16 (Pete's Highway) I-12 Interchange, LADOTD, Livingston Parish, LA.** *Roadway Engineer*. Environmental Assessment for the improvement of I-12/South Range Avenue diamond interchange, as well as north and south of I-12 along South Range Avenue. Responsibilities include providing alternative development, typical sections, and plan preparation consisting of existing/required right of way and existing utilities.
11/16 – 08/19	**LA 88 Roundabouts Prelim Plans, LADOTD, Iberia Parish, LA.** *Roadway Engineer*. Responsible developing construction plans to install two single-lane roundabouts at the US 90 ramp terminals where it intersects LA 88. Plans include modifying service road intersections to J-Turn intersections and installing additional U-Turn locations to accommodate U-Turn movements.
07/15 – 06/17	**US 190B at Jefferson Avenue Roundabout Design, LADOTD, St. Tammany Parish, LA.** *Roadway Engineer.* Responsible for completing Preliminary Plans based on comments from the client. This involved the development of MicroStation files such typical pavement section and details, plan and profile sheets, and construction sequencing sheets.
11/14 – 11/15	**LA-44 and Loosemore Road Roundabout Feasibility Study, LADOTD, Ascension Parish, LA.** *Roadway Engineer*. Responsible for roadway design for the improvement of existing roadway infrastructure at the intersection of LA-44 and Loosemoore Road. The project includes design for incorporating modern roundabouts to the interchanges to enhance mobility and safety, collection of data from all existing utilities and cost estimate.
12/13 – 06/15	**LA 3235 Stage 0 Feasibility Study, LADOTD, Lafourche Parish, LA.** *Roadway Engineer*. Responsible for collection of roadway information and road design to preserve and enhance safety/mobility of the corridor. The project includes improvement considerations such as median opening channelization, turn lane storage, median closure, among others.

Firm employed by	ARCADIS		
Name	Akhil Chauhan, PE, PTOE, PTP, PMP	Years of relevant experience with this employer	14
Title	Principal Engineer	Years of relevant experience with other employer(s)	6
Degree(s) / Years / Specialization		MS / 2003 / Transportation Engineering, Massachusetts Institute of Technology BS / 2001 / Civil Engineering, Indian Institute of Technology	
Active registration number / state / expiration date		PE.033703 / LA / Exp. 09/2022; PTOE #2544 / USA / Exp. 11/2023 PTP #246 / USA / Exp. 12/2024; PMP #1444676 / PA / Exp. 08/2023	
Year registered	2008	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Technical Advisor & QA/QC (Traffic Engineering)	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Chauhan is a Principal Traffic Engineer with 20 years of applied research and industry experience in the fields of traffic engineering, traffic modeling and simulation, transportation planning, demand modeling/forecasting, intersection/corridor analysis, safety studies, and access management. Akhil has successfully led, managed, and mentored numerous projects related to transportation modeling, simulation, and planning for public agency clients located across the nation including several state Departments of Transportation. He is proficient in the use of many macro-, meso-, and microscopic traffic simulation software programs such as HCS, Vistro, Synchro, SIDRA, Vissim, MITSIM, Dynameq, DynaMIT, TransCAD, Visum, and OREMS.
04/13 – 10/20	**US 11 Railroad Bridge Replacement and Corridor Improvements EA, LADOTD, St. Tammany Parish, LA / H.000688.2.** *Principal Engineer*. Responsible for crash analysis, operating speed tabulations, intersection and corridor analysis, line and grade, and public outreach for the proposed widening of US 11 between US 190 (Gause Boulevard) and I-12 in Slidell. Proposed improvements include the replacement of a bridge crossing the Norfolk Southern Railroad. Critically, this project includes analysis of several innovative alternatives for the proposed corridor, including "superstreets" and J-turn concepts.
07/12 – 11/14	**Chef Menteur Bridge and Approaches EA, Orleans Parish, LA / H.000263.2.** *Principal Traffic Engineer:* Responsible for the High-priority bridge replacement EA and Line and Grade Study, responsible for coordinating traffic impact study. Traffic impact study coordination include reviewing available data with DOTD traffic engineer to identify gaps and propose additional data needs, investigating planned transportation improvement projects and traffic generators with DOTD and New Orleans RPC, reviewing design hour volumes (DHVs), average daily traffic (ADTs), and peak hour and24-hour truck percentages, and reviewing intersection and road segment capacity analyses.
11/20 – Ongoing	**I-10 CMAR, LADOTD, East Baton Rouge Parish, LA / H.001400.** *Principal Engineer:* Responsible for technical advisory and QAQC of all traffic engineering tasks including development of permanent signing plans, Interchange Modification Reports, and Transportation Management Plans for the widening of Interstate-10 from LA 415 to Essen Lane and improvements to interchanges along this segment. One critical component of the project is maintaining traffic during the construction of new bridge structures. Multiple scenarios are being evaluated using a calibrated mesoscopic model to determine the impacts during construction and mitigations that will be necessary to minimize delay.
08/18 – 12/19	**I-10 Widening Mesoscopic Model and TMP, LADOTD, East Baton Rouge Parish, LA / H004100.** *Principal Engineer:* Responsible for supervising development of mesoscopic traffic model used for this project. The object of the study was to develop an existing conditions model. Responsibilities included defining study area, assessing data needs, developing data collection plan, preparing calibration documentation, and preparing model documentation.

01/18 – Ongoing	I-20 Mesoscopic Model and TMP Using Dynameq, LADOTD, Bossier Parish, LA / H012889. *Principal Engineer:* Responsible for supervising development of mesoscopic traffic model to predict queueing, delay and alternate travel patterns due to planned construction on I-20 to replace pavement. The project is anticipated to disrupt traffic in this critical portion of I-20. The project scope includes development and calibration of mesoscopic model, analysis of alternative routes, safety analysis, operational analysis, assistance with public outreach, development of a Level 4 TMP, and development of work zone mitigation strategies.
12/13 – 06/15	LA 3235 Stage 0 Feasibility Study, LADOTD, Lafourche Parish, LA / H.010688.1. *Project Manager:* Responsible in the preparation of a formal traffic and access management Stage 0 study, in accordance with DOTD Stage 0 Manual of Standard Practice, that analyzed alternatives and enhanced mobility and safety on LA 3235. Main tasks included traffic data collection, warrant studies, traffic analysis, safety analysis, development of conceptual layouts, and public outreach. Intersections found to warrant signalization were also modeled in unconventional designs including U-turns, J-turns, and RCUTs. A preliminary cost estimate and conceptual layout drawings were also produced. During the study, it was found that crash modification factors (CMFs) for many access management principles are not found in the HSM's Part C predictive methods. Therefore, proposed a corridor-based approach in which Part D CMFs were applied at the corridor level after using Part C to predict future no-build crashes. This approach predicted changes to crash frequency, crash type, and severity type for the two build alternatives. The predicted crashes provided the opportunity to perform a cost/benefit analysis based on safety.
05/19 - Ongoing	I-20 / I-220 Interchange Improvements and BAFB Access Design-Build, LADOTD, Bossier Parish, LA / H.003370. *Principal Engineer:* Responsible for overseeing the development of addendum to Interchange Modification Report, Transportation Management Plan, Temporary Traffic Control Plans, and Permanent Signing Plans to accommodate the design and construction of the project. The design build project includes the modification of the existing interchange at I-20 / I-220 with additional ramps and extension of I-220 to provide access to Barksdale Air Force Base.
01/14 – 02/17	Traffic Engineering Retainer - US 71 Corridor Traffic and Safety Study – Phase 1, LADOTD, Rapides Parish, LA. / H.010824. *Project Manager:* Responsible in the preparation of a corridor study for the purpose of enhancing mobility and safety on US 71 in Alexandria, LA. Main tasks included traffic data collection, warrant studies, traffic analysis, safety data analysis, and development of conceptual layouts. Data collection effort included automated one-week counts, manual turning movement counts and spot speed studies. A preliminary cost estimate and conceptual layout drawings were also produced during the study.
04/16 – Ongoing	Florida Avenue EA, LADOTD, Orleans Parish, LA / H.005720.2. *Principal Traffic Engineer:* Responsible for QA/QC and documentation for the project that includes traffic, environmental, line and grade, and public outreach and involvement services for one of the last projects funded by Louisiana's TIMED program. The project traverses post-Katrina re-development areas in both Orleans and St. Bernard Parishes. Key considerations include the type and height of the bridge and controlling truck traffic diversion through neighborhoods. Using the New Orleans Regional Planning Commission's SELATRAM travel demand model (TDM), Arcadis coded alternatives for a comparative analysis of partial and full build scenarios.

Firm employed by	ARCADIS		
Name	Kester Hollier, PE, PTOE	Years of relevant experience with this employer	1
Title	Senior Traffic Engineer	Years of relevant experience with other employer(s)	16
Degree(s) / Years / Specialization		BS / 2004 / Civil Engineering, Louisiana Tech University	
Active registration number / state / expiration date		PE.034304 / LA / Exp. 03/2023; PTOE #3928 / USA / Exp. 11/2024	
Year registered	2009	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Traffic/Safety	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Hollier possesses a wide breadth of experience in the field of transportation engineering including traffic engineering, roadway design, complete street improvement projects, roadway safety analysis and design, and construction management and inspection. Working on a wide variety of projects from the planning and conceptual phases to the design and construction phases, has given him the experience to help identify the needs and requirements for projects. This experience allows him to understand stakeholders ranging from local public agencies to state DOTs and help provide expertise in achieving successful solutions for a variety of projects.
11/20 – Ongoing	**I-10 CMAR, LADOTD, East Baton Rouge Parish, LA / H.001400.** *Project Manager.* Responsible for traffic engineering tasks including development of permanent signing plans and Interchange Modification Reports for the widening of Interstate-10 from LA 415 to Essen Lane and improvements to interchanges along this segment. One critical component of the project is maintaining traffic during the construction of new bridge structures. Multiple scenarios are being evaluated using a calibrated mesoscopic model to determine the impacts during construction and mitigations that will be necessary to minimize delay.
09/12 – 02/16	**Replace Belle Chasse Tunnel and Bridge Stage 0 Feasibility Study and Stage 1 EA, LADOTD, Plaquemines Parish, LA / H.004791.** *Traffic Engineer*. Responsible for the traffic analysis along LA 23 (Belle Chasse Highway) between LA 428 (Behrman Highway) and LA 406 (Woodland Highway) for multiple 6-lane bridge alternatives that would be proposed to replace the existing Belle Chasse Tunnel and lift bridge over the Intercoastal Waterway. These alternatives included 3%, 4%, and 5% bridge grades that modified roadway geometry and intersection location. Responsible for the review of the roadway portion and costs for the Line and Grade Study along with the review of the construction sequencing and traffic maintenance of the constructability review.
05/14 – 08/20	**Causeway Blvd. at Earhart Expwy. Interchange, LADOTD, Jefferson Parish, LA / H.002861.** *Traffic/Civil Engineer*. Responsible for the design of traffic control and construction sequencing, pavement marking layout, quantity analysis, and quality control for a new interchange at LA 3139 (Earhart Expwy.) and LA 3046 (Causeway Blvd.) in Jefferson Parish, LA. Provided review for the interchange traffic sign and traffic signal layouts. Identified all necessary design waivers and design exceptions required for LADOTD approval. Provided geometric layout design, typical section design and review, and joint layout design for several interchange ramps and underpasses.
06/11 – 02/13	**LA 1 Toll Facilities, LADOTD, Vernon Parish, LA. / H.011207.** *Traffic Engineer*. Responsible for the new toll signage, pavement marking layout and queue analyses for the LA 1 Toll facility modifications at the new bridge in Leeville, LA.

11/17 – 07/20	LA 466 (5th Street) Improvements Traffic Study, City of Gretna, Je, LA / H.012885. *Project Manager / Traffic Engineer*. Responsible for the traffic study and impacts for the proposed complete streets improvements along the LA 466 corridor between LA 23 and Richard St. in Gretna, Louisiana. Tasks included data collection along the corridor and at designated intersections, safety and crash analysis along the corridor, trip generation/land use and performing existing traffic analysis and future traffic analysis for proposed final alternative. The traffic study was prepared to follow the Louisiana Department of Transportation and Development's Traffic Engineering Process and Report Guidelines. The project also included a stand along pedestrian study along the corridor at designated intersection and the design of accessible pedestrian signals at signalized intersections.
12/17 – 11/19	Causeway Boulevard Widening Traffic Study, Jefferson Parish, LA / 2017-010-RBP. *Project Manager / Traffic Engineer*. Responsible for the traffic study for the proposed widening of Causeway Boulevard between Metairie Rds. and West Esplanade Blvd. in Jefferson Parish, LA. Tasks included data collection, traffic volume redistribution, left-turn placement and turn bay storage length, and existing traffic analysis and future traffic analysis of a preferred alternative.
10/18 – 01/19	LA 22 Traffic Circulation and Corridor Analysis, NORPC, St. Tammany Parish, LA / H.972314.1. *Traffic Engineer*. Responsible for the development of three future alternatives along Northshore Boulevard between I-12 and US-190 in Slidell, LA. Managed the data collection process and peak period observations to determine existing traffic patterns as well as the safety analysis along the corridor. Developed three alternatives that used a combination of traffic signal retiming, J-turns, and roundabouts to provide better access management along Northshore Boulevard as well as improve traffic flow in the corridor for current and proposed future conditions with consideration given to proposed future developments using trip generation and land use analysis.
01/10 – 04/11, 07/13 – 01/14	Stumberg Lane Extension, City of Baton Rouge Green Light Plan, East Baton Rouge Parish, LA / 03-CS-CI-0021. *Traffic Engineer*. Responsible for the design of new traffic signals at US 61 (Airline Highway) and LA 73 (Jefferson Highway) for the extension of Stumberg Lane in Baton Rouge, LA. Also, responsible for the design and layout of the fiber optic interconnect along the proposed extension.
05/09 – 07/13	LA 23 Widening (Lapalco Blvd. – Engineers Rd.), LADOTD, Jefferson and Plaquemines Parishes, LA / H.001375. *Traffic/Civil Engineer*. Responsible for the road design and geometrics for the widening of LA 23 in Jefferson and Plaquemines Parish between Lapalco Blvd. (La 428) and Engineers Rd. (La 3017). Developed traffic analysis for the traffic signal timing and required turn bay lengths at intersections. Developed traffic signing plans, pavement marking layouts and temporary traffic control plans.
11/07 – 12/08	Marathon Petroleum US-61 Access Improvements, LADOTD/Marathon Petroleum Company, John the Baptist Parish, LA / SP. No. 007-04-0050. *Traffic Engineer*. Responsible for the traffic forecasting and analysis for the Traffic Impact Study for the expansion plans for the Marathon Oil Refinery in Garyville, LA. Performed traffic analysis and signal design for the new main entrance to the refinery as well as the required turn lanes from US-61 to different points of entry to the refinery site.

Firm employed by	ARCADIS		
Name	Thomas Montz, PE, PTOE, PTP	Years of relevant experience with this employer	9
Title	Traffic Engineer	Years of relevant experience with other employer(s)	3
Degree(s) / Years / Specialization		MS / 2011 / Civil Engineering, Louisiana State University BS / 2009 / Civil Engineering, Louisiana State University	
Active registration number / state / expiration date		PE.0039128 / LA / Exp. 09/2022; PTOE 4093 / USA / 07/2022; PTP 599 / USA / 03/2023; ATSSA TCT and TCS	
Year registered	2014	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.			Traffic/Safety

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Montz is a Project Manager and Transportation Engineer specializing in transportation planning, modeling, and design. He has 12 years of experience leading a multitude of planning and engineering projects including stage 0 feasibility studies, environmental assessments, safety studies involving pedestrian and bicycle issues, design projects, and transportation management during construction. He specializes in traffic analysis and operations including signal timing, signal design, ITS design, HCM analysis, and microsimulation analysis. His role on this IDIQ is to provide traffic engineering design and analysis and temporary traffic control.
11/20 – Ongoing	I-10 CMAR, LADOTD, East Baton Rouge Parish, LA / H.001400. *Traffic Engineer.* Responsible for construction phasing modeling and evaluation to determine the impacts of various construction phasing scenarios and mitigation that will be required to minimize travel delays during construction. Construction phasing scenarios are being modeled using a calibrated mesoscopic model developed by Arcadis, which can estimate the effects of construction activities on the broader roadway network. Model results are being used to inform the Transportation Management Plan for the project.
08/18 – 12/19	I-10 Widening Mesoscopic Model and TMP, LADOTD, East Baton Rouge Parish, LA / H004100. *Traffic Engineer.* Responsible for developing a mesoscopic / DTA model used for this project. The object of the study was to develop an DTA model for a large subarea of the regional MPO's travel demand model that is calibrated to the existing conditions. Responsibilities included defining study area, assessing data needs, developing data collection plan, preparing calibration documentation, and preparing model documentation.
04/13 – 04/18	US 11 Railroad Bridge Replacement and Corridor Improvements EA, LADOTD, St. Tammany Parish, LA / H.000688.2. *Traffic Analyst.* Responsible for crash analysis, operating speed tabulations, intersection and corridor analysis, and noise modeling for the proposed widening of US 11 between US 190 (Gause Blvd) and I-12 in Slidell, LA. The proposed improvements include replacing a bridge crossing the Norfolk Southern Railroad. This project includes analyzing several innovative alternatives for the proposed corridor, including "superstreets" and J-turn concepts.
10/19 – Ongoing	I-10 New Orleans to Slidell Hard Shoulder Running, LADOTD, Orleans Parish, LA / H.013960.1 *Traffic Engineer*. Responsible for the development of a FREEVAL model to evaluate the operational performance of proposed Hard Shoulder Running (HSR) alternatives on I-10 between New Orleans and Slidell. Purpose of the project is to evaluate the feasibility of implementing HSR lanes along I-10 to alleviate existing bottlenecks and congestion along critical segments of the corridor.

01/18 – Ongoing	I-20 TMP and Mesoscopic Model Development, LADOTD, Bossier Parish, LA / H012889. *Project Manager.* Responsible for development of mesoscopic traffic model to predict queueing, delay, and alternate travel patterns due to planned construction on I-20 to replace pavement. The project is anticipated to disrupt traffic in this critical portion of I-20. The project scope includes development and calibration of mesoscopic model, analysis of alternative routes, safety analysis, operational analysis, assistance with public outreach, development of a Level 4 TMP, and development of work zone mitigation strategies.
09/15 – 01/18	US 165 (from US 165 Business to LA 2) Traffic Analysis / Corridor Study, LADOTD, Ouachita Parish, LA / 4400004807 / H.004782. *Project Engineer.* Responsible for general oversight and technical analysis for this corridor analysis and operational improvement study. Performed select-link and TAZ analysis using TransCAD model to determine distribution of future trips in developing area along US 165 corridor in Monroe, LA. Coding and analysis using micro-simulation software (VISSIM) for existing and future conditions.
04/19 – 12/19	East Baton Rouge Parish Signal Detection Upgrades, LADOTD, East Baton Rouge Parish, LA / H.013830. *Project Engineer.* Responsible for supervisory tasks and oversight of this project involving field signal inventory and the creation of updated signal plans and quantities. 39 locations identified in East Baton Rouge Parish to be upgraded from video detection to magnetometer detection. All signalized intersection on Florida Boulevard from I-110 to Airline Highway were included for signal detection upgrades under this project.
04/19 – 12/19	US 90 Traffic Signal Timing Upgrades, LADOTD, Lafayette Parish, LA / H.012665. *Project Engineer.* Technical lead of project tasks involving traffic data collection and analysis, signal inventory, peak period determination and observations, warrant analysis, travel time runs, traffic signal analysis using Synchro 10 software, and development of updated TSI forms following latest LADOTD standards.
12/13 – 06/15	LA 3235 Stage 0 Feasibility Study, LADOTD, Lafourche Parish, LA / H.010688.1. *Traffic Analyst.* Responsible for the preparation of a formal traffic and access management Stage 0 study, in accordance with DOTD Stage 0 Manual of Standard Practice, that analyzed alternatives and enhanced mobility and safety on LA 3235. Main tasks included traffic data collection, warrant studies, traffic analysis, safety analysis, development of conceptual layouts, and public outreach. Intersections found to warrant signalization were also modeled in unconventional designs including U-turns, J-turns, and RCUTs. Purpose of the project was to address historical safety issues along the corridor resulting from high speeds and conflict points. Proposed alternatives utilized non-conventional intersection configurations to reduce conflict points and the potential for crashes to occur.
01/14 – 02/17	Traffic Engineering Retainer - US 71 Corridor Traffic and Safety Study – Phase 2, LADOTD, Rapides Parish, LA. / H.010824. *Project Engineer.* Responsible in the preparation of a corridor study for the purpose of enhancing mobility and safety on US 71 in Alexandria, LA. Main tasks included traffic data collection, warrant studies, traffic analysis, safety data analysis, and development of conceptual layouts. Data collection effort included automated one-week counts, manual turning movement counts and spot speed studies. A preliminary cost estimate and conceptual layout drawings were also produced during the study. Collected crash data for the most recent three years from Louisiana Department of Transportation and Development, LADOTD crash database, analyzed crash summaries and identify historical high-crash locations and over-representative crashes, determined crash types, frequencies and crash rates, reviewed individual crash reports to determine type and location of each crash, identified crash "hot-spot" locations, contributing factors for high-crash rates, and determined potential improvements at these locations

Firm employed by	ARCADIS		
Name	Ari Deitch, PE, PTOE, PTP, RSP	Years of relevant experience with this employer	7
Title	Traffic Engineer	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization		BS / 2012 / Biological Engineering, Louisiana State University	
Active registration number / state / expiration date		PE.0041842 / LA / Exp. 03/2024; PTOE #4346 / USA / Exp. 11/2023 PTP #690 / USA / Exp. 07/2022; RSP #37 / USA / Exp. 12/2024; ATSSA TCT / TCS	
Year registered	2018	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Traffic/Safety	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Deitch is a Transportation Engineer specializing in traffic engineering and design, safety, transportation management, and conceptual roadway design. Mr. Deitch has had experience managing and working on projects for LADOTD and the City of Baton Rouge, as well as other DOTs across the country, pertaining to Stage 0 feasibility studies, transportation management plans, traffic, and safety studies, NEPA studies, pedestrian and bicycle improvements, access management, signal design, and signing and marking design. He has experience and proficiency in IHSDM, SYNCHRO, VISTRO, VISSIM, SIDRA, GuidSIGN, HCS and MicroStation software. Ari is ATSSA TCT and TCS certified.
05/19 – Ongoing	**I-20 / I-220 Interchange Imp. and BAFB Access TMP and IMR, LADOTD, LA / H.003370.** *Traffic Engineer:* Responsible for development of addendum to Interchange Modification Report, Transportation Management Plan, Temporary Traffic Control Plans, and Permanent Signing Plans to accommodate the design and construction of the project. The design build project includes the modification of the existing interchange at I-20 / I-220 with additional ramps and extension of I-220 to provide access to Barksdale Air Force Base.
08/14 – 10/18	**US 71 Corridor Traffic and Safety Study – Phase 1-3, LADOTD, Rapides Parish, LA / H.010824.** *Traffic Engineer:* Responsible for providing traffic data collection, warrant studies, traffic analysis, safety data analysis, and development of conceptual layouts. Data collection effort included automated one-week counts, manual turning movement counts and spot speed studies. Collected crash data for the most recent three years from LADOTD crash database, analysed crash summaries and identify historical high-crash locations and over-representative crashes, determined crash types, frequencies and crash rates, reviewed individual crash reports to determine type and location of each crash, identified crash "hot-spot" locations, contributing factors for high-crash rates, and determined potential improvements.
11/20 – Ongoing	**I-10 CMAR, LADOTD, East Baton Rouge Parish, LA / H.001400.** *Traffic Engineer:* Responsible for wide range of traffic engineering tasks including development of permanent signing plans, Interchange Modification Reports, and Transportation Management Plans for the widening of Interstate-10 from LA 415 to Essen Lane and improvements to interchanges along this segment.
10/19 – Ongoing	**I-10 New Orleans to Slidell Hard Shoulder Running, LADOTD, Orleans Parish, LA / H.013960.1.** Traffic *Engineer*: Responsible for the development of conceptual drawings and typical sections for proposed Hard Shoulder Running (HSR) alternatives on I-10 between New Orleans and Slidell. Purpose of the project is to evaluate the feasibility of implementing HSR lanes along I-10 to alleviate existing bottlenecks and congestion along critical segments of the corridor.
10/15 – Ongoing	**US-90 Business Signing Upgrades and TMP, LADOTD, Orleans and Jefferson Parishes, LA / H.010634.5.** *Assistant Project Manager:* Responsibilities include taking inventory of existing signs and structures, developing a signing layout plan for the project area in accordance with the latest state and federal policy guidance, developing signing plans through 100% final design

	stage, developing a Transportation Management Plan to be used during construction of the project, and coordinating reviews and submittals with LADOTD Traffic Engineering Design Section. The purpose of the project is to replace all existing signs within the project area, which includes sections of Interstate-10 and US-90 Business in and around New Orleans' Central Business District. This requires careful planning in the placement of signs and structures to accommodate the complex roadway network in this area. Arcadis completed the design plans and TMP in 2019, and is currently providing engineering support during construction of the project.
04/19 – 12/19	East Baton Rouge Parish Signal Detection Upgrades, LADOTD, East Baton Rouge Parish, LA / H.013830. *Traffic Engineer:* Technical lead of project tasks involving field signal inventory and the creation of updated signal plans and quantities. The project includes 39 intersections identified in East Baton Rouge Parish to be upgraded from video detection to magnetometer detection.
04/19 – 12/19	US 90 Traffic Signal Timing Upgrades, LADOTD, Lafayette Parish, LA / H.012665. *Traffic Engineer:* Technical lead of project tasks involving traffic data collection and analysis, signal inventory, peak period determination and observations, warrant analysis, travel time runs, traffic signal analysis using Synchro 10 software, and development of updated TSI forms following latest LADOTD standards.
08/14 – 06/15	LA 3235 Stage 0 Feasibility Study, LADOTD, Lafourche Parish, LA / H.010688.1. *Traffic Safety Analyst:* Responsible for review of existing crash data and traffic operations analysis, development of safety countermeasures, conceptual drawings, and Stage 0 documentation. LADOTD Stage 0 Safety Study to develop access management strategies and roadway improvements that will maintain and improve mobility, improve safety, support existing and future development along the LA 3235 corridor. The LA 3235 corridor was initially constructed as a high-speed roadway to facilitate truck traffic to and from Port Fourchon. Since its construction, numerous commercial and residential developments have created unsafe conditions along the corridor.
02/15 – 11/17	Intersection Feasibility Study: Evangeline Thwy, Johnston St, & Louisiana Ave, LADOTD, Lafayette Parish, LA / H.011408. *Traffic and Safety Analyst:* Responsible for review of existing crash data, traffic operations analysis, and development of design alternatives. Objective is to develop alternatives for the intersection of Evangeline Thruway (US167/90) and Johnston Street (US167) / Louisiana Avenue (LA 94) that will improve safety and mobility. Evangeline Thruway consists of two one-way roadways with three lanes in each direction. Three alternatives for each intersection at Johnston Street / Louisiana Avenue were developed based on the results traffic and safety analysis.
01/17 – Ongoing	Tunnel Flood Barrier Systems Design-Build Project, MTA-TBTA, NY *Traffic Engineer*: Responsible for the development of a comprehensive Transportation Management Plan (TMP) and Maintenance and Protection of Traffic (MPT) Plans for the design and construction of permanent and deployable flood protection systems at the Hugh L. Carey Tunnel and the Queens Mid-Town Tunnel in New York City, New York. Specific tasks include selection and application of state and federal policy guidance to develop temporary traffic control plans and sequencing for various construction phases of the project, coordinating with state and local agencies to satisfy MPT notification requirements, and developing procedures for the implementation and removal of temporary traffic control devices and equipment.

Firm employed by	ARCADIS		
Name	Jose M. Rodriguez, RSP	Years of relevant experience with this employer	4
Title	Safety Analyst	Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization		MS / 2014 / Civil Engineering, LSU BS / 2006 / Civil Engineering, Julio Garavito Colombian Engineering School	
Active registration number / state / expiration date		RSP # 12 / USA / Exp. 12/2022	
Year registered	2019	Discipline	Road Safety Professional
Contract role(s) / brief description of responsibilities.		Traffic/Safety	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Rodriguez's experience includes safety & traffic analysis for corridor feasibility studies on major highways and interstates, as well as intersection feasibility studies including pedestrian and bicycle considerations. Mr. Rodriguez has extensive experience in crash analysis, highway safety analysis using the Highway Safety Manual, Crash Modification Factors, and Safety Performance Functions for local and nonlocal conditions to then summarize them into dynamic web dashboards using the latest technologies of visualization of data and results including Power BI.
02/17 – 08/17	**LA 157 from US 80 to South of LA 614 Study, LADOTD, Bossier City, LA.** *Traffic and Safety Analyst.* Performed benefit-cost analysis including both, operations, and safety. A traffic study to evaluate existing, no-build and proposed build alternatives for LA 157 (Booker Rd. to south of LA 614) for intermittent (five year) and 20-year plan using VISSIM and Synchro.
08/14 – 02/17	**Traffic Engineering Retainer - US 71 Corridor Traffic & Safety Study - Phase 1, LADOTD; Rapides Parish, LA.** *Safety Analyst.* Assisted in the prediction of future safety performance along the corridor. Responsible for development of conceptual design of intersection and corridor build alternatives. Specific duties included determining applicability of various intersection and corridor mitigation, ensuring design features accommodate roadway attributes, and identifying extent of ROW impacts.
02/17 – 02/18	**I-49 Interchange Safety Improvement Studies, LADOTD, Lafayette Parish, LA.** *Safety Analyst.* Responsible for the collection and evaluation of historical crash data, screening and selection of available safety improvement strategies that typically include alternative intersection configuration, roundabouts, corridor geometry and lane configuration, and driver awareness improvements. Safety analysis using HSM, IHSDM. Conceptual design of corridor/intersection safety improvements.
04/16 – 06/18	**Pete's Highway Interchange EA/IMR, LADOTD, Denham Springs, LA.** *Traffic and Safety Analyst.* Responsible for methodology development and overview of traffic analyses for a high-priority project. Work involves completing an EA and providing traffic engineering services related to improving congestion and operations along Range Avenue at the I-12 interchange. Design alternatives included two split diamond interchange options with roundabout, Page 28 of 57 Firm Name. Arcadis U.S., Inc. partial cloverleafs, and collector distributor road components at both Range Avenue and the next existing, eastern overpass at Pete's Highway (LA 16); and a diverging diamond interchange alternative at Range Avenue.
04/16 – Ongoing	**1-12 Hard Shoulder Running (HSR) Safety Study - Safety Studies Retainer, LADOTD, East Baton Rouge, Livingston Parishes, LA.** *Safety Analyst.* Reviewed and summarized the current best practices and safety research information on hard shoulder running experience in the U.S and Europe. Research included shoulder / median width and impacts to safety, desirable lengths for effective hard shoulder running, and CMFs to predict impacts to safety by reducing lane and / or shoulder widths. Produce a high-level technical memorandum that will assess various options of utilizing existing I-12 shoulders, researching the best practices, analyzing the safety and operational benefits, and determining the likely costs. Evaluated safety based on, crash

	analysis, the HSM predictive methods and the ISATe tool for Freeways. Estimated costs and benefits of operational and safety analysis for proposed alternatives.
04/15 – 09/18	New Orleans Pedestrian Stage 0 Safety Feasibility Study, LA Department of Transportation and Development (LADOTD), Orleans Parish, LA. *Safety Traffic Analyst*. Safety analyses performed utilizing the Highway Safety Manual 2010 guidelines and Crash Modification Factors (CMFs) from other sources. Analyses include developing two build alternatives that address safety and operational issues at each intersection for all road users and developing a stage "0" checklist.
05/18 – Ongoing	Baton Rouge Pedestrian Bicycle Safety Action Plan, LADOTD, Baton Rouge, LA. *Safety Analyst.* Supported the development and delivery of a Pedestrian and Bicycle Safety Action Plan for the City of Baton Rouge. Responsibilities include completing a review of crash data, identification of priority locations, and creation of targeted countermeasures based on roadway type. He was responsible of reviewing the crash data in both (Geographic Information Systems) GIS and PowerBI to determine areas to focus on the locations of 10 locations in the most need for pedestrian/bicycle safety improvement. The second phase of the project will allow for the development of detailed studies at the top 10 identified locations where safety countermeasures such as low-cost pedestrian and bicycle facility improvements.
2019 – Ongoing	District 8 Systemic Safety Project, Pedestrians, Ohio Department of Transportation and Development, Columbus, Ohio. *Safety Analysts.* Responsible for the review of data, including crash, roadway inventory, and demographics. The project required the development of a PowerBI dashboard and use of GIS analytics to review the crash data to determine metrics that were over-represented to locate areas where crashes are occurring, and areas where crashes may not be occurring, but have similar environmental characteristics (i.e., speed limit, lane width, driver or pedestrian age, presence of zero vehicle households, etc.), as where crashes are happening. This will allow the project team to not only develop engineering treatments, but also target areas for enhanced education and enforcement.
08/18 – Ongoing	Local Road Systemic Safety Task Order Contract, ODOT, Statewide, OH. *Safety Analyst.* Assisted with four concurrent task orders to perform data driven systemic safety analysis for ODOT's current SHP initiative to promote regional safety through systemic safety analysis. Each task order includes data collection / conflation / QA/QC, database management, data evaluation, examining crash history, developing crash trees, identifying focus facilities, identifying risk factors, identifying segments of the network that may be at risk for crashes, identifying and prioritizing safety improvements, and developing online web applications to clearly convey results to stakeholders using ESRI ArcMap and Microsoft PowerBI.
01/20 – Ongoing	Local Road Safety Plan Task Order Contract, ODOT, Statewide, OH. *Subconsultant Safety Analyst*. Assisting in the development and testing of ODOT's new SPAM Tool and completing a Local Road Safety Plan for the OMEGA MPO in east central Ohio. Under this contract we have two task orders including. SPAM Tool where we are developing the Tool which is a VBA macro-enabled Microsoft Excel workbook that will use the same data import format as ODOT's Crash Analysis Module (CAM) Tool and process crashes for given areas selected by users in the current ODOT Traffic Information Mapping System (TIMS) interface. The second task is OMEGA LRSP which includes testing the SPAM tool and lead stakeholder engagement to develop a regional local road safety plan and 8 counties specific LRSPs.

Firm employed by	ARCADIS		
Name	Greg Badon	Years of relevant experience with this employer	8
Title	Environmental Planner	Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization		BS / 2008 / Natural Resource Management, Louisiana State University	
Active registration number / state / expiration date		USACE 1987 Manual Wetland Delineation Training (Completed 2012); NHI Course 142073 Applying Section 4(f). Putting Policy into Practice; NHI Course 142005 NEPA and the Decision-making Process	
Year registered	N/A	Discipline	N/A
Contract role(s) / brief description of responsibilities.		Environmental Permitting	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Badon has an extensive background conducting and/or reviewing all components and technical studies required by NEPA. He has been responsible for EIS, EA, CE document preparation, environmental permitting, highway-traffic noise analysis, socioeconomic impacts, existing conditions documentation, wetland delineations / biological resource surveys, property-owner research, and addressing public comments through agency coordination, public outreach, and involvement. By having the experience to know what is required and expected under NEPA, he can effectively manage projects as they move though the NEPA process.
08/19 – 11/20	**Alphonse Forbes Bridge Over Sandy Bayou Replacement, East Baton Rouge Parish, Watson, LA**. *Planner.* The Alphonse Forbes Road bridge was closed and Arcadis was selected by the City-Parish to complete a design study, topographic survey, and preliminary and final designs. Developed a solicitation of views (SOV) packet, which was distributed to elected officials as well as government agencies. The SOV provided background information, which allowed the U.S. Army Corps of Engineers to provide guidance as to the format and permit they would expect to replace the bridge over U.S. Wetlands.
4/13 – Ongoing	**US 11 Norfolk Southern Railroad Overpass Replacement, LADOTD, St. Tammany Parish, LA.** *Project Manager and Project Scientist.* Mr. Badon was responsible for public/stakeholder outreach, agency coordination, technical workshop preparation, EA document preparation, noise modeling and traffic count field work, Phase I ESA fieldwork, wetland delineation, threatened and endangered species survey, stream assessments, document/records research, and technical report preparation.
12/13 – 08/17	**LA 3235 Stage 0 Feasibility Study, LADOTD, Lafourche Parish, LA**. *Project Scientist*. Responsible for Stage 0 Preliminary Scope and Budget and Environmental Checklists, Purpose and Need, environmental inventory and public outreach. Following the LADOTD Stage 0 Manual of Practice, all environmental resources within the study area were reviewed for potential impacts. Required right-of-way was determined and geometric layouts and cost estimates were generated.
05/13 – 5/15	**Joe Sevario/Roddy Rd Stage 0 Safety Study, LADOTD, Ascension Parish, LA.** *Project Scientist*. Responsible for Stage 0 Preliminary Scope and Budget and Environmental Checklists, Purpose and Need, environmental inventory and public outreach. Following the LADOTD Stage 0 Manual of Practice, all environmental resources within the study area were reviewed for potential impacts. Required right-of-way was determined and cost estimates were generated.
03/17 – Ongoing	**Baton Rouge Pedestrian-Bicycle Safety Action Plan / Stage 0 Feasibility Study, LADOTD, LA.** *Project Manager.* Responsible for the development and delivery of a Pedestrian and Bicycle Safety Action Plan for the City of Baton Rouge. Responsibilities include completing a review of crash data, identification of priority locations, and creation of targeted countermeasures based on roadway type. The second phase of the project will allow for the development of detailed studies at the top 10 identified locations where safety countermeasures such as low-cost pedestrian and bicycle facility improvements.

10/13 – 08/17	Retainer Contract for Safety Studies, Statewide LA. *Public Outreach.* Since 2013, Arcadis has assisted LADOTD as a prime consultant for the retainer contract. For two of the task orders under this contract, including LA 3235 Corridor Stage 0 Feasibility Study and Joe Sevario/ Roddy Road Roundabouts Stage 0, has been responsible for public/stakeholder outreach oversight and agency coordination. Organized and coordinated an open-house public meeting, developed mailers, and distributed them to local schools, churches, the metropolitan planning commission, community radio, and the chamber of commerce, developed public meeting summary detailing attendance, common issues, and included a response for each question received during the comment period.
05/12 – Ongoing	US 165 Connector and Ouachita River Bridge Environmental Impact Statement, LADOTD, Ouachita Parish, LA. *Deputy Project Manager.* Responsible for Section 4(f) resource documentation and investigation, property owner information, coordination with local agencies and stakeholders, an exhaustive wetland inventory / NWI ground-truthing investigation, biological resources and Threatened and Endangered Species review/documentation, and a wetland delineation. Also coordinated with LDWF on property exchange and plans for the Chauvin Swamp Tract Wildlife Management Area.
03/17 – Ongoing	I-49 South (Ricohoc to Berwick) Supplemental Environmental Impact Statement (SEIS), LADOTD, St. Mary Parish, LA. *Project Manager.* Following the December 2006 Record of Decision (ROD), LADOTD determined that the estimated cost for this segment of I-49 exceeded available resources and the corridor. Efficiencies would need to be developed to upgrade the existing US-90 to Interstate I-49 by constructing a safe corridor while minimizing impacts to businesses, residents, wetlands, and farmlands flanking the corridor. Responsible for project schedule, budget, agency coordination and project updates. Also responsible for public / stakeholder outreach & oversight, existing conditions documentation, field work, purpose and need development, and completion of LADOTD's Environmental Checklist.
01/14 – Ongoing	Pete's Highway / I-12 EA / IMR and Alternatives, LADOTD, Livingston Parish, LA. *Project Manager*. Known regionally as one of the most congested interchanges of I-12, Range Road (LA 3002) has been the bane of commuters for years. Responsible for public outreach and coordination, LADOTD Environmental Checklist, acquisition of property owner info and technical report documentation.
02/16 – Ongoing	Florida Avenue EA, LADOTD, Orleans and St. Bernard Parishes, LA. *Project Manager and Public Information Officer.* Responsible for public / stakeholder outreach oversight, agency coordination. Coordinated an effort for extensive public meeting notifications and outreach. Oversaw the distribution of door-hangers, radio announcements, advertisements in community papers, press releases, and venue setup. Developed the layout for the open-house public meeting and the looping presentation. Oversaw development of public meeting boards, comment cards, and sign-in sheets. Presented project plans to city council, homeowner organizations, neighborhood associations, and federal agencies as well as the local planning commission. Responded to questions received from the public and summarized meeting attendance and turnout in a public meeting summary document.
11/12 – 04/13	LA 594 (Millhaven Rd.) Stage 0 Compliant Study, I-20 Economic Development Corporation, Ouachita Parish, LA. *Project Scientist.* Responsible for Stage 0 Preliminary Scope and Budget and Environmental Checklists, Purpose and Need development, and environmental inventory. Following the LADOTD Stage 0 Manual of Practice, all environmental resources within the study area were reviewed for potential impacts. Required right-of-way was determined cost estimates were generated.

Firm employed by	ARCADIS		
Name	Jason Morrell, PWS	Years of relevant experience with this employer	6
Title	Environmental Scientist / Ecologist	Years of relevant experience with other employer(s)	12
Degree(s) / Years / Specialization		BS / 1999 / Environmental Economics,	
Active registration number / state / expiration date		Professional Wetland Scientist – #2319 / USA / Exp. 04/2023	
Year registered	2013	Discipline	Environmental Sciences
Contract role(s) / brief description of responsibilities.		Environmental Permitting	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Morrell has more than 18 years of experience in ecology and environmental compliance, including over 14 years of consulting experience. Prior to joining Arcadis, he served as a NEPA Analyst/Ecologist with the Georgia Department of Transportation (GDOT) evaluating environmental effects and completing permitting for transportation projects. He is well versed in the regulatory requirements, data collection and analysis techniques implemented in ecological resource protection. His occupational knowledge includes stream and wetland delineation, biological assessment, GPS/GIS data applications, and Clean Water Act Section 404 permitting. He possesses a sound understanding of stream and wetland mitigation design, permitting, and monitoring; and is experienced working with the Federal Highway Administration (FHWA), US Army Corps of Engineers (USACE), and US Fish & Wildlife Service (USFWS), as well as state resource agencies. He has experience preparing exhibits, including permit sketches, supporting USACE Nationwide and Individual Section 404 Permits applications and USFWS Biological Assessments using ArcGIS and MicroStation software. The following projects demonstrate Jason's management skills and project delivery experience.
10/15 – 04/18	**North Bayou Black Drive/Hanson Canal Bridge (OSBP) – LADOTD, Terrebonne Parish, LA**. *Ecologist*: Completed a technical review of the Biological Resources and Wetland Findings Report, including required exhibits, prepared for replacement of an off-system highway bridge. Findings from the wetland delineation report were used for a USACE Jurisdictional Determination and Section 404 permit application.
07/16 – 03/18	**Bayou Sara Streambank Restoration, West Feliciana Parish Department of Public Works, West Feliciana Parish, LA**. *Ecologist*: Project involves stabilizing the streambank along approximately 3,600 feet along Bayou Sara, where severe erosion is impacting the Town of St. Francisville's Wastewater Treatment Facility, pond levees, and the Parish's only access road (Ferdinand Street) to the Mississippi River. Completed a wetland delineation and protected species habitat assessment within the area proposed for bank stabilization, as well as adjacent staging and access areas. Provided technical review of a Biological Resources and Wetland Findings Report, including required exhibits, and NWP 13 PCN, including permit sketches for bank stabilization for which USACE authorization was successfully obtained.
07/16 – 11/16	**Pete's Highway / I-12 EA / IMR and Alternatives, LADOTD, Livingston Parish, LA.** *Ecologist*: Led a wetland delineation and protected species habitat assessment along Range Road in the vicinity of the I-12 interchange for the proposed interchange improvement project. Provided technical review of a Biological Resources and Wetland Findings Report, including required exhibits, in support of the NEPA Environmental Assessment.

12/15 – Ongoing	Reisor Subdivision Bridge Replacements, Union Pacific Railroad, Natchitoches Parishes, Louisiana and Caddo Parish, LA/Harrison County, TX. *Lead Ecologist:* Responsible for wetland delineation and protected species habitat assessments for replacement of two structurally deficient railroad bridges on the Union Pacific Reisor Subdivision line. Completed wetland findings report, including required exhibits, and calculated impacts to streams and wetlands for bridge replacements. Coordinated with design for impact avoidance and minimization and provided technical review of a Nationwide Permit (NWP) 14 Pre-Construction Notification (PCN), including permit sketches submitted to the USACE Fort Worth District for the Caddo Parish, LA/Harrison County, TX bridge.
12/15 – Ongoing	Environmental Analysis on Federal-Aid Projects by Consultant - FY 2016 & 2018, GDOT, Statewide, GA. *Associate Project Manager*: Responsible for managing GDOT embedded ecologists assigned management of ecology studies, permitting, and biological assessment for 80+ transportation projects. Responsible for managing environmental studies on projects through a Menu of Services (MOS) contract. Services provided include MOS scope and budge development, staff and subcontractor management, client and agency coordination, and technical review. Manage preparation of Nationwide and Individual Section 404 permitting and Section 7 ESA consultation, including Biological Assessments, for GDOT infrastructure development and improvement projects.
04/18 – Ongoing	State Funded Program Consultant Contract Environmental Document – FY 2017, GDOT, Statewide, GA. *Associate Project Manager:* Responsible for developing ecology toolkits, guidance documents, and templates for GDOT Office of Environmental Services use and publication. The toolkits provide clear and concise guidance for GDOT staff and consultants completing ecology studies, environmental permitting, and biological assessment. Services provided include collaboration with GDOT, FHWA, USACE, USFWS and the Georgia Department of Natural Resources (GeorgiaDNR) on guidance document development. Under this contract, a Biological Assessment template was developed with GDOT, USFWS, and FHWA for completing formal Section 7 Endangered Species Act (ESA) consultation on GDOT projects.
01/14 – 04/14	I-285 at Riverside Drive, GDOT, Fulton County, GA. *Lead Ecologist*: Led ecology surveys and reporting for the proposed conversion of signalized intersections at I-285 eastbound and westbound ramp termini and Riverside Drive to single lane roundabouts. Responsibilities included wetland delineation and protected species habitat assessment. Completed technical review of findings report, including required exhibits, and agency coordination to support NEPA documentation for the federally funded project.

Firm employed by	ARCADIS		
Name	Jayun Thibodeaux	Years of relevant experience with this employer	2
Title	Environmental Planner / Ecologist	Years of relevant experience with other employer(s)	3
Degree(s) / Years / Specialization		BS / 2017 / Environmental Management Systems, Louisiana State University	
Active registration number / state / expiration date		Relevant Training: Basic Wetland Delineation training by WTI (2018)	
Year registered	N/A	Discipline	N/A
Contract role(s) / brief description of responsibilities.		Environmental	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Thibodeaux is an Ecologist in the Arcadis Baton Rouge, Louisiana office with over three years of experience in environmental consulting. He holds a Bachelor of Science in Environmental Management Systems from Louisiana State University. He has supported various sectors including transportation, industrial, commercial, energy, and government. He has experience conducting environmental surveys including waters of the US (WOTUS) delineations and threatened and endangered species surveys throughout Louisiana, Arkansas, Texas, Mississippi, and Alabama. Mr. Thibodeaux has served as the technical lead and project manager for projects requiring permit coordination with the US Army Corps of Engineers (USACE), Louisiana Department of Natural Resources (LDNR), Office of Coastal Management (OCM), the Louisiana Department of Environmental Quality (LDEQ), as well as National Environmental Policy Act (NEPA) reviews for federal agencies.
04/20 – Ongoing	**LA 82 Improvement, Sabine Pass LNG, LP, Cameron Parish, LA.** *Ecologist*. Assisted in preparation of **environmental resource reports and data analysis** for submittal to the Federal Energy Regulatory Commission (FERC) for approval under the Natural Gas Act (NGA). Prepared ecology report, a Section 404 permit application, Section 7 Endangered Species Act documentation, and created figures utilizing GIS for the LA 82 improvements and modifications to the liquefied natural gas (LNG) facility entrance.
02/19 – 04/19	**Holton Harris Road Bridge, Monroe & Corie, Inc., LP, Over Lake Vernon in Vernon Parish, LA.** *Ecologist.* Conducted a **WOTUS delineation** for the replacement of an 80-foot long by 18-foot-wide timber bridge on Holton Harris Road, crossing Vernon Lake located south of the City of Anacoco, Louisiana. Responsible for **preparing a preliminary environmental finding report** and submitting a Nationwide Permit 14 Pre-Construction Notification.
05/20 – Ongoing	**Louisiana Coastal Use Permit Submittal – COP Stratco, Terrebonne Parish, LA.** *Technical Lead*. Responsible for developing and preparing **guidance documents, resource reports, and identifying potential impacts** for a joint permit application with the LDNR, OCM, and the USACE New Orleans District. The project involves the removal of several structures including abandoned oil wells, flowlines, and a barge that served as a well pad located in the Louisiana Coastal Zone. Reviewed available data to identify potential impacts to oyster leases, pre-existing pipelines/crossings, and prop washing zones. Created figures utilizing geographic information systems (GIS) software to illustrate project location(s), path, access, and oyster leases in accordance with LDNR and OCM's guidelines.

Firm employed by	ARCADIS		
Name	Richard Gilmour	Years of relevant experience with this employer	31
Title	Principal Environmental Planner	Years of relevant experience with other employer(s)	6
Degree(s) / Years / Specialization		MCRP / 1984 / Planning, Ohio State University- Main Campus BS / 1979 / Anthropology, Ramapo College of New Jersey	
Active registration number / state / expiration date		Certified Planner / US American Institute of Certified Planners Professional Planner – # 4828 / NJ / Exp. 05/2022	
Year registered	1990	Discipline	City Planning
Contract role(s) / brief description of responsibilities.		Environmental	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Gilmour is a Principal Environmental Planner experienced in leading the preparation of Environmental Assessments and Environmental Impact Statements in compliance with the National Environmental Policy Act (NEPA). Ancillary studies often include wetlands delineations, water resources analysis, terrestrial and aquatic resources surveys, biological assessments, cultural resources investigations, air quality modeling, noise studies, infrastructure capacity analysis, land use and socio-economic resources analysis, and coastal consistency determinations. He prepares NEPA documents for a wide range of actions proposed, funded, or permitted by federal agencies such as the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), U.S. Coast Guard (USCG), U.S. Army Corps of Engineers (USACE), U.S .Department of Defense, Federal Emergency Management Agency, U.S. Department of Housing and Urban Development (HUD), and Federal Aviation Administration (FAA). He has also supported and managed the permitting of dredging, bulkheading and bridge reconstruction projects, successfully obtaining permits from the USACE under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act, and the USCG under Section 9 of the Rivers and Harbors Act, as well as compliance with the Coastal Zone Management Act, Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act, National Historic Preservation Act, and others.
01/17 – 04/19	**Flood Protection Queens Midtown & Hugh L Carey Tunnel, New York City (NYC) Transit, Bridges & Tunnels, NY**. *Task Manager*: Managed the completion of all permitting and approvals required from federal (**USACE**, **USCG**), State (New York State Office of Parks Recreation and Historic Preservation), and local (New York City [NYC] Landmarks Preservation Commission, NYC Department of City Planning (DCP) Coastal Consistency, NYC Department of Transportation [DOT]) agencies for permanent and deployable flood control improvements in State and Federal waters of the U.S. (Hugh L. Carey Tunnel Air Vent in NY Harbor) and within city street rights-of way. Required consultation and coordination with NYC DOT, NYC Transit, NYC Parks, Amtrak, NYC Department of City Planning, and other agencies.
01/07 – 12/20	**Crane Road Bridge Replacement Environmental Assessment and Permitting, Westchester County Department of Public Works, Scarsdale and Greenburgh, NY.** *Project Manager:* Responsible for the completion of an EA in compliance with NEPA, NYS SEQR, and documentation for a CE determination by the FHWA under NEPA for the federally funded Reconstruction of the Structures Carrying the Bronx River Parkway over the Bronx River and Metro North Railroad (Crane Road Viaduct) (PIN 8110.13) in Scarsdale and Greenburgh, NY. Provided oversight, coordination, and direction of technical analyses for three build alternatives and a No Build alternative that included a Phase I Archaeological Investigation, hazardous materials investigation, Noise Study, Environmental Justice screening, Air Quality Screening, Stormwater Pollutant Loading analysis, Floodplain Evaluation, Scour

	Analysis, tree survey, and water quality sampling and analyses. The bridge is a contributing element of the Bronx River Parkway Reservation, which is NRHP listed. As such, prepared a Programmatic Section 4(f) Statement in consultation with the project's historic preservation consultant to address Section 4(f) cultural resource considerations. Also led the preparation of permit applications and obtained approvals for a Nationwide Permit from the USACE and the NYS Department of Environmental Conservation for a CWA Section 401 Water Quality Certificate, which were obtained in record time.
09/14 – 08/16	Reconstruction of I-95 (MP NE14 to MP NE15), New York State Thruway Authority (NYSTA), Rye, NY. *Project Manager*: Responsible for environmental studies, impact analyses, and environmental documentation under NEPA/NY SEQR for reconstruction of ramps and bridges along I-95, between I-287 and the Connecticut state line. Prepared for and participated in meeting with the NYSTA and FHWA during scoping and in presentations to local elected officials and the public during informational meetings.
03/14 – 01/16	Newtown Creek Nature Walk CEQR EAS and ULURP Permitting, NYC Department of Design and Construction/NYCDEP, Brooklyn, NY. *Task Manager:* Managed the completion of environmental reviews and permitting of a NYC Department of Environmental Protection sponsored project that was designed under the management of the NYC Department of Design and Construction. Services included preparation of a City Environmental Quality Review (CEQR) Environmental Assessment Statement (EAS) and applications for construction of a pedestrian "bridge" over Whale Creek Canal and open space within a demapped street. Coordinated pre-application meetings with USACE, NYS Department of Environmental Conservation (NYSDEC), NYC DOT; obtained NYC Department of Small Business Services and NYC Fire Department plan approvals, as well as permits from the NYSDEC, USCG (Advance Approval), USACE, and NYS Department of State Coastal Management Program and NYC DCP Waterfront Revitalization Program consistency concurrences.
06/19 – Ongoing	Long Beach WPCP Pump Station and Force Main, Nassau County DPW, Hempstead and Long Beach, NY. *Task Manager*: Leading a team of scientists and engineers to acquire permits and approvals from federal, state, and local agencies for a pump station and 3-mile-long sewer force main to be constructed under a federal navigation channel and through federal and NYS wetlands via horizontal directional drilling methods. Led the team in an initial pipeline routing analysis and ranking, considering environmental constraints, land acquisition, and permitting issues. Supporting the client in managing and coordinating with the design team and the client in completion of title search, parkland boundary surveys, and metes and bounds descriptions for parkland alienation legislation enacted by the NYS Legislature for use of lands under the surface of Nassau County's Bay Park and the City of Long Beach's Veterans Memorial Park. Successfully obtained NYSDEC Region office agreement to allow construction in tidal wetlands throughout the year - the critical factor in assuring the Governor's Office of Storm Recovery (GOSR) of the feasibility of the selected route and amendment of the Living with the Bay Action Plan to include the project for receipt of an estimated $24 million of CDBG-DR funding from HUD. Managed coordination with GOSR and NYSDEC HQ staff on preparation of NEPA environmental review documentation. Managed the preparation and acquisition of USACE Nationwide Permit, NYSDEC wetland, and local permits for geotechnical borings to support design of the force main. Managed the preparation of a Joint Application to the USACE and NYSDEC, USCG Advance Approval for a temporary construction bridge, and other permits and approvals required for State Coastal Management Program consistency, and local agencies for construction of the project.

Firm employed by	ARCADIS		
Name	Jeremy Henson	Years of relevant experience with this employer	4.5
Title	Principal Ecologist/Permitting Specialist	Years of relevant experience with other employer(s)	15
Degree(s) / Years / Specialization		MS / 2011 / Ecology, Texas State University BS / 2001 / Biology, University of Central Missouri	
Active registration number / state / expiration date		Certified Ecologist	
Year registered	2009	Discipline	Ecology
Contract role(s) / brief description of responsibilities.		Environmental Permitting	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Henson is currently a principal ecologist and leader of the Texas ecology and permitting group with 19 years of experience conducting and managing natural resource assessments and planning/permitting projects throughout the United States. He is also a certified ecologist through the Ecological Society of America. His project experience includes National Environmental Policy Act (NEPA) documents (e.g., comprehensive conservation plans for the U.S. Fish and Wildlife Service, environmental assessments for Texas Department of Transportation, the National Park Service, and Public Utility Commission); wind energy studies; surface mining studies; wetland delineations and permitting in accordance with the U.S. Army Corps of Engineers; sensitive species habitat assessments and geographic information system (GIS) mapping; biological assessments; threatened and endangered species surveys; wildlife surveys; botanical inventories; and focused rare plant surveys. Mr. Henson will be responsible for wetland delineation coordination, permitting, and environmental documentation.
09/19 – Ongoing	**Fortier Manufacturing Facility – Wetland Delineation and Permitting Support Project, Cornerstone Chemical Company; Jefferson Parish, LA.** *Senior Technical Permitting Lead* for a wetland delineation and permitting analysis for a chemical facility expansion project located in Jefferson Parish, LA. The project site is approximately 800 acres on the south side of the Mississippi River and is bisected my numerous forested wetlands and canals. Conducted a preliminary Waters of the U.S delineation and preliminary jurisdictional determination; threatened and endangered species evaluation; and desktop cultural resources assessment within the project site. Prepared a technical report depicting the boundaries of potentially jurisdictional resources and an analysis of the subsequent environmental permitting requirements based on the project parameters. Currently engaged in project permitting support and will engage with applicable regulatory agencies, as needed.
11/18 – 01/19	**Comite River Diversion – Pipeline HDD Project, Confidential Oil & Gas Client Pipeline Company; East Baton Rouge Parish, LA.** *Lead Scientist* for the relocation of Confidential Oil & Gas Client Company's LA-90, 16-inch diameter gasoline pipeline prior to construction of the Comite River Diversion Canal located north of Baton Rouge, LA. The proposed project is a 12-mile diversion channel, which would be constructed from the Comite River to the Mississippi River. The purpose of the project is to provide flood-damage reduction for residents in the lower part of the Comite River Basin by diverting flood waters into the Mississippi River. In addition to the construction of the canal, associated infrastructure such as control structures, levees, roads, and utilities will need to be constructed, modified, or relocated to implement the project. Performed environmental/ecological assessment and the following agency coordination and permitting: U.S. Army Corps of Engineers (USACE) Section 404/10 and 408 permitting; LA Department of Environmental Quality (LDEQ) 401 Water Quality Certification and stormwater permitting;

	LA Department of Wildlife and Fisheries (LDWF) rare wildlife species coordination; LA Office of Cultural Development-Division of Historic Preservation (LOCD-DHP) coordination; and city/parish floodplain permitting and levee crossing coordination.
08/18 – 02/19	Northeast Sanitary Sewer Line Project - City of College Station, TX. *Project Manager and Senior Technical Lead* on the development of an Environmental Assessment for the HUD-funded Northeast Sanitary Sewer Line Project in College Station, Texas. The funding was allocated through the Community Development Block Grant (CDBG) program and HUD served as the lead federal agency. The responsible entity was the City of College Station and the project served to relocate and expand an existing 36-inch sewer main for increase capacity from surround community growth and development. Arcadis completed the Environmental Assessment following the HUD NEPA process outlined in 24 CFR Part 58, including preparation of the EA checklist, floodplain/wetland notification form, public scoping, agency coordination, site survey, and permitting support.
06/18 – 12/18	Monte Sano Bayou Pipeline Water – Pipeline HDD Project, Confidential Oil & Gas Client Pipeline Company; East Baton Rouge Parish, LA. *Lead Scientist* for the installation of a new cross-brace members within the existing pipe support structure over Monte Sano Bayou in East Baton Rouge Parish, LA. Services included environmental/ecological assessment and regulatory permitting services for the pipeline. Project-related agency coordination and/or permits included: USACE Section 404/10 permitting; LDEQ 401 Water Quality Certification and stormwater permitting; LDWF rare wildlife species coordination; LOCD-DHP coordination; and city/parish floodplain permitting and levee crossing coordination.
04/17 – 02/18	Houston Toad Habitat Assessment, AV Mcgraw, Dallas, TX. *Project Manager and Senior Technical Ecologist* for a proposed 800-acre hydraulic frac-sand development project in Burleson County, Texas. Led the development of a focused habitat assessment for the federally listed endangered Houston toad, which paved the way for comprehensive impact avoidance and Incidental Take permitting negotiations with U.S. Fish and Wildlife Service. The proposed project was considered unviable by multiple other biologists and environmental permitting experts; however, thorough site analysis, planning, and agency engagement allowed for the implementation of voluntary long-term (three-year) protocol-level species surveys, agency reporting, and impact mitigation.
04/17 – 02/18	Holloman AFB P1/ Limited P2 EBS, USACE - Albuquerque District; Alamogordo, NM. *Senior Technical Lead* on the development of an Environmental Assessment for Holloman Air Force Base (HAFB) that analyzed the potential impacts associated with the development of renewable energy production on property owned by HAFB, located south of Alamogordo, New Mexico. HAFB wanted to explore further use of the property to offset energy consumption associated with a network of potable water wells and provide increased energy resiliency through installation of renewable energy infrastructure. The specific type of renewable energy to be used was not limited at the time but was expected to include solar or wind energy production methods, either grid-tied or off-grid, leveraging emerging energy storage technologies. The overarching objective of the Environmental Impact Assessment Program (EIAP) was to rapidly enable the installation of renewable energy projects and execute any future renewable energy production opportunities without having to conduct further National Environmental Policy Act (NEPA) analysis.

Firm employed by	CD&C INCORPORATED		
Name	Ralph Burgess, PLS	Years of relevant experience with this employer	11
Title	Principal Land Surveyor	Years of relevant experience with other employer(s)	12
Degree(s) / Years / Specialization		BS / 2004 / Industrial Design & Supervision, Southeastern LA University	
Active registration number / state / expiration date		PLS 5040 / LA / Exp. 09/2022	
Year registered	2010	Discipline	Land Surveyor
Contract role(s) / brief description of responsibilities.		Surveying and Title Work Services	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Burgess will serve as a Survey Manager for this project. He will work to oversee the project progress stays on schedule, aide in both crew coordination and office production, and provide final QC on the firms' deliverable to the Prime Consultant. Mr. Burgess has an extensive background in providing topographic surveys for LADOTD in accordance with Location and Survey policies and procedures. He has overseen projects utilizing traditional means and methods of collecting data as well as those that include the use of 3D Terrestrial Scanning.
07/20 – 04/21	**Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge, East Baton Rouge Parish, LA.** Served as the *Survey Manager* for this project. CD&C as a sub-consultant on this project was responsible for topographic surveying the LA 67 and LA 19 sites of the Comite River Diversion project. This included merging of data from a previous survey on one portion of the site and field verifications of that data. The topographic data for this project was collected traditionally.
01/18 – 01/20	**I-10: LA 415 to Essen Lane on I-10 and I-12, West and East Baton Rouge, LA**. Served as the *Surveying Manager* for this project. CD&C as a sub-consultant on this project is responsible for topographic surveying the portion of I-10 in West Baton Rouge Parish beginning at the start of the project limits to a point just before the approach of the I-10 Bridge and the limits of the project along LA 415 including work on Tributaries of the Intercoastal Canal. This work included using 3D Scanning for the bridge at I-10 bridge @ LA 415 as well as scanning every 500' for control verification and incorporation of the Mobile Lidar for the I-10 pavement.
07/17 – 12/18	**30 Roundabout at Tanger I-10, Ascension Parish, LA**. Served as *Survey Manager* for the project. Duties included meeting with LADOTD & Cardno, Inc for utility locations, coordination of crews and 3D terrestrial scanning crews along with office personnel, coordination. Special duties were merging of two state projects with project survey for final submittal to combine all projects together.
01/16 – 08/16	**US 190 Superstreet, St. Tammany Parish, LA**. Served as *Survey Manager* for the project. Duties included complete topographic survey and drainage map for this project including all utility coordination. The survey began at the intersection of US 190 and Holiday Square Frontage Road. From this point, the survey proceeded in a northerly direction along US 190 for approximately 2.9 miles to a point that is 700 feet South of Intersection of US 190 and E. Boston St. in Covington, LA. This project also included work in the Abita River and utilized 3D Terrestrial Scanning for the main route.

10/15 – 12/18	I-10 Texas State Line –East of Coone Gully, Calcasieu Parish, LA. Served as *Survey Manager* for the project. Duties included meeting with LADOTD, coordination of traditional crews and 3D terrestrial scanning crews, coordination of utility companies on the project, review and verification of drainage crossing I10, merging of existing topographic survey of bridges from LADOTD and final review of all survey data for submittals
08/16 – 12/17	I-49 South at Verot School Road, Lafayette, LA. Served as the *Survey Manager* for the project. Duties included meeting with LADOTD, and all consultants on the team, coordination of both traditional crews and 3D terrestrial scanning crew, coordination of survey crews with Cardno, Inc, utility locations on the project, met and review right of entry with landowners for project, review of drainage map, merging of existing topographic survey of the I-49 Connector project from LADOTD with current survey of project, review of apparent right of way mapping for prime consultant, and final review of all survey data.
07//14 – 10/15	I-110 North Street to Plank Road, EBR Parish, LA. Served as *Survey Manager* for the project. Duties included meeting with LADOTD, coordination of traditional crews and 3D terrestrial scanning crews, review and verification of drainage map, merging and final review of all survey data for submittals. Other special duties were coordinating with LADOTD District 61 for a rolling lane closure for location of drainage located in the interior of the project along the existing crash wall. Also, coordination with LADOTD Records and EBR City Parish regarding the research of all drainage structures that enter and leave the project area.
04/17 – 07/17	LA 58 Petit Caillou Bridge Rehabilitation (Sarah Bridge), Terrebonne Parish, LA. Served as *Survey Manager* on this project which included a complete topographic survey, utility coordination, channel cross-sections and the scanning of the existing vertical lift bridge for the design of its repairs/replacement. Project included data collection of the topography via traditional means and methods along with 3D terrestrial scanning and hydrographic surveying.
03/14 – 06/14	Cleo Road Roundabout, St. Tammany Parish, LA. Served as the *Project Manager* for the project. CD&C was responsible for the topographic survey that began approximately 2400 ft. NW of intersection of I-59 and US Hwy 1090 and ended approximately 1000 ft. NW of intersection of I-59 and US Hwy 1090. The survey also included 500 ft. of Cleo Road and 175 ft. of Avenue D.
05/13 – 07/13	LA 1 Railroad Bridge at DOW, West Baton Rouge, LA. *Survey Manager* for this project located in West Baton Rouge Parish. The intent is to create a grade separation at the intersection of LA 1 and the R/R spur for DOW. CD&C is performing all of the topographic survey for this project including utility coordination and R/R coordination and permits so that CD&C can survey the spur and parallel line.
10/14 – 12/14	West Prien Lake, Lake Charles, LA: Served as the *Survey Manager* for this project. This project was to provide topographic survey for a new route to be constructed. Topographic survey and DTM was required along the proposed alignment including all utilities and all drainage with the survey limits.

Firm employed by	CD&C INCORPORATED		
Name	Chris Ballard, PLS	Years of relevant experience with this employer	6
Title	Survey Project Manager	Years of relevant experience with other employer(s)	19
Degree(s) / Years / Specialization		BS / 2004 / Biological Science, Southeastern LA University	
Active registration number / state / expiration date		PLS 5033 / LA / Exp. 09/2022	
Year registered	2010	Discipline	Land Surveyor
Contract role(s) / brief description of responsibilities.		Surveying and Title Work Services	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Ballard serves as Survey Project Manager responsible for directing crews, overseeing processing of field data, and aiding with coordination with other team members to ensure that the project is completed in accordance with project schedule background in providing topographic and ROW.
01/18 – 01/20	**H.004100 I - 10: LA 415 to Essen Lane on I - 10 and I - 12, West and East Baton Rouge, LA**. Served as the *Surveying Project Manager* for this project. CD&C as a sub - consultant on this project is responsible for topographic surveying the portion of I - 10 in West Baton Rouge Parish beginning at the start of the project limits to a point just before the approach of the I - 10 Bridge and the limits of the project along LA 415 including work on Tributaries of the Intercoastal Canal. This work included using 3D Scanning for the bridge at I - 10 bridge @ LA 415 as well as scanning every 500' for control verification and incorporation of the Mobile Lidar for the I - 10 pavement.
04/17 – 07/17	**H.010006.5 - 3 LA 58 Petit Caillou Bridge Rehabilitation (Sarah Bridge), Terrebonne Parish, LA**. Served as the firms *Survey Project Manager* on this project which included a complete topographic survey, utility coordination, channel cross sections, and the scanning of the existing vertical lift bridge for the design of its repairs/replacement. Project included data collection of the topography via traditional means and methods along with 3D terrestrial scanning and hydrographic surveying.
02/19 – 09/19	**Bridge Replacements in East Feliciana Parish, Rural East Feliciana Parish, LA**. Served as *Survey Project Manager* for this project for East Feliciana Parish Police Jury. It includes the replacement of 2 bridges which were damaged from flooding and the repairs to many rural roadways throughout the parish. These projects are being funded thru FEMA and all documentation has to be in accordance with FEMA's policies and procedures.
01/17 – 12/17	**East Baton Rouge Parish Bridges, East Baton Rouge Parish, LA.** In 2017, CD&C has performed topographic surveys for at least four Bridge Replacement Projects throughout East Baton Rouge Parish. Served as *Survey Project Manager* on each of these projects which included cross - sectioning and tracing the channel at each location. These included bridges over Dawson Creek, Claycut Bayou, Copper Mill Bayou, and Cypress Bayou.
10/16 – 11/16	**H.012728.5 LA 443: Tangi River Bridge Replacement, Tangipahoa Parish, LA**. Served as the *Project Manager* for this Project. Among the duties performed for the project were review of the crew work conditions, review & processing of the survey data, verification and review of final submittal. CD&C completed a topographic survey which included all utilities with depths, all

	drainage, all building information including finish floor elevations, and all super/substructure of the bridge over the Tangipahoa River. Additional information regarding the river was located by traditional means upstream and downstream for the engineer's design of the new bridge. To utilize data collection of the failed bridge, 3D Terrestrial Scanning was incorporated in conjunction with traditional means to complete the topographic survey. Due to the nature of the project being an Emergency Bridge replacement all staff worked on this project non - stop until field work was completed in less than 3 weeks.
09/17 – 12/17	H.012650.5 - 1 District62 Bridges, Livingston and Tangipahoa Parishes, LA. Served as a *Survey Project Manager* for this project which included 5 bridge sites in District 62. In addition to all of the existing data for the bridge and roadway at each site, each channel was cross - sectioned both upstream and downstream of the bridge. These included bridges over the US 190 Bridge over Gray's creek, 2 bridges on LA 442 both crossing East Hog Branch, LA 1063 over the Natalbany River, and US 51 over Ponchatoula Creek. Several of these bridges including the US190 one was surveyed utilizing 3D Terrestrial Scanning.
10/15 – 12/18	H.003184.5 I - 10 Texas State Line – East of Coone Gully, Calcasieu Parish, LA. Served as the *Survey Project Manager* on this project which is a 6 - lane widening of I - 10. Duties performed on this project included the review of the survey information from crew, verification of project delivery schedule, processing of data and final review of submittal of project. 3D Terrestrial Scanning was used in conjunction with traditional means and methods for the completion of this project.
01/16 – 08/16	H.005733.5 US 190 Superstreet, St. Tammany Parish, LA. Served as the *Survey Project Manager* on this project. CD&C provided a complete topo survey & drainage map along with utility coordination for the project. Project duties included processing of data, review of field notes and weeklies, & performing final punch list. This project also included work in the Abita River utilized 3D Terrestrial Scanning for the main route.
10/15 – 01/16	H.011773 Hanks Dr/Landis Drive Pedestrian Improvements, East Baton Rouge Parish, LA. Served as the *Survey Project Manager* on this project that included a topographic survey and establishment of the ROW for Hanks Dr. for installation of new sidewalk.
06/11 – 09/13	260 - 01 - 0028, H.002372 LA 42 Widening and Improvements, Ascension Parish, LA. Worked as a *PLS* on this project which included boundary and topography, establishing the existing ROW and acquisition of additional ROW.
07/17 – 12/18	H.010960.5 - 2, LA 30 Roundabout at Tanger I - 10, Ascension Parish, LA. Served as the *Survey Project Manager* on this project that includes a complete topo survey, utility coordination and drainage, along with finish floor elevations of all buildings that fall within the survey limits. Project included data collection of the topography via traditional means and methods along with 3D terrestrial scanning.
01/18 – 01/20	H.004100 I - 10: LA 415 to Essen Lane on I - 10 and I - 12, West and East Baton Rouge, LA. Served as the *Surveying Project Manager* for this project. CD&C as a sub - consultant on this project is responsible for topographic surveying the portion of I - 10 in West Baton Rouge Parish beginning at the start of the project limits to a point just before the approach of the I - 10 Bridge and the limits of the project along LA 415 including work on Tributaries of the Intercoastal Canal. This work included using 3D Scanning for the bridge at I - 10 bridge @ LA 415 as well as scanning every 500' for control verification and incorporation of the Mobile Lidar for the I - 10 pavement.

Firm employed by	CD&C INCORPORATED		
Name	Madison Mills, LSI	Years of relevant experience with this employer	1
Title	Land Survey Intern	Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization		BS / 2016 / Civil Engineering	
Active registration number / state / expiration date		LSI 0000716 / LA / Exp. 09/2023	
Year registered	2021	Discipline	Land Surveyor Intern
Contract role(s) / brief description of responsibilities.		Survey Technician	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Mills joined CD&C in 2021 as a Land Surveying Intern. Madison will be taking his PLS exam in 2022. He serves as a Survey Technician for CD&C working to manage field crews, process field crew data, and finalize deliverables.
02/21 – Ongoing	**H.013955 LA 961 Bride at Sandy Creek, West Feliciana Parish, LA.** Worked as an *LSI* on this project. Helped manage crews, processed field data, created punch-lists, worked with utilities, and helped complete the final deliverables to the client. Also worked on property surveys and ROW mapping.
02/21 – Ongoing	**H.013956 LA 961 Bridge at Beamon Rd. Bayou Maringouin, Pointe Coupee Parish, LA.** Worked as an *LSI* on this project. Helped manage crews, processed field data, created punch-lists, worked with utilities, and helped complete the final deliverables to the client. Also worked on property surveys and ROW mapping.
07/21 – 11/21	**H.009290.5 Safe Routes to Schools – LSU Sidewalk Improvement near LSU Lab School, Baton Rouge, LA.** Worked as an *LSI* on this project. Helped manage crews, processed field data, created punch-lists, worked with utilities, and helped complete the final deliverables to the client.
02/21 – 05/21	**H.010108 Safe Routes to Schools – Independence Sidewalks, Baton Rouge, LA:** Mr. Mills worked as an *LSI* on this project. Helped manage crews, processed field data, created punch-lists, worked with utilities, and helped complete the final deliverables to the client.
07/21 – 12/21	**H.0014560.5 LA 94 Vermillion River, St. Martin Parish, LA.** Worked as an *LSI* on this project. Helped manage crews, processed field data, created punch-lists, worked with utilities, and helped complete the final deliverables to the client.

Firm employed by	CD&C INCORPORATED		
Name	Jacob Stoehr	Years of relevant experience with this employer	7
Title	Survey Party Chief	Years of relevant experience with other employer(s)	1.5
Degree(s) / Years / Specialization		N/A	
Active registration number / state / expiration date		ATSSA Certified as Traffic Control Supervisor / Exp. 2023 ATSSA Certified as Registered Flagger / Exp. 05/2025	
Year registered	N/A	Discipline	N/A
Contract role(s) / brief description of responsibilities.		Survey Technician	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Stoehr serves as a Survey Party Chief managing a crew to collect topographic data in the field in accordance with Location and Survey means and methods.
01/18 – 01/20	**H.004100 I-10: LA 415 to Essen Lane on I-10 and I-12, West and East Baton Rouge, LA.** Served as a *Survey Party Chief* for this project. CD&C as a sub-consultant on this project is responsible for topographic surveying the portion of I-10 in West Baton Rouge Parish beginning at the start of the project limits to a point just before the approach of the I-10 Bridge and the limits of the project along LA 415.
07/17 – 12/18	**H.010960.5-2, LA 30 Roundabouts at Tanger I-10, Ascension Parish, LA.** Served as one of the *Survey Party Chiefs* on this project by managing a crew in the collecting of topographic data in the field utilizing LADOTD Field Codes.
08/16 – 01/18	**H.011235 I-49 Verot School Road, Lafayette, LA.** Served as one of the *Survey Party Chiefs* on this project by managing a crew in the collecting of topographic data in the field utilizing LADOTD Field Codes.
05/17 – 07/17	**H.011909.5-2 Roundabout US 171 at Boone Street, Vernon Parish, LA.** Served as one of the *Survey Party Chiefs* on this project by managing a crew in the collecting of topographic data in the field utilizing LADOTD Field Codes.
01/16 – 08/16	**H.005733.5 US 190 Superstreet, St. Tammany Parish, LA.** Served as one of the *Survey Party Chiefs* on this project by managing a crew in the collecting of topographic data in the field utilizing LADOTD Field Codes.
10/15 – 12/18	**H.003184.5 I-10 Texas State Line East of Coone Gully, LA.** Served as one of the *Survey Party Chiefs* on this project by managing a crew in the collecting of topographic data in the field utilizing LADOTD Field Codes.
10/16 – 11/16	**H.012728.5 LA 443 Emergency Bridge Replacement, Tangipahoa Parish, LA.** Served as one of the *Survey Party Chiefs* on this project by managing a crew in the collecting of topographic data in the field utilizing LADOTD Field Codes.

Firm employed by	CD&C INCORPORATED			
Name	Jason Stoehr		Years of relevant experience with this employer	5
Title	Survey Party Chief		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization			N/A	
Active registration number / state / expiration date			ATSSA Certified as Traffic Control Technician / Exp. 2025 ATSSA Certified as Registered Flagger / Exp. 06/2023	
Year registered	N/A	Discipline	N/A	
Contract role(s) / brief description of responsibilities.			Survey Technician	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Stoehr will serve as a Survey Party Chief managing a crew to collect topographic data in the field in accordance with Location and Survey means and methods.
07/20 – 04/21	**Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge, East Baton Rouge Parish, LA.** Served as a *Party Chief* on this project. CD&C as a sub-consultant on this project was responsible for topographic surveying the LA 67 and LA 19 sites of the Comite River Diversion project. The topographic data for this project was collected traditionally.
01/18 – 01/20	**I-10: LA 415 to Essen Lane on I-10 and I-12, West and East Baton Rouge, LA.** Served as the *Survey Party Chief* for this project. CD&C as a sub-consultant on this project is responsible for topographic surveying the portion of I-10 in West Baton Rouge Parish beginning at the start of the project limits to a point just before the approach of the I-10 Bridge and the limits of the project along LA 415.
07/17 – 12/18	**LA 30 Roundabouts at Tanger I-10, Ascension Parish, LA.** Served as one of the *Survey Party Chiefs* on this project by managing a crew in the collecting of topographic data in the field utilizing LADOTD Field Codes.
08/16 – 01/18	**I-49 Verot School Road, Lafayette, LA.** Served as one of the *Survey Party Chiefs* on this project by managing a crew in the collecting of topographic data in the field utilizing LADOTD Field Codes.
02/19 – 09/19	**Bridge Replacements in East Feliciana Parish, Rural East Feliciana Parish, LA**. Served as a *Jr. Party Chief* this project for East Feliciana Parish Police Jury. It includes the replacement of two bridges which were damaged from flooding and the repairs to many rural roadways throughout the parish. These projects are being funded thru FEMA and all documentation has to be in accordance with FEMA's policies and procedures.
07/17 – 12/18	**I-10 Texas State Line East of Coone Gully, LA.** Served as an *Instrument Man* on this project by aiding the crew in the collecting of topographic data in the field utilizing LADOTD Field Codes.

Firm employed by	CD&C INCORPORATED		
Name	Philip Dupree	Years of relevant experience with this employer	10
Title	Survey Party Chief	Years of relevant experience with other employer(s)	30
Degree(s) / Years / Specialization		N/A	
Active registration number / state / expiration date		NSPS Certified Survey Technician, Level III, Boundary Cert. No. 0799-1106 / Nationwide ATSSA Certified as Registered Flagger / Exp. 01/2026 ATSSA Certified Traffic Control Tech & Traffic Control Supervisor / Exp. 2023	
Year registered	N/A	Discipline	N/A
Contract role(s) / brief description of responsibilities.		Survey Technician	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Dupree serves as a Senior Survey Party chief responsible for overseeing a crew and aiding in coordinating all crews with Survey PM to ensure field work is being completed timely and accurately.
07/20 – 04/21	**Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge, East Baton Rouge Parish**. Served as the *Senior Party Chief and Field Coordinator* for this project. CD&C as a sub-consultant on this project was responsible for topographic surveying the LA 67 and LA 19 sites of the Comite River Diversion project. The topographic data for this project was collected traditionally.
01/18 – 02/20	**I-10 LA 415 to Essen Lane on I-10 and I-12, West and East Baton Rouge, LA.** Served as the *Survey Party Chief* for this project. CD&C as a sub-consultant on this project is responsible for topographic surveying the portion of I-10 in West Baton Rouge Parish beginning at the start of the project limits to a point just before the approach of the I-10 Bridge and the limits of the project along LA 415.
07/17 – 12/18	**LA 30 Roundabout at Tanger I-10, Ascension Parish, LA.** Served as *Field Coordinator* on this project by working specifically to set the control on the job and overseeing field crews as they work to complete the topography.
10/15 – 12/18	**I-49 South at Verot School Road, Lafayette, LA.** Served as *Field Coordinator* on this project. Resurrected the original control set on the project and oversaw the checking of it. Responsible with the R/R and also the SUE contractor on the project. Oversaw all field crews and ensured that the project was completed accurately and timely.
01/16 – 08/16	**US 190 Superstreet, St. Tammany Parish, LA.** Served as *Field Coordinator* on this urban roadway topography project that included 3D scanning in addition to traditional topography. He oversaw the daily progress of both traditional field crews and scan crews and completed the project accurately and on schedule.
10/16 – 11/16	**LA 443 Tangi River Bridge Replacement, Tangipahoa Parish, LA**. Served as *Field Coordinator* on this project. CD&C completed a topographic survey which included all utilities with depths, all drainage, all building information including finish floor elevations, and all super/substructure of the bridge over the Tangipahoa River. Additional information regarding the river was located by traditional means upstream and downstream for the engineer's design of the new bridge. To utilize data collection

	of the failed bridge, 3D Terrestrial Scanning was incorporated in conjunction with traditional means to complete the topographic survey.
07/14/ – 10/15	I-110 North St. to Plank Road, Baton Rouge, LA. Served as *Field Coordinator* on this heavily traveled Interstate project that included 3D scanning in addition to traditional topography. Oversaw the daily progress of both traditional field crews and scan crews and completed the project accurately and on schedule. Also coordinated with the district and state police to oversee the rolling lane closure that was required to obtain the drainage invert data.
05/13 – 07/13	LA 1 Railroad Bridge at DOW, West Baton Rouge, LA. Served as *Senior Party Chief* for this project located in West Baton Rouge Parish. The intent is to create a grade separation at the intersection of LA 1 and the R/R spur for DOW. CD&C is performing all of the topographic survey for this project including utility coordination and R/R coordination and permits so that CD&C can survey the spur and parallel line.
10/14 – 12/14	West Prien Lake, Lake Charles, LA. Served as the *Senior Party Chief* for this project working to collect all field data as required by the project. This project was to provide topographic survey for a new route to be constructed. Topographic survey and DTM was required along the proposed alignment including all utilities and all drainage with the survey limits.
02/14 – 03/17	I-49 Design Build. Served as the *Senior Party Chief* for this project working to collect all field data as required by the project. CD&C also produced ROW maps for the project. Also was the lead Party Chief for the property surveys on this project.

Firm employed by	CD&C INCORPORATED		
Name	Scott Benton	Years of relevant experience with this employer	5
Title	Senior Technician	Years of relevant experience with other employer(s)	5
Degree(s) / Years / Specialization		N/A	
Active registration number / state / expiration date		ATSSA Certified as Traffic Control Supervisor / Exp. 04/2024 ATTSA Certified as Flagger / Exp. 02/2024	
Year registered	N/A	Discipline	N/A
Contract role(s) / brief description of responsibilities.		Survey Technician	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Benton serves as a Senior Technician specializing in 3D Terrestrial Scanning, processing, and extraction.
12/19 – 01/20	**I-10 LA 415 to Essen Lane on I-10 and I-12, West and East Baton Rouge, LA.** Served as a *#3D Scanning Technician* for this project. CD&C as a sub-consultant on this project is responsible for topographic surveying the portion of I-10 in West Baton Rouge Parish beginning at the start of the project limits to a point just before the approach of the I-10 Bridge and the limits of the project along LA 415.
03/14 – 06/14	**Cleo Road Roundabout, St. Tammany Parish, LA**. Served as a *Senior Technician* on this project processing survey field data. CD&C was responsible for the topographic survey that began approximately 2400 ft. NW of intersection of I-59 and US Hwy 1090 and ended approximately 1000 ft. NW of intersection of I-59 and US Hwy 1090. The survey also included 500 ft. of Cleo Road and 175 ft. of Avenue D.
05/13 – 07/13	**LA 1 Railroad Bridge at DOW, West Baton Rouge, LA**. Served as a *Survey Crew Instrument Man* and later as a *Technician* on this project processing survey field data. The intent is to create a grade separation at the intersection of LA 1 and the R/R spur for DOW. CD&C is performing all the topographic survey for this project including utility coordination and R/R coordination and permits so that CD&C can survey the spur and parallel line.
02/13 – 06/13	**LA 447, Walker, LA**. Served as a *Survey Crew Instrument Man* and later as a *Technician* on this project processing survey field data. CD&C's responsibilities included all field work, utility coordination, review of existing survey data provided by LADOTD and all office work to produce the final product; this includes merging of supplied survey from LADOTD and survey by CD&C. CD&C also performed the tie-in of the new survey to the existing survey provided by LADOTD to produce an overall deliverable to be utilized in this design.
10/14 – 12/14	**West Prien Lake, Lake Charles, LA**. Served as *Survey Technician* on this project processing survey field data. This project was to provide topographic survey for a new route to be constructed. Topographic survey and DTM was required along the proposed alignment including all utilities and all drainage with the survey limits.
07/14 – 10/15	**I-110 North St. to Plank Road, Baton Rouge, LA.** Served as the firm's *3D Scanning Tech* on this project by working with the scan crew in the field, post processing the scans, and extracting necessary topographic data from them thru TopoDot to put into InRoads.

Firm employed by	CD&C INCORPORATED		
Name	Trent Norris	Years of relevant experience with this employer	8
Title	Senior Technician	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		N/A	
Active registration number / state / expiration date		NSPS Certified Survey Technician, Level I Boundary Certificate No.: 0418-5963 ATSSA Traffic Control Supervisor, Technician & Flagger / Exp. 2025	
Year registered	N/A	Discipline	N/A
Contract role(s) / brief description of responsibilities.		Survey Technician	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Norris serves as the firm's 3D Scanning Technician who aides in field data collection as well as process all 3D scan data in the office and assists in any other processing to complete the submittal.
01/18 – 01/20	**LA 415 to Essen Lane on I-10 and I-12, West and East Baton Rouge, LA.** Served as the *#3D Scanning Technician* for this project. CD&C as a sub-consultant on this project is responsible for topographic surveying the portion of I-10 in West Baton Rouge Parish beginning at the start of the project limits to a point just before the approach of the I-10 Bridge and the limits of the project along LA 415.
07/17 – 12/18	**LA 30 Roundabout at Tanger I-10, Ascension Parish, LA.** Served as the firm's *3D Scanning Tech* on this project by working with the scan crew in the field, post processing the scans, and extracting all of the necessary topographic data from them thru TopoDot to put into InRoads.
04/17 – 07/17	**LA 58 Petit Caillou Bridge Rehabilitation (Sarah Bridge), Terrebonne Parish, LA.** Served as the firm's *3D Scanning Tech* on this project by working with the scan crew in the field, post processing the scans, and extracting all of the necessary topographic data from them thru TopoDot to put into InRoads.
08/16 – 01/18	**H.011235 I-49 Verot School Road, Lafayette, LA.** Served as the firm's *3D Scanning Tech* on this project by working with the scan crew in the field, post processing the scans, and extracting all of the necessary topographic data from them thru TopoDot to put into InRoads.
10/16 – 10/16	**LA 443 Emergency Bridge Replacement, Tangipahoa Parish, LA.** Served as the firm's *3D Scanning Tech* on this project by working with the scan crew in the field, post processing the scans, and extracting all of the necessary topographic data from them thru TopoDot to put into InRoads.
10/15 – 12/18	**I-10 TX State Line-E of Coone Gully, Calcasieu Parish, LA.** Served as the firm's *3D Scanning Tech* on this project by working with the scan crew in the field, post processing the scans, and extracting all of the necessary topographic data from them thru TopoDot to put into InRoads.
01/16 – 07/16	**US 190 Superstreet, St. Tammany Parish, LA.** Served as the firm's *3D Scanning Tech* on this project by working with the scan crew in the field, post processing the scans, and extracting all of the necessary topographic data from them thru TopoDot to put into InRoads.

Firm employed by	FENSTERMAKER C. H. Fenstermaker & Associates, L.L.C.		
Name	Travis Bodin, MBA, PLS, PMP	Years of relevant experience with this employer	18
Title	Vice President, Survey	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization		BS / 2004 / Industrial Technology, University of Louisiana at Lafayette MBA / 2021 / University of Louisiana at Lafayette	
Active registration number / state / expiration date		PLS.0005067 / LA / Exp. 03/2024 ATSSA TCT / TCS / Flagger	
Year registered	2011	Discipline	Professional Land Surveyor
Contract role(s) / brief description of responsibilities.		Surveying/Side Scan Sonar	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Bodin serves as Vice President of Survey at Fenstermaker and has over 18 years of surveying, management, and coordination experience. He is responsible for directing and overseeing the daily activities within the Fenstermaker Survey Division which consist of the Houston and Lafayette Offices and over 35 survey crews across multiple states. He has served as the Lead Professional Land Surveyor for projects across Louisiana. His responsibilities have included the management of surveying/ROW services, utility relocation coordination, coordinating with parish, state, and federal agencies and sub-consultants, cost estimating, scoping, scheduling, and planning, resource management, and construction management services. Mr. Bodin has performed and participated in multi-million-dollar projects consisting of large scale topographic and bathymetric surveys, development of high accuracy GPS networks, landowner notification and documentation, the development of DTM, infrastructure documentation, GIS integration, process and procedure development. During his tenure at Fenstermaker Mr. Bodin has conducted management duties for both field and office activities on survey and engineering projects. Software & Training: With his wide range of managerial and technical experiences, Mr. Bodin was able to obtain his Project Management Professional (PMP) Certification which is acknowledged by agencies around the world as the leading certification for project managers. Mr. Bodin is experienced in the use of the newest versions of MicroStation, AutoCAD, and Trimble Business Center, Office 365, and Primavera 6.
07/20 – 01/21	**Port of Lake Charles, Post Hurricane Laura & Delta Survey.** *Project Principal/Professional in Charge*. Responsible for overall project management and surveyor or record. Fenstermaker performed a side scan sonar and a bathymetric survey to determine existing water bottom depths and to show any debris or hazards to navigation after the Hurricane Laura and Delta Events.
04/21 – 07/21	**LSU University Lakes Project, East Baton Rouge Parish, LA.** *Survey Principal*. The University Lakes Project is rehabilitating the 6 lakes surrounding LSU's campus, including: City Park Lake, Erie Lake, College Lake, Campus Lake, University Lake, and Crest Lake. Fenstermaker was selected to conduct the bathymetric and stump identification surveys using remote sensing technology and manned survey crews.
04/20 – Ongoing	**LADOTD, Louisiana Watershed Initiative Region 4, De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes, LA**. *Lead Surveyor*. Mr. Bodin is serving as the Lead Surveyor for this unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. Mr. Bodin's responsible for all aspects of surveying, data collection, and management to successfully complete an interactive, usable, and manageable

	hydraulic and hydrologic Region 4. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected, and will lead decisions regarding land use, policy, and infrastructure must now be coordinated, made, and implemented at the watershed level if flood risk is to be effectively managed.
08/06 – 03/08	New Orleans District USACE, Hero Canal Levee, East of Harvey Canal at the Mississippi River (Orleans & Jefferson Parishes, LA). *Survey Technician.* This project provides improved hurricane protection for the communities of Belle Chase and Gretna. The scope of the project includes repairs and upgrades to the Hero Canal 1st lift by increasing the grade elevation approximately 1.5 feet. Mr. Bodin was part of the survey team to set four permanent benchmarks were placed along the land side of the levee right-of-way. The hydrographic survey performed at Hero Canal was performed at standards that meet or exceed the U.S. Army Corps of Engineers minimum accuracy standards, quality control, and quality assurance requirements for Navigation and Dredging support surveys for a soft bottom material classification.
10/13 – 01/14	LADOTD, S.P. No. H.011014 LA 3002: U-Turn, Livingston Parish, LA. *Project Manager.* Fenstermaker was responsible for the improvements made for a J-Turn between North Range Rd and South Range Rd (LA 3002). Mr. Bodin was responsible for preparing ROW Maps in accordance with DOTD requirements. Mr. Bodin coordinated the Fenstermaker survey crew to perform topographical survey and utility relocation. Mr. Bodin also acted as quality control on title research and ROW maps and processed the survey data.
02/20 – 12/20	CPRA, East Delacroix Marsh Creation and Terracing (BS-37) Project, Breton Sound, St. Bernard Parish, LA. *Survey Manager.* This CWPPRA funded project aims to create and nourish 406 acres of marsh and construct approximately 12,950 linear feet of terraces. If constructed, this project would help to protect the community of Delacroix, Louisiana from storm surge. Fenstermaker was tasked by CPRA to perform topographic, bathymetric, and hydrographic surveys of the access and pipeline corridors, marsh creation, terracing and borrow areas. Fenstermaker's scope also includes a geophysical survey and archeological survey of the borrow area.
08/17 – 12/20	CPRA, Queen Bess Island Restoration (BA-202), Barataria Bay, Jefferson & Plaquemines Parishes, LA. *Survey Manager*. Fenstermaker performed project management, data collection, and engineering and design activities necessary to complete the permitting process and provide construction plans and specifications. This multi-disciplinary project recreated multiple types of bird habitats on a 37-acre island in lower Barataria Bay using dredged material from the Mississippi River. Fenstermaker provided: project initiation and planning; compilation, review, and analysis of existing data; data collection, including but not limited to topographic, bathymetric, and magnetometer surveys, geotechnical investigations, environmental and cultural resource investigations, numerical/computational modeling, water quality analyses, permit development, land rights support, engineering, and design, bid document development, bid phase support, and technical assistance. Fenstermaker created a new benchmark for the island, performed all surveys reference from that benchmark, and determined relationship for design using NAVD88 and local tidal datums. Mr. Bodin helped ensure an early and below budget delivery of this important project.
01/13 – 03/13	LADOTD, I-20 Drainage Canal Bridge Survey. *Survey Technician*. As a subconsultant to Huval and Assoc., Inc, Fenstermaker's responsibilities were surveying the existing extents of the project area and locating existing drainage, road, and utilities in the area for creation of a CAD file, Digital Terrain Model (DTM), and Microstation deliverables.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.			
Name	Justin Bordelon, PLS		Years of relevant experience with this employer	16
Title	Manager, Surveyor		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization			BS / 2009 / Business administration, University of Louisiana at Lafayette	
Active registration number / state / expiration date			PLS.0005271 / LA / Exp. 12/2022 ATSSA TCT / TCS / Flagger	
Year registered	2021	Discipline	Professional Land Surveyor	
Contract role(s) / brief description of responsibilities.			Surveying/Underwater Acoustic Inspection	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Bordelon is the Advanced Technology Manger in Fenstermaker's Advanced Technology Group. He started performing underwater acoustic investigations and hydrographic surveys at Fenstermaker in 2006. While working at Fenstermaker, Mr. Bordelon attended the University of Louisiana at Lafayette and earned a degree in Business Administration in 2009. As the Advanced Technology Group grew, Mr. Bordelon became the underwater acoustic investigation manager and worked on many projects including an inspection of over 100 bridges for the Louisiana Department of Transportation and Development. In 2015, he became a Survey Crew Manager and managed crews in Lafayette, Shreveport, and Midland, TX.
11/11 – 11/13	**DOTD P.O. No. 005365.5: Underwater Acoustic Imaging for Bridge Inspection Statewide, LA.** *Field Team Manager.* Fenstermaker was contracted to provide Underwater Acoustic Imaging services for the underwater bridge inspection of pier systems for 72 state-maintained bridges. The project consisted of an underwater acoustic Inspection and evaluation of the submerged components of the piers utilizing a multi-axis, steered beam imaging and profiling remote sensing system with all acoustic data correlated to a RTK GPS positioning system. The purpose of the inspection was to identify any major damage or deterioration of the pier structures along with a detailed localized inspection of any observed anomalies using both the acoustic imaging system; and to identify any localized scour impact or erosion of the surrounding water bottom. Served as Field Team Manager responsible for the management of all field resources and the quality and accuracy of all field data collection activities.
11/20 – 05/21	**Southeast Louisiana Flood Protection Authority. New Orleans Outfall Canals Survey, Orleans Parish, LA.** *Project Manager* for this award-winning project to map out the New Orleans Outfall Canals utilizing Multibeam and LiDAR technology for erosion detection and monitoring. Tasks included coordination with the Flood Protection Authority, coordinating and scheduling field crews, overseeing office data processing and deliverable generation.
03/10 – 04/10	**Almonaster Street Bridge Damage Inspection, New Orleans, LA.** *Survey Technician.* Fenstermaker was contracted to perform an Underwater Acoustic Imaging investigation of the Almonaster Avenue Bridge and the fendering system for the bridge. This entailed scanning the bridge abutments as well as the fendering system and Dolphin Cells as well as documenting the disposition of debris on the water bottom. Served as survey technician, collecting images of the fender system with MS 1000 in the field and creating the Autocad mosaics.
01/16 – 02/16	**Wax Lake Outlet Bulkhead Acoustic Survey (St. Mary Parish, LA).** *Underwater Acoustic Imaging Lead Field Technician.* Fenstermaker was contracted by Energy Transfer to perform an Acoustic Multi-Beam Profiling and Imaging Investigation of a 1,000' reach of the Wax Lake Outlet Channel centered on the 36" Trunkline overhead pipeline crossing, with investigative emphasis on the disposition of the failed bulkhead on the west bank of the channel.

03/11 – 04/11	Houma Navigation Canal Bridge Rehabilitation, Terrebonne Parish, LA. *Lead Survey Technician.* Fenstermaker provided an Underwater Acoustic Investigation of the fendering systems and rotating pier of the Houma Navigation Canal Bridge to document deficiencies in the fendering systems for rehabilitation of the bridge.
04/14 – 05/14	GENEX / Federal Highway Administration (FHWA) – Underwater Bridge Inspection Using Acoustic Imaging). *Lead Field Technician* for the Underwater Acoustic Imaging visualization of the Pier W2 and W6 of the West Span of the Oakland Bay Bridge and of both support piers of the 3rd Street Bridge for GENEX / FHWA / CalTRans to serve as the NBIS Underwater Bridge Inspection for these bridge sections.
06/10 – 06/10	Sunshine Bridge Underwater Acoustic Survey, St. James Parish, LA: Fenstermaker performed an Underwater Acoustic Imaging Investigation of the pier protection systems on Piers 3, 4, and 5 of the Sunshine Bridge near Donaldsonville, Louisiana.
01/11 – 02/12	Acoustic Survey, Underwater and Structural Inspection of State Maintained Dams Statewide (Louisiana). *Field Team Crew Leader and Lead Acoustic Technician.* Fenstermaker performed dam system evaluations of fourteen (14) state-maintained dam systems issued through separate Task Orders including Bundicks Creek Dam, Lower Anacoco Dam, Vernon Lake Dam, Grand Reservoir Dam, Ivan Lake Dam, Iatt Lake Dam, Bayou Cocodrie Dam, Chicot Lake Dam, Lake Claiborne Dam, Black Bayou Dam, Nantachie Lake Dam, Smithport Lake Dam, Kepler Creek Dam, and Turkey Creek Dam.
04/14 – 05/14	Work Authorization NO.IE-UWI 2014-01 lEI Job No. 13073MSOO.OO: Perform Acoustic Imaging on Bridges 11800 AND 11801,1-10 over Pascagoula River, BENTS W1L-W3L, 17L and Dolphin System on Bridge 11800 AND BENTS W1R-W3R, 17R, 18R and Dolphin System on BRIDGE 11801. *Underwater Acoustic Imaging Lead Field Technician and Survey Technician.* Provide post processed images of substructures and channel bottom within 150 feet of piers: Fenstermaker was contracted to provide Underwater Acoustic Imaging visualization of the Piers, Bents, Dolphin pier protection systems, water bottom debris and adjacent water bottom in conjunction with the cyclical NBIS Underwater Bridge Inspection being conducted by Prime Consultant Infrastructure Engineers, Inc.
12/12 – 07/13	Horace Wilkenson Bridge Mississippi River Bridge Inspection, West Baton Rouge Parish, LA: Fenstermaker provided an Underwater Acoustic Imaging inspection of a damaged bridge pier fender system, for LADOTD after a ship collided with the bridge, to assist in damage assessment and debris disposition mapping. Mr. Bordelon served as the Field Team Crew Leader and lead acoustic technician on this project, managing the field crew, conducting site visits, processed data, provided QA/QC of data, and prepared the report on findings.
05/09 – 05/09	Mississippi River Bridge (1-20) Underwater Acoustic Imaging, Madison Parish to Warrant County, MS*: Lead Survey Technician.* Fenstermaker was contracted by DOTD to provide Underwater Acoustic Imaging visualization of the E-1 and E-2 Bridge piers after the piers were struck by a wayward barge which then sunk lodged against the north nose of pier E-1. The project consists of an Underwater Acoustic Investigation of the piers with specific emphasis on any disturbance or damage that could have resulted from the barge collision. The investigation encompasses the bridge piers and support caissons as well as the instrumentation caissons.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Joe Broussard	Years of relevant experience with this employer	7
Title	Survey Technician	Years of relevant experience with other employer(s)	11
Degree(s) / Years / Specialization		BA / 2003 / Creative Writing	
Active registration number / state / expiration date		2016 / Remote Pilot Certification, Small Unmanned Aircraft System, #3909218	
Year registered		Discipline	
Contract role(s) / brief description of responsibilities.		Survey Technician	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Broussard is a Senior Survey Technician with the Advanced Technologies Group and serves as our lead technician in data collection activities for all underwater acoustic and bathymetric survey operations. He has significant experience in operating underwater acoustic imaging sonar/profilers, side scan sonar and multi-beam systems, single beam echosounders, pipeline location devices, and other conventional surveying systems. While he has performed as a technician on several laser scanning surveys, his specialty and talent lie with the water-based survey operations utilizing the equipment mentioned above.
07/15 – 04/16	**TXDOT, Aransas Pass Ferry Landings Multi-Beam Survey, Aransas Pass, Texas,** *Survey Party Chief:* Fenstermaker conducted a multi-beam survey of the north and south ferry landings for the TXDOT. Data was collected using an Edgetech 6205 Multi-Beam System combining bathymetry and side scan sonar technology. Also used was an Applanix POS M/V System for accurate position, heading, attitude, heave, and velocity data correlation with the multi-beam system. Mr. Broussard served as our lead technician responsible for all data collection activities and quality of data.
11/20 – 11/21	**Southeast La Flood Protection Authority – East. Outfall Canals Topographic & Bathymetric Surveys.** *Survey Technician.* Mr. Broussard assisted the on-site crew, prepared for and created the flight plan of the UAV drone flight, collected LiDAR and bathymetric and side scan data, processed collected data, and assisted with the preparation of deliverables. This was a multi-award-winning project that Fenstermaker conducted to combine topographic and multibeam bathymetric survey data for the 17th, London, and Orleans Outfaal Canals to detect and monitor erosion.
01/16 – 02/16	**Wax Lake Outlet Bulkhead Acoustic Survey, St. Mary Parish, LA.** *Survey Party Chief*. Fenstermaker was contracted by Energy Transfer to perform an Acoustic Multi-Beam Profiling and Imaging Investigation of a 1,000' reach of the Wax Lake Outlet Channel centered on the 36" Trunkline overhead pipeline crossing, with investigative emphasis on the disposition of the failed bulkhead on the west bank of the channel. Mr. Broussard served as lead acoustic technician on this project responsible for all data collection activities.
02/20 – 11/20	**Delacroix Marsh Creation Project (BS-0037) (St. Bernard Parish, LA).** *Survey Technician.* Fenstermaker performed bathymetric, topographic, magnetometer, side-scan sonar, and sub-bottom profile surveys within the proposed borrow and fill areas of Delacroix Island. Mr. Broussard was involved in preplanning, crew/field coordination, and all bathymetric, side scan, and magnetometer data processing, along with the Coastal Protection and Restoration Authority's (CPRA) Louisiana SAnd Resources Database (LASARD) deliverables.

12/15 – 02/16	Cross Lake Dam Spillway and Water Intake Structure Multi-Beam Survey and Underwater Acoustic Imaging Investigation (Shreveport, LA). *Survey Technician.* Fenstermaker was contracted by Denmon Engineering Co., Inc. to perform an Underwater Acoustic Imaging (UAI) Investigation of the concrete spillway and water intake structures at Cross Lake Dam in Shreveport, LA and a multi-beam survey of the dam embankment and water intake channel for the purpose of evaluating rehabilitation needs. Mr. Broussard served as lead acoustic technician on this project responsible for all data collection activities.
07/20 – 07/21	Maurepas Freshwater Diversion and West Lake Shore Pontchartrain Reaches 16-19 (St. John the Baptist Parish, LA) The Maurepas Diversion is a proposed 2,000 cubic foot per second (cfs) freshwater diversion from the Mississippi River into the Maurepas Swamp. The West Shore Lake Pontchartrain (WSLP) project will provide hurricane and storm-damage risk reduction in St. Charles and St. John the Baptist Parishes. Fenstermaker was tasked to collect survey data based on a specific survey plan developed to provide sufficient information for engineering design. Survey data collected include topographic, hydrographic (bathymetric and magnetometer), and geodetic.Real-time Kinematic (RTK) GPS technology, along with single and multi-beam bathymetric data collection (hydrographic), and aerial LiDAR surveys were all implemented to provide the survey data necessary for planning of the next phases of this project. Mr. Broussard coordinated field crews, drafted reports, and reviewed and processed data.
01/16 – 02/16	McComb Spillway Railroad Bridge Erosion Monitoring Project (St. Charles Parish, LA): Fenstermaker was contracted by Canadian National Railway Company to provide onsite support and assistance through specialized high definition underwater acoustic imaging for monitoring, via onsite display of sonar imagery, the disposition of the water bottom adjacent to and around the pile foundation trestle supports of the Canadian Nation Railway rail line bridge over the Bonnet Carrie Floodway north of the Bonnet Carrie Spillway in Saint Charles Parish, LA. Mr. Broussard assisted with lead acoustic technician responsibilities on this project in charge of all data collection activities and client interaction with sonar imaging and viewing.
10/15 – 12/15	Volkert, Inc. – Winston County Underwater Acoustic Imaging Bridge Inspections: Fenstermaker performed Underwater Acoustic Imaging Inspections of the underwater portion of the bridge pier systems for four bridges in the Lewis Smith Lake for Winston County, Alabama, in conjunction with Volkert, Inc. Mr. Broussard served as the lead acoustic technician on a portion of this project responsible for all data collection activities and quality of work. The acoustic imagery and profiling was performed using the MS1000 Kongsberg Mesotech remote-sensing imaging sonar/profiler. Upon completion of the survey, Mr. Broussard also assisted with processing the acoustic imagery and generating the acoustic imaging plats for submittal to the client.
07/20 – 01/21	Post Hurricane Laura & Delta Survey – Port of Lake Charles (Calcasieu Parish, LA). Fenstermaker performed a side scan sonar and a bathymetric survey to determine existing water bottom depths and to show any debris or hazards to navigation after the Hurricane Laura and Delta Events. As the project's crew chief, Mr. Broussard assisted in post processing of bathymetric and side scan data and executed the last bathymetric survey post Hurricane Delta.
10/21 – 11/21	Boat Terminal #1 Bathymetric Surveys, Calcasieu Parish, LA. *Survey Party Chief.* Fenstermaker was contracted by Port of Lake Charles to perform bathymetric surveys for the Boat Terminal 1. Mr. Broussard served as Party Chief performing these surveys.

Firm employed by	FENSTERMAKER C. H. Fenstermaker & Associates, L.L.C.		
Name	Brett Dufour	Years of relevant experience with this employer	16
Title	Survey Technician	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization		AS / 2004 / Civil, Surveying & Mapping Technology	
Active registration number / state / expiration date		Survey Technician Certification Level 1 #804-2015 ATSSA Traffic Control Supervisor ATSSA Traffic Control Technician	
Year registered	N/A	Discipline	N/A
Contract role(s) / brief description of responsibilities.		Survey Technician	

Experience dates	Experience and qualifications relevant to the proposed contract
	Brett Dufour has been employed by Fenstermaker for over sixteen years and currently serves as a Senior Surv360 Technician. He is responsible for processing RTK field data, preparing plat information, and assembling pre-survey data for all services provided by the Advanced Technologies Division. Mr. Dufour is proficient in all data processing aspects of high-definition laser scan survey, dimensional control surveys, topographic surveys, hydrographic surveys, route surveys, subsidence surveys, geodetic control surveys, hazard surveys, and boundary surveys. He is familiar with traditional survey methods as well as the latest, most current technologies, including Underwater Acoustic Imaging (UAI) and High-Definition Surveying (HDS) and Dimensional Control (DC).
11/11 – 11/13	**LADOTD SPN. 005365.5: Underwater Acoustic Imaging for Bridge Inspection Statewide, LA.** *Survey Technician.* Fenstermaker was contracted to provide and is currently providing UAI services for the underwater bridge inspection of pier systems for 72 state-maintained bridges. The project scope consists of an underwater acoustic Inspection and evaluation of the submerged components of the piers utilizing a multi-axis, steered beam imaging and profiling remote sensing system with all acoustic data correlated to a RTK GPS positioning system. The purpose of the inspection and evaluation is to identify and locate any major damage or deterioration of the pier structures along with a detailed localized inspection of any observed anomalies using both the acoustic imaging system and dive inspection; and to identify any localized scour impact or erosion of the surrounding water bottom. The data is then processed and mosaics of the acoustic imagery are generated and included in a report that also documents the findings and recommendations resulting from the UAI and dive inspections.
01/22 – 03/22	**Southeast Louisiana Flood Protection Authority. New Orleans Outfall Canals Survey, Orleans Parish, LA.** *Survey Technician.* Mr. Dufour processed collected data, created surface models, wall point clouds, bare earth models for this award-winning project to map out the New Orleans Outfall Canals utilizing Multibeam and LiDAR technology for erosion detection and monitoring.
08/17 – 09/17	**Port of Lake Charles. Bathymetric Survey Bulk Terminal 1, Calcasieu Parish, LA.** *Survey Technician*. Fenstermaker performed a bathymetric survey of Bulk Terminal 1. Mr. Dufour served as a survey technician creating the profile of the beneficial use of dredged material area 1 (BUDM 1) and added additional survey data to the surfaces, updated surfaces, and recomputed the cross-sections.

05/07 – 11/07	Port of New Orleans. Poland Street Under Wharf Acoustic Survey. New Orleans, LA. *Survey Technician*. Fenstermaker performed an under wharf acoustic survey to provide bathymetric contours and image visualization of the under-wharf conditions at the Poland Street wharf. The underwater imaging utilized both vessel mounted and tripod deployments with a multiple number of setups and rotating sensor deployments. This method is necessary to achieve more effective coverage and varying perspectives of the area. One additional scan was included at an area of possible scour. Profiling was performed at 20' intervals down the wharf face. The deliverables were explained in a presentation to the New Orleans Port Authority, the USACE, New Orleans District, and the New Orleans Levee Board. Assisted the Underwater Imaging team by importing images into AutoCAD, creating plats, and exporting 3D polylines from Cyclone.
05/07 – 11/07	Port of New Orleans: Poland Street Under Wharf Acoustic Survey, Orleans Parish, LA. *Survey Technician.* Fenstermaker performed an under wharf acoustic survey to provide bathymetric contours and image visualization of the under-wharf conditions at the Poland Street wharf. The underwater imaging utilized both vessel mounted and tripod deployments with a multiple number of setups and rotating sensor deployments. This method is necessary to achieve more effective coverage and varying perspectives of the area. One additional scan was included at an area of possible scour. Profiling was performed at twenty-foot intervals down the wharf face. The deliverables were explained in a presentation to the New Orleans Port Authority, the USACE, New Orleans District, and the New Orleans Levee Board. Assisted the Underwater Imaging team by importing images into AutoCAD, creating plats, and exporting 3D polylines from Cyclone.
11/06 – 12/06	Port Aggregates, Inc. Underwater Imaging Survey of Calcasieu ship channel & adjacent dock and pier terminals in the vicinity of Port Aggregates and the BT-4 terminal, Calcasieu Parish, LA. *Survey Technician*. An Underwater Acoustic Imaging investigation of the submerged area around the BT-4 terminal and the adjacent reach of the Calcasieu Ship Channel was performed to establish the spatial relationship and physical conditions at the BT-4 Terminal. Simulations of various ship berthings were then generated to establish the disposition of the various bulk cargo vessels relative to adjacent terminals and the Ship Channel when berthed at the BT-4 terminal.

Firm employed by	APS Engineering and Testing		Meet MPR No. 9
Name	Sergio Aviles, PE	Years of relevant experience with this employer	9
Title	President	Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization		BS / 2001 / Civil Engineering - Geotechnical	
Active registration number / state / expiration date		0033571/ LA / Exp 03/2024	
Year registered	2007	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Geotechnical	

Experience dates	Experience and qualifications relevant to the proposed contract, i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
	Mr. Aviles has more than 10 years' experience in the geotechnical and civil engineering field. Mr. Aviles also has project experience throughout Louisiana with the Pavement & Geotechnical Section of the Louisiana Department of Transportation and Development (LADOTD where his duties included pile foundation design and construction inspection of piles, slope stability design, embankment settlement calculations, design and construction inspection of drilled shafts, MSE wall design, sheet pile design, and testing services that incorporated, PDA, WEAP, and CAPWAP analysis of piles. Prior to signing on with the Pavement & Geotechnical Section of LADOTD, he participated in the LADOTD Rotational Engineer Intern program developed by the Louisiana Transportation Research Center (LTRC). During the program, he learned most of the duties and responsibilities of LADOTD main design and construction sections (Bridge Design, Road Design, Hydraulic Design, Head Quarter construction, and district construction). Mr. Aviles is skilled in levee design, T-wall design, deep soil mixing design and technical site visits.
2001 – 2005	**OnSystem Projects, 015-04-0037 LA524-LA123 Route US165, 015-05-0035 LaSalle, 015-07-0044 (Route 165 Cadwell, 276-03-0016 Tangipahoa River Bridge, 3132 Innerloop 427-01-0029, 362-01-0009 Rat Bois, 452-01-0039 I-55 CrossOvers, 742-07- 0098 Susek Drive, Bayou Perrie and Sand Beach Bayou 103-01-0025, Broadway Ave.700-40-0127, Cameron Route La. 27 193-02-0042, Causeway Boulevard interchange Route I-10 450-15-0098,Clayton-Greenville 026-03-0025, Crescent City Connection 283-08-0143(46), Cross Bayou Bridge 090-01-0020, Flannery at Florida 742-17-0008, LADOTD, LA.** *Staff Geotechnical Engineer.* Responsible for the Pavement and Geotechnical Section for the following projects: Embank Design, Pile Design, Drilled Shaft design, MSE wall design, and construction supervision. Designed or assisted on the design while at working at LADOTD. These projects include pile design, slope stability, settlement analysis, and construction services (PDA, CAPWAP, and WEAP).
07/14 – 08/14	**US 90 Elevated Portion for the Future I-49 Corridor.** *Project Manager.* Responsible for Geotechnical investigations and analysis as assigned for roads and bridges design. APS performed all the preliminary drilling, testing, and CPT for US 90 and Highway 318 Intersection. A total of 46 boring and 11 CPT along with all the testing required by LADOTD. to the Geotechnical investigations and analysis as assigned for roads and bridges design.
09/19 – Ongoing	**Rural Bridge Replacement Initiative, LADOTD, Nine (9) State Projects and 24 structures in Districts 04, 05, 08 and 58.** *Project Manager*. A P S was a Geotechnical Subconsultant through prime consultant T. Baker smith. Tasked A P S with drilling and the sampling of 52 borings to 120 feet deep. Laboratory tests, Atterberg limits, unconsolidated drained, triaxial test, moisture content, along with the engineering design of the substructure. Project Manager to the Geotechnical Investigations.

09/19 – 06/20	I-10 Widening LA 415 to Essen LN, LADOTD, Baton Rouge, LA. *Project Manager*. Tasked APS thru Department of Transportation and Development (DOTD) geotechnical retainer to drill and sample a total of 52 deep borings starting at the Washington Exit and ending at the LSU lakes. Along with this drilling and sampling APS also tested for strength and engineering characteristics of the soils with. A total of eight over the water borings and 44 land borings with approximate 1000 Triaxial Compression, Unconsolidated Drained or Undrained (UU) and Atterberg Limits. Project Manager to the Geotechnical Investigations.
12/19 – 03/20	US 90 Railroad Overpass SE of LA 85, LADOTD, New Iberia LA. *Project Manager*. Selected APS with the winning team for the Geotechnical Investigation and Design for the proposed new overpass. A total of six deep borings were drilled and tested for Geotechnical recommendation. Project Manager for the project design team.
03/19 – 05/19	US 190 over Bogue Falaya River, LADOTD, Covington, LA. *Project Manager*. Selected APS with the winning team for the Geotechnical Investigation and Design of the proposed new bridge. A total of 19 deep borings were drilled and tested for the foundation recommendation. Project Manager for the project design team.
11/17 – 02/18	Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge LA 67 and LA 19, LADOTD, East Baton Rouge, LA. *Project Manager.* Tasked APS thru DOTD geotechnical retainer to drill and sample a total of 12 deep borings for the new and replacement bridges at Highway 19, 67, and 964. APS tested for strength and engineering characteristics of the soils. Project Manager to the Geotechnical Investigations.

Firm employed by	APS Engineering and Testing		Meet MPR No. 9
Name	Sairam Eddanapudi, PE	Years of relevant experience with this employer	10
Title	Chief Engineer	Years of relevant experience with other employer(s)	8
Degree(s) / Years / Specialization		ME / 2002/ Civil Engineering / Lamar University BE / 1999 / Civil Engineering / Sri Venkateswara University	
Active registration number / state / expiration date		PE.0035129/ LA / Exp. 03/2024	
Year registered	2009	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Geotechnical	

Experience dates	Experience and qualifications relevant to the proposed contract, i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
	Mr. Eddanapudi is a Project Engineer with more than 10 years' experience in the geotechnical and civil engineering field. His professional experience includes six years of design and two years of field experience. The design experience consists of the design of levees and T-walls as well as the design of shallow and deep foundations. His field experience includes QC inspection of auger cast piles, drilled shafts, soils and concrete. Mr. Eddanapudi has experience with the following software: Slope/w (2004 and 2007 versions) for slope stability analyses, Seep/w for seepage analysis, Driven 1.2 (for driven piles), Microstation V8, CWALSHT and FS004 for slope stability analyses, Swell Potential (for expansive soils), Drilled Shaft Design software, Auger cast pile design Analysis, AASHTO pavement, analysis, Differential Settlement Analysis.
03/06 – 09/06	**Audubon Cable Span Bridge, St. Francisville, LA.** Pr*oject Engineer.* The John James Audubon Bridge project was a new Mississippi River crossing between Pointe Coupee and West Feliciana parishes in south central Louisiana. The bridge was proposed to be the longest cable-stayed bridge in North America, will replace an existing ferry between the communities of New Roads and St. Francisville. The bridge served as the only bridge structure on the Mississippi River between Natchez, Mississippi and Baton Rouge, Louisiana (approximately 90 river miles). Was part of the field and design Geotechnical investigation of this project. Duties were as follow: • Layout Boring locations for drilling crews. • Logs soil data for drilling crews. • Helped manage the biggest field investigation for PSI, Inc. has been in charge of. Over ten drill rigs to drill over 6,000 linear feet in ten days. The Audubon Bridge project included: • A 2.44 mile four-lane elevated bridge structure with two 11-foot travel lanes in each direction with 8-foot outside shoulders and 2-foot inside shoulders • Approximately 12 miles of two-lane roadway connecting LA 1 east of Hospital Road at New Roads to US 61 south of LA 966 and St. Francisville • Four new intersections at existing LA 1, LA 10, LA 981 (River Road) and US 61 for entry to and exit from the new roadway and bridge.

09/19 – Ongoing	Rural Bridge Replacement Initiative, LADOTD, Nine (9) State Projects and 24 structures in Districts 04, 05, 08 and 58. *Project Quality Assurance (QA)*. APS was a Geotechnical Subconsultant through prime consultant T. Baker smith. Tasked APS with drilling and the sampling of 52 borings to 120 feet deep. Laboratory tests, Atterberg limits, unconsolidated drained, triaxial test, moisture content, along with the engineering design of the substructure. Project QA to the Geotechnical Design.
09/19 – Ongoing	I-10 Widening LA 415 to Essen LN, LADOTD, Baton Rouge, LA. *Project Quality Assurance*. Tasked APS thru Department of Transportation and Development (DOTD) geotechnical retainer to drill and sample a total of 52 deep borings starting at the Washington Exit and ending at the LSU lakes. Along with this drilling and sampling APS also tested for strength and engineering characteristics of the soils with. A total of eight over the water borings and 44 land borings with approximate 1000 Triaxial Compression, Unconsolidated Drained or Undrained (UU) and Atterberg Limits. Project QA to the Geotechnical Investigations.
08/16 – 10/19	I-110 Interchange Modification at Terrace Ave, LADOTD, Baton Rouge, LA. *Quality Assurance*. Tasked APS thru DOTD geotechnical retainer to drill and sample a total of six (6) deep borings for the design of the Terrace Ave exit. APS tested for strength and engineering characteristics of the soils with approximate 100 Triaxial Compression, Unconsolidated Drained Or Undrained (UU) and Atterberg Limits by APS Laboratory. QA to the Geotechnical Investigations.
03/19 – 05/19	US 190 over Bogue Falaya River, LADOTD, Covington, LA. *Senior Design Engineer*. Selected APS with the winning team for the Geotechnical Investigation and Design of the proposed new bridge. Drilled a total of 19 deep borings and tested for the foundation recommendation. Senior Design Engineer for the project design.
11/17 – 02/18	US 61 Thompson Creek Bridge Replacement, LADOTD, West Feliciana, LA. *Quality Assurance.* Tasked APS thru our DOTD geotechnical retainer to drill and sample a total of eight deep borings for the replacement bridge at US 61 over Thompson Creek. APS tested for strength and engineering characteristics of the soils. QA to the Geotechnical Investigations.
11/17 – 02/18	Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge LA 67 and LA 19, LADOTD, East Baton Rouge, LA. *Quality Assurance*. Tasked APS thru our DOTD geotechnical retainer to drill and sample a total of 12 deep borings for the new and replacement bridges at Highway 19, 67, and 964. APS tested for strength and engineering characteristics of the soils. QA to the Geotechnical Investigations.

Firm employed by	APS Engineering and Testing		
Name	Surendra Raj Pathak, MS, PE	Years of relevant experience with this employer	5
Title	Staff Engineer	Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization		MS / 2013 / Civil Engineering, Mississippi State University MS / 2007 / Civil Engineering, Norwegian University of Science and Technology BS / 1998 / Civil Engineering, Madan Mohan Malaviya University of Technology	
Active registration number / state / expiration date		PE.0043487/ LA / Exp. 09/2023	
Year registered	2019	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities.		Geotechnical	

Experience dates	Experience and qualifications relevant to the proposed contract, i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
	Mr. Pathak is a Staff Geotechnical Engineer for APS and has more than 10 years of experience in the Geotechnical and Civil engineering field. His professional experience consists of the design of roadway, bridges, levees and as well as the design of shallow and deep foundations. His field experience includes QC inspection of auger cast piles, drilled shafts, soils, and concrete. Mr. Pathak has experience with the following software: Slope/w (2004 and 2007 versions) for slope stability analyses, Seep/w for seepage analysis, Driven 1.2 (for driven piles), MicroStation V8, CWALSHT and FS004 for slope stability analyses, Swell Potential (for expansive soils), Drilled Shaft Design software, Auger cast pile design Analysis, AASHTO pavement, Slope analysis, and Differential Settlement Analysis.
09/19 – Ongoing	I-10 Widening LA 415 to Essen LN, LADOTD, Baton Rouge, LA. *Design Engineer*. Tasked APS thru Department of Transportation and Development (DOTD) geotechnical retainer to drill and sample a total of 52 deep borings starting at the Washington Exit and ending at the LSU lakes. Along with this drillingand sampling APS will also test for strength and engineering characteristics of the soils with. A total of eight (8) over the waterborings and 44 land borings with approximate 1000 Triaxial Compression, Unconsolidated Drained or Undrained (UU) and Atterberg Limits. Was the project QC to the Geotechnical Investigations.
08/16 – 10/19	I-110 Interchange Modification at Terrace Ave, LADOTD, Baton Rouge, LA. *Design Engineer*. Tasked APS thru DOTD geotechnical retainer to drill and sample a total of six (6) deep borings for the design of the Terrace Ave exit. APS tested for strength and engineering characteristics of the soils with approximate 100 Triaxial Compression, Unconsolidated Drained or Undrained (UU)and Atterberg Limits by APS Laboratory. Was QC to the Geotechnical Investigations.
11/17 – 02/18	US 61 Thompson Creek Bridge Replacement, LADOTD, West Feliciana, LA. *Design Engineer*. Tasked APS thru DOTD geotechnical retainer to drill and sample a total of eight (8) deep borings for the replacement bridge at US 61 over Thompson Creek. APS tested for strength and engineering characteristics of the soils. Was QC to the Geotechnical Investigations.
03/19 – 05/19	US 190 over Bogue Falaya River. APS was selected with the winning team for the Geotechnical Investigation and Design of the proposed new bridge. A total of 19 deep borings were drilled and tested for the foundation recommendation. Design Engineer for the project design team.
12/19 – 03/20	Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge LA 67 and LA 19, LADOTD, East Baton Rouge, LA. *Design Engineer*. APS was selected with the winning team for the GeotechnicalInvestigation and Design for the proposed new overpass. A total of six (6) deep borings were drilled and tested for Geotechnical recommendation.

17. Firm Experience:

Firm name	ARCADIS	Past Performance Evaluation Discipline(s)*	Bridge, Road, Traffic, Env
Project name	**Chef Menteur Bridge and Approaches, Route US 90**	Firm responsibility (prime or sub?)	Prime
Project number	H.000263.2	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Orleans Parish, LA	Owner's Project Manager	Nikki Leon / Irina Sorset
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802 | P: 225 242 4514 | E: nikki.leon@la.gov (irina.sorset@la.gov)		
Services commenced by this firm (mm/yy)	08/11	Total consultant contract cost ($1,000's)	$1,118
Services completed by this firm (mm/yy)	11/14	Cost of consultant services provided by this firm ($1,000's)	$879

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

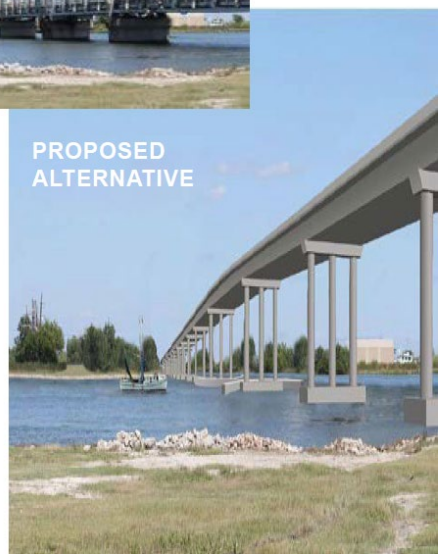
Firm's Role: Bridge and roadway design, roundabout evaluation, complete streets analysis, bridge type / lifecycle cost assessment; typical sections, bridge and road line and grade, horizontal and vertical design services, local access connections, roadway approach design, alternatives development, visual imagery, USCG navigable waterway permit assessment, preliminary construction cost estimate based on LADOTD pay items and unit cost prices.

Firm Members Involved: Akhil Chauhan, David Fulks

Relevant Services

- Geometric Design of Roadway and Bridge
- Bridge type / Lifecycle Cost Assessment
- Roadway and Bridge Typical Sections
- Local Access Connections
- Construction Cost Estimate
- LADOTD Design Guidelines and EDSM's
- LADOTD Road Design and Bridge Design Manuals
- Stakeholder and Agency Coordination

Arcadis was contracted by LADOTD to complete preliminary **design layouts to replace the existing US 90 swing- span bridge** over Chef Menteur Pass in Orleans Parish as part of an **environmental assessment**. Both movable- and fixed-span designs were considered along with three preliminary alignments. **LADOTD Design Guidelines and EDSMs** along with the **LADOTD Road Design and Bridge Design Manuals** were utilized.



Project Approach - The approach identified the schedule's critical path, including a post-Katrina vessel height study update, a remote sensing of Chef Pass to identify submerged cultural resources and to ascertain bathometric data, and **early coordination and approval of the design criteria** to adequately address the mixed-use in the vicinity of the bridge. In accordance with the **LADOTD Complete Streets Policy**, this project queried and incorporated comments from New Orleans bicycle representatives, who recognize US 90 as the only bicycle route between New Orleans and the state line. Arcadis followed good **access management principles to address local mobility needs**. Private access connections (driveways) were minimized by providing interconnectivity and shared driveways among residential, commercial, and park properties. With nearly **10 stakeholder and agency meetings over the first two months** of the contract, the team was aggressive with **early outreach and continuous coordination with both agencies and the public**.

Key Challenges - The challenges were to minimize impacts to abutting Venetian Isles subdivision, while also avoiding or minimizing effects to the Fort Macomb structure and state parkland, terrestrial and submerged archaeological sites, and the Bayou Sauvage National Wildlife Refuge. From an engineering perspective, the project site posed notable challenges. The Chef Pass experiences swift tidal flow and has resulted in substantial scour and higher potential for vessel collisions.

Firm name	ARCADIS	Past Performance Evaluation Discipline(s)*	Survey, Traffic, Road, Bridge, Hydraulics, Env, Geotech
Project name	**Bridge Bundle #2 Contract #9**	Firm responsibility (prime or sub?)	Prime
Project number	PI #0013599/0013610/0013719/0013745	Owner's name	Georgia DOT
Project location	McIntosh/Wayne/Long/Glynn Counties, GA	Owner's Project Manager	Kassandra Boswell
Owner's address, phone, email	22 Barnard St, Ste 240, Savannah, GA 31401| P: 678 956 5373| E: kboswell@dot.ga.gov		
Services commenced by this firm (mm/yy)	08/2017	Total consultant contract cost ($1,000's)	$11,333
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$6,600

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Relevant Services

- Design of Bridge Replacements
- Roadway Design
- Task-Order based procurement

Firm's Role: Project Management, Concept Development, Roadway and Bridge Design, Constructability Reviews, Hydraulic and Stormwater Design, Topographic Survey, Environmental Studies/Document, Public/Stakeholder Involvement, Preliminary and Final Construction Plans Development, Construction Cost Estimate, ROW Plan Development.

Firm Members Involved: Kristen Kasmire

GDOT used task-order based delivery to replace four bridges. Arcadis was selected to provide full design services, from concept through construction. All projects were developed simultaneously, with minimal staggering of schedules. The primary focus of each project was the bridge replacement. Roadway, bridge, and hydraulic teams worked closely to provide a new structure that met all design requirements with minimal change to the approach roadway.

SR 25/US 17 over Darien River, McIntosh County: Replacement of an existing bridge providing access to the City of Darien from the south. The proposed bridge is 1450-feet long and consists of PSC beams on concrete bents with drilled shaft and concrete pile footings. The Darien River is navigable and provides habitat for several threatened and endangered species. The City of Darien has several historic and archaeological resources in the vicinity of the bridge, necessitating close coordination with the environmental team to minimize impacts. Because this bridge provides important connectivity to the City, several alternatives were evaluated to maintain traffic during construction.

SR 25 Spur East at Mackay River, Glynn County: Replacement of an existing bridge providing the only roadway access to St. Simons Island. The proposed 2880-foot long bridge will be constructed on an offset alignment to maintain vehicular access during construction, especially important as this is a hurricane evacuation route. The new bridge consists of PSC beams on concrete piers. The Mackay River is navigable and provides habitat for several threatened and endangered species. Close coordination with our environmental team was needed on pier placement and construction techniques.

SR 38/US 84 over Little McMillan Creek, Wayne County: Replacement of existing twin bridges with new, longer bridges to provide an improved hydraulic opening and full-width shoulders.

SR 38/US 84 over Doctors Creek, Long County: Replacement of one of two existing parallel bridges with a new, longer bridge to provide an improved hydraulic opening and full-width shoulders.

Firm name	TranSystems	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Historic Bridge of Lions Bascule Bridge**	Firm responsibility (prime or sub?)	Subconsultant
Project number	N/A	Owner's name	FDOT District 2
Project location	East Baton Rouge Parish, LA	Owner's Project Manager	Craig Teal
Owner's address, phone, email	1109 South Marion Street, Lake City, FL | P: 386 961 7703 | E: craig.teal@dot.state.fl.us		
Services commenced by this firm (mm/yy)	09/01	Total consultant contract cost ($1,000's)	$8,000
Services completed by this firm (mm/yy)	12/09	Cost of consultant services provided by this firm ($1,000's)	$4,000

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm's Role: Historic evaluation and documentation; in-depth structural, mechanical, and electrical inspections and testing; structural, mechanical and electrical engineering design of the new bascule leafs; strengthening of the historically significant bascule piers; and design of the movable spans and piers of the temporary lift bridge

Firm Members Involved: Steven Shaup, PE; Krishna Mehta, PE

TranSystems inspected all components of the bridge's steel superstructure, concrete decks and substructure and all aesthetic features, including lighting and signage.

Relevant Services

- Historic Movable Bridge
- Bridge Inspection and Evaluation
- Scope of Work Report
- Movable Bridge Structural, Mechanical, and Electrical Analysis
- Rehabilitation Plans and Specifications
- Construction Services

TranSystems obtained concrete samples and supervised testing to determine best rehabilitation strategies. The project required the construction of a temporary lift bridge to accommodate traffic during the bridge's rehabilitation. TranSystems designed the temporary bridge's lift span and piers and worked to ensure that the design solution was appropriate and cost effective. The project was completed with a Determination of No Adverse Effect on this important historic resource.

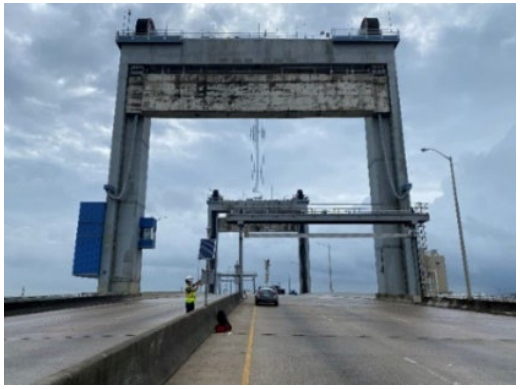
Innovative Concepts

TranSystems developed and designed bascule pier strengthening for scour and ship impact using new drilled shafts with footings under the existing bascule piers, installed while the superstructure was removed. Shafts and footers are not visible and were key in obtaining the No-Adverse Effect on this historical resource.

Firm name	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Danziger Lift Bridge Repair**	Firm responsibility (prime or sub?)	Prime
Project number	Contract 4400009424, H.000303	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Terrebonne Parish, LA	Owner's Project Manager	Mark Bucci
Owner's address, phone, email	1201 Capitol Access Rd., 6th floor, Baton Rouge, LA 70802 | P: 225.379.1321 | E: zhengzheng.fu@la.gov		
Services commenced by this firm (mm/yy)	07/19	Total consultant contract cost ($1,000's)	$1,386
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$1,347 (to date)

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm Members Involved: J. McGormley (Project Manager), S. Lauer (Project Engineer), M. ElBatanouny (Project Engineer), J. Williams (Project Mechanical Engineer), G. Rees (Project Electrical Engineer)



The Danziger Lift Bridge is an electro-mechanical, tower drive vertical lift bridge that opened to vehicular traffic in 1984. The bridge was reportedly experiencing operational issues, which included the movable span no longer fitting into the available space between the towers as well as one corner of the bridge not seating properly. WJE was tasked with performing an inspection of relevant portions of the main span contributing to the reported operational issues, an in-depth inspection of the lift bridge machinery and electrical systems, and development of repairs to restore the long-term functionality and reliability of the bridge. WJE installed instrumentation and monitoring equipment during the field investigation to evaluate the bridge's operations over an extended period. Based on the findings from our investigation, WJE prepared emergency repair plans and specifications to address some of the operational issues with the bridge. Significant findings and the associated remedies included the following.

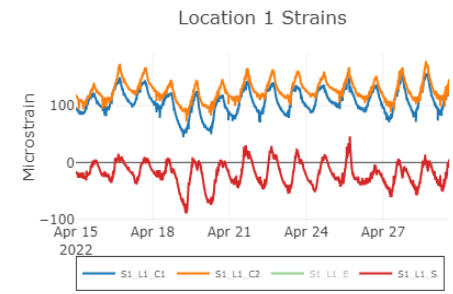
- Improving the lift span riding surface on the steel orthotropic deck with the installation of polyester polymer concrete repairs.
- Identification of pinion shaft bearing damage and the subsequent restoration of the pinion shafts and bearings.
- Addressing the contact of the lift span during warm temperatures with the approach spans by monitoring the joint movements and identifying that daily thermal movements of the approach spans were causing the issue, and that by cleaning the expansion joints, the issue was alleviated.
- Design of a new lift span skew control system after existing components were removed from the bridge and could not be relocated or replaced in kind.
- Design of electrical controls for the clutches associated with the span drive differentials.
- Strain gage testing to measure span balance and implementation of counterweight changes to improve seating of the span.
- Strain gage testing also showed that the span drive differentials on both towers were not functioning properly requiring coordination with the manufacturer to properly adjust the clutches in the differentials.
- Inspection of trunnion bearings and the installation of an automated acoustic monitoring system to assess bearing performance until scheduled replacements are required.

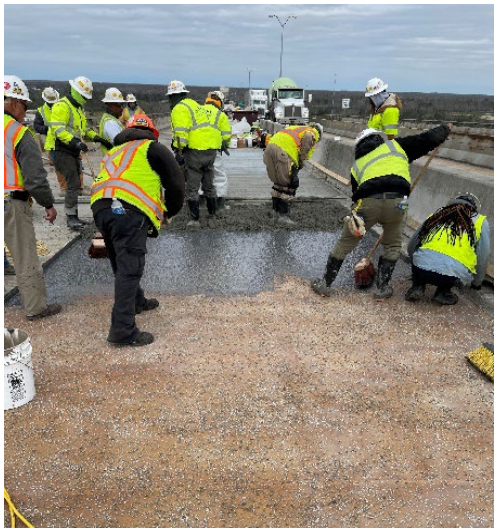
Relevant Services

- Inspection of relevant portions of lfit span
- In-depth inspection of machinery and electrical systems
- Development of repairs
- Emergency repair plans for immediate operational issue
- Identification of pinion shaft bearing damage
- Restoration of pinion shafts and bearings
- Design of lift span skew control system
- Design of electrical controls for clutches
- Strain gage testing
- Inspection of trunnion bearings
- Installation of trunnion bearings and automated acoustic monitoring system
- Repair of steel orthotropic bridge deck

Firm name	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Hale Boggs Memorial (Luling) Bridge Deck Overlay Repair Consultation and Instrumentation Services**	Firm responsibility (prime or sub?)	Subconsultant
Project number	H.012617.6	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Luling, St. Charles Parish, LA	Owner's Project Manager	Chris Guidry
Owner's address, phone, email	1201 Capitol Access Rd., 6th floor, Baton Rouge, LA 70802 | P: 225 379 1328 | E: chris.guidry@la.gov		
Services commenced by this firm (mm/yy)	03/21	Total consultant contract cost ($1,000's)	$499
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$332

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)





Firm's Role: WJE is providing technical guidance and quality assurance assistance to the LADOTD and the contractor repairing the concrete overlay on the steel orthotropic bridge deck spans of this twin pylon, cable-stayed bridge over the Mississippi River. The overlay consists of an epoxy and fabric underlayment system with embedded granite chips overlain by steel fiber reinforced concrete (SFRC). WJE's scope of work included review and modifications to the original overlay specifications to promote better constructability and performance, development of different overly repair methods to accommodate contractor materials on-hand, location and marking of overlay repairs, QA/QC during placement of the overlay repairs, and development and implementation of a long-term monitoring plan to assess the performance of the various repair methods. For the monitoring system, WJE installed a series of strain gages at each layer of the overlay system in order to determine the stability and long-term integrity of each selected patch repair. A duplicate set of gages were installed at each repair location for redundancy and comparison. The instrumentation reports to a central datalogger which transmits the data via cellular modem to a web-based server where it is displayed on a webpage. Over the next two years, WJE will monitor the three study patch repairs with the objective of providing recommendations to the DOTD for future overlay repair or replacement options.

Relevant Services

- Quality assurance and consulting services for deck overlay repair
- Specifications review
- Development of repair methods
- Long-term monitoring system plan development and installation
- Visual examination
- Bond tests, in situ
- Petrographic examinations
- Schmidt rebound hammer testing

As part of its work, WJE was tasked with assessing the cause of the current overlay failures. This included visual examination of the failures, in-situ bond tests of the SFRC to the epoxy underlayment, and petrographic examination of the concrete to epoxy bond surfaces. During overlay repairs, WJE engineers were present to provide QA services and technical guidance to the contractor. This work included Schmidt rebound hammer testing of concrete surfaces and subsequent petrographic examination of concrete removed from repair patches damaged by rain during placement.

Firm Members Involved: J. McGormley (Project Manager), S. Lauer (Project Engineer), M. ElBatanouny (Project Engineer)

Firm name	TranSystems	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Dania Beach Blvd. (SR A1A) over ICWW Bridge Rehabilitation**	Firm responsibility (prime or sub?)	Subconsultant
Project number	N/A	Owner's name	FDOT District 4
Project location	Dania Beach, FL	Owner's Project Manager *(PM was formerly with D4)*	Angela Foreman, PE
Owner's address, phone, email	6 Palmero Ave, Miami, FL | P: 954 290 7309 | E: aforeman@pinnaclecei.com		
Services commenced by this firm (mm/yy)	09/12	Total consultant contract cost ($1,000's)	$1,500
Services completed by this firm (mm/yy)	04/17	Cost of consultant services provided by this firm ($1,000's)	$854

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm's Role: Bridge assessment; structural, mechanical, and electrical engineering; as well as architectural improvements to the control house.

Firm Members Involved: Steven Shaup, PE

TranSystems was selected to complete the rehabilitation design and post-design services for the double leaf bascule bridge carrying SR A1A over the Intracoastal Waterway in Hollywood, Florida. Work included structural, mechanical, and electrical engineering, as well as architectural improvements to the control house. The project focused on bridge maintenance repairs due to deterioration and extending the life of the bridge, as well as ensuring reliable operation. TranSystems' design included new epoxy overlays on the approach spans, new cover plates for the bascule girders, live load shoe refurbishment, open gear replacement and span balancing.

Relevant Services

- Bridge Inspection and Evaluation
- Scope of Work Report
- Movable Bridge Structural, Mechanical, and Electrical Analysis
- Rehabilitation Plans and Specifications
- Construction Services

TranSystems completed span balance testing and counterweight pockets survey; trunnion alignment testing; detailed trunnion bearing and journal inspection and evaluation; detailed inspection of the differential speed reducer ultrasonic testing of trunnion bolts; detailed inspection or rack gears/support frames/racks bolts/cross over shaft and connections; and detailed inspection of the Hopkins Frame.

To improve bicycle and pedestrian safety, the sidewalk grating was replaced with aluminum plates, guardrails and curbs were improved at the east and west transitions, and new bicycle friendly plates were added in the shoulders. To facilitate maintenance and inspection, the project includes the addition of new inspection/maintenance stairs and platforms to bascule piers/traffic gates/equipment, and upgrades to the control house.

To ensure continued, reliable operation, extensive electrical upgrades were done, including new submarine cables; replacing the backup generator, fuel tank and lines; replacing the motors and drives; upgrading the service to 480V; replacing the ATS, installation of new machinery brakes; and new motor control centers. To accommodate new electrical equipment and improve the tender's line of sight, a new upper level was added to the tender's house. All open gearing was replaced, and the bearings of the Hopkins Frame were replaced at the links to the superstructure, as well as on the bascule piers.

Firm name	TranSystems	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Ortega River Bascule Bridge Rehabilitation**	Firm responsibility (prime or sub?)	Prime
Project number	n/a	Owner's name	FDOT District 2
Project location	Jacksonville, FL	Owner's Project Manager	Renee Brinkley
Owner's address, phone, email	1109 South Marion Street, Lake City, FL | P: 386 961 7392 | E: renee.brinkley@dot.state.fl.us		
Services commenced by this firm (mm/yy)	05/08	Total consultant contract cost ($1,000's)	$876
Services completed by this firm (mm/yy)	10/13	Cost of consultant services provided by this firm ($1,000's)	$569

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm's Role: completed an Engineering Study to determine the condition of this 1927 double-leaf, rolling-lift bascule bridge that has been determined Eligible for the National Register of Historic Places

Firm Members Involved: Steven Shaup, PE; Krishna Mehta, PE; Nicholas Sprankle, PE

TranSystems completed an Engineering Study to determine the condition of this 1927 double-leaf, rolling-lift bascule bridge that has been determined Eligible for the National Register of Historic Places. Our study incorporated laser surveying techniques to determine the alignment of the flat tracks and tread plates. We evaluated the drive machinery's ability to meet current design requirements, and additionally completed a detailed investigation to determine the cause of the bascule leaf tips contacting one another in hot weather, causing the bridge to be inoperable. To determine whether thermal movements or pier settlement were to blame, monthly field surveys were taken at specific locations on bascule piers, bascule span and approach slabs to monitor movement and determine correlations between movement and ambient temperature.

Relevant Services

- Historic Movable Bridge
- Bridge Inspection and Evaluation
- Scope of Work Report
- Movable Bridge Structural, Mechanical, and Electrical Analysis
- Rehabilitation Plans and Specifications
- Construction Services

Our team determined the approach span bridge bearings were frozen in place and causing movement at the bascule piers and binding of the bascule leafs.

TranSystems completed design, and prepared construction plans, specifications, and estimates for replacement of numerous components of the mechanical and electrical systems, including replacement of the control console and control system with a control rail to provide more space in the existing control house, replacement of the existing drives with flux vector drives, a new relay-based control system, upgrading of the span drive machinery to meet all AASHTO requirements, replacement of span support machinery components as needed to meet AASHTO requirements and eliminate failure of pintles, upgrading span lock machinery and improve maintenance access, replacement of the existing CCTV system, and replacement of the existing traffic warning gates and signals. To address the problem of frozen approach bearings, TranSystems designed laminated neoprene elastomeric bearing pads at the approach spans

Innovative Concepts

TranSystems developed a testing and phased repair scheme to identify and remedy causes of bascule leaf binding in hot weather.

Firm name	WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**East Roundbunch Road over Cow Bayou**	Firm responsibility (prime or sub?)	Prime
Project number	N/A	Owner's name	Texas Department of Transportation – Bridge Division
Project location	Orange County, TX	Owner's Project Manager	Courtney Holle, PE
Owner's address, phone, email	Austin, TX | P: 512 416 2717 | E: courtney.holle@txdot.gov		
Services commenced by this firm (mm/yy)	06/14	Total consultant contract cost ($1,000's)	$3,409
Services completed by this firm (mm/yy)	06/16	Cost of consultant services provided by this firm ($1,000's)	$1,048

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm's Role: WJE provided the mechanical and electrical engineering for the replacement of all machinery on this center bearing swing span bridge. WJE was also responsible for the structural engineering and overall rehabilitation project. Moveable bridge services included a scoping inspection, bridge design report, preparation of plans, specifications, and cost estimate for all machinery, as well as provision of construction services. The intent of the project was to rehabilitate this historic design structure to provide long-term reliable service. Essential design objectives were to replace the deteriorated and outmoded machinery systems with current state-of-the-art systems that would require less maintenance and be more reliable and efficient than the existing drive which had experienced failures and was in a state of advanced wear. The mechanical design provided complete details for new span drive machinery and support machinery in accordance with the current AASHTO requirements. The span drive machinery was comprised of components with a proven history of utilization on movable bridges and was powered by an electric motor. The support machinery included a new bronze plain center bearing, balance wheels, and a wedge at each corner driven by an electro-mechanical drive train. The design also included center pier live load support rollers. The machinery and structure were protected from risks due to over-travel with energy absorbing end of travel bumpers at the full open and the full closed positions. Elastomeric bumpers were provided as a simple low-cost solution with minimal maintenance requirements. The electrical design included the provision of new drives, controls, and field devices for the span drive machinery and the end wedge machinery. Electrical design details also included design and integration of new traffic control features, bridge and maintenance lighting, and a CCTV system.

Relevant Services

- Mechanical and electrical engineering services
- Structural repair design
- Rehabilitation of historic structure
- Replacement of all machinery with state- of-the-art systems
- Scoping inspection
- Bridge design report
- Preparation of plans, specifications, and cost estimate for all machinery

Firm Members Involved: G. Rees (Electrical Engineering), J. Williams (Mechanical Engineering).

Firm name	ARCADIS	Past Performance Evaluation Discipline(s)*	Bridge, Traffic, ITS
Project name	**I-10 CMAR Structural Design and Traffic Support**	Firm responsibility (prime or sub?)	Subconsultant
Project number	H.004100	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Baton Rouge, LA	Owner's Project Manager	Nicholas Olivier
Owner's address, phone, email	P.O. Box 94245, Baton Rouge, LA 70804-9245 | P: 225 379 1133 | E: nicholas.oliver@la.gov		
Services commenced by this firm (mm/yy)	10/20	Total consultant contract cost ($1,000's)	$20000
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$2500

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

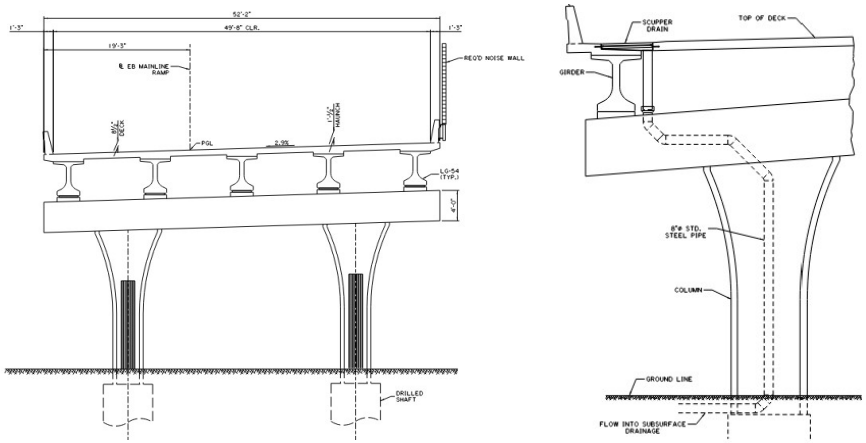
Firm's Role: Bridge and structural design, permanent signing design, transportation management plan (TMP), interchange modification reports (IMRs).

Firm Members Involved: Osama Shahawy, Kristen Kasmire, Bob Beasley, Akhil Chauhan, Kester Hollier, Thomas Montz, Ari Deitch, Jose M. Rodriguez

As part of the COREX10 (Corridor Renewal, Enhancement, and Expansion for I-10) team, Arcadis is responsible for **bridge and structural design**, development of interchange modification reports (IMRs), permanent signing plans, and development of a **transportation management plan (TMP).** The purpose of the project is to widen I-10 from 3 lanes to 4 lanes in each direction, including bridge replacement and rehabilitiaton, interchage and ramp modification, shoulder widening, and auxiliarly lanes from LA 415 to Essen Lane. RCP Plan Phase and Phase 1 Design of the project are in development, which includes the segment of I-10 from the Mississippi River Bridge to Essen Lane.

Relevant Services

- Bridge and Structural Design
- Traffic Study and Design
- Construction Cost Estimate
- Transportation Management Plan
- Stakeholder and Agency Coordination



Bridge / Structural Design – Arcadis is responsble for the design and details substructures of **Terrece-Washington mainlines bridges** and **I-110 Ramp to EB mainlines**, T**emporary and Perminante bridge widenings** for EB &B mainlines. Prepare foundation layout to allow Greenway sharedpass under mainlines bridges the. Also, Desing and detail **Nairn Dr. bridge** replacement over I-10 between Acadian Thruway and College Drive for RCP Phase 1.

Transportation Management Plan – Arcadis is responsible for developing the TMP for the project, which is critical to ensuring the safety of motorists and workers, quality of work, and minimizing travel delays during construction. Arcadis developed a calibrated mesoscopic model to evaluate construction phasing alternatives, determine impacts to the interstate and local network, and identify effective mitigation strategies.

Permanent Signing – Permanent signing plans are being developed to replace all existing guide signs and standard signs along the corridor. Proposed signs utilize the latest state and federal policy guidance and employ strategies such as sign spreading to safely and efficiently guide motorists through the corridor. **Interchange Modification Report** – Arcadis is preparing IMRs for proposed modifications to interchanges along the I-10 corridor, including interchanges improvements at Acadian Thruway, Dalrymple Drive, and Washington Street, and the removal of the existing interchange ramps at Perkins Road.

Firm name	ARCADIS	Past Performance Evaluation Discipline(s)*	Bridge, Environmental
Project name	**North Bayou Black Drive Bridge / Hanson Canal**	Firm responsibility (prime or sub?)	Prime
Project number	H.011533.5	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Terrebonne Parish, LA	Owner's Project Manager	Mr. Gary Pentek
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802 | P: 225 379 1047 | E: gary.pentek@la.gov		
Services commenced by this firm (mm/yy)	10/15	Total consultant contract cost ($1,000's)	$71
Services completed by this firm (mm/yy)	04/18	Cost of consultant services provided by this firm ($1,000's)	$71

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm's Role: Project Management, Site Visit, Right-of-way Determination, Preliminary Plans Preparation, Plan-in-hand Review, Hydraulic Analysis, Guardrail Modification, Bridge Design, Final Plans Preparation, Cost Estimation

Firm Members Involved: Badre Enam, Sharear Kabir, Greg Badon, Jason Morrell, Buddy Porta, Garrett Keller

Relevant Services

- Preliminary and Final Bridge and Roadway Design Plans
- Hydraulic Analysis / Design
- Federal Aid OSBR Program Design Criteria
- LADOTD Bridge Design and Evaluation Manual
- Wetland Finding Report
- Stage 0 Environmental Checklist

Arcadis provided all engineering and related services required for developing plans for the replacement of a two-lane bridge in Terrebonne Parish under the auspices of LADOTD's Off System Bridge Rehabilitation and Replacement Program.

Project Information - With a posted speed limit of 45 mph, the bridge runs parallel to Bayou Black and crosses Hanson Canal right at the juncture of the two tributaries. Arcadis performed a topographic survey utilizing the services of the subconsultant firm Gotech Inc. Based on the survey, a drainage map was developed for Hanson Canal at the site of the bridge. A detailed hydraulic analysis was performed to formulate the best possible alternatives for the bridge replacement, which was an 80-footlong, concrete slab span bridge.

Bridge Design Plans - Arcadis **prepared preliminary plans of the proposed bridge** that included plan and profile sheets, typical roadway sections and quantities, general bridge plan, road closure and relevant signing plan and channel cross-sections. Arcadis took part in a Plan-in-Hand review at the bridge site, which included review teams from both the Parish and the LADOTD. Arcadis was tasked to **prepare Final Plans**, **special specifications**, and **estimates**. Arcadis also performed detailed QA/QC on the final submittal and addressed all comments received from the LADOTD. **Wetland Delineation / Environmental Evaluation**- A wetland delineation study following USACE and LADOTD guidelines was performed, and Solicitation of View (SOV) packets were sent to all regulatory and stakeholder parties with sketches of the proposed bridge replacement. A final **Wetland Finding Report** using the latest FHWA criteria was submitted with SOV packet and their responses along with **an Environmental Checklist**.

*"The deliverables were clear, concise and of sufficient detail ... They demonstrated their strong knowledge when it came to developing the final footprint and project alignment. ... I found them a pleasure to review. They delivered the package of 1/4/2017 and it was due on 1/11/2017. The deliverables were of top quality. They always strive to be at the tip of the sword in coming up with solutions; they provided two alignments to consider. They are problem solvers ..." – **Gary Pentek, LADOTD Off System Bridge Program Manger \| Project: North Bayou Black Drive Bridge / Hanson Canal***

Firm name	ARCADIS	Past Performance Evaluation Discipline(s)*	Bridge, Road, Env
Project name	**Alphonse Forbes Bridge over Sandy Bayou**	Firm responsibility (prime or sub?)	Prime
Project number	City-Parish Project No. 18-Br-Pt-0017	Owner's name	City of Baton Rouge/Parish of East Baton Rouge
Project location	East Baton Rouge Parish, LA	Owner's Project Manager	Tom Stephens
Owner's address, phone, email	P.O. Box 1471, Baton Rouge, LA 70821 | P: 225 389 3186 | E: tstephens@brla.gov		
Services commenced by this firm (mm/yy)	10/19	Total consultant contract cost ($1,000's)	$285
Services completed by this firm (mm/yy)	11/20	Cost of consultant services provided by this firm ($1,000's)	$285

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm's Role: Topographic survey, hydraulic analysis and report, preliminary and final plans preparation, bridge design, geotechnical investigation and report, environmental permits, construction cost estimate

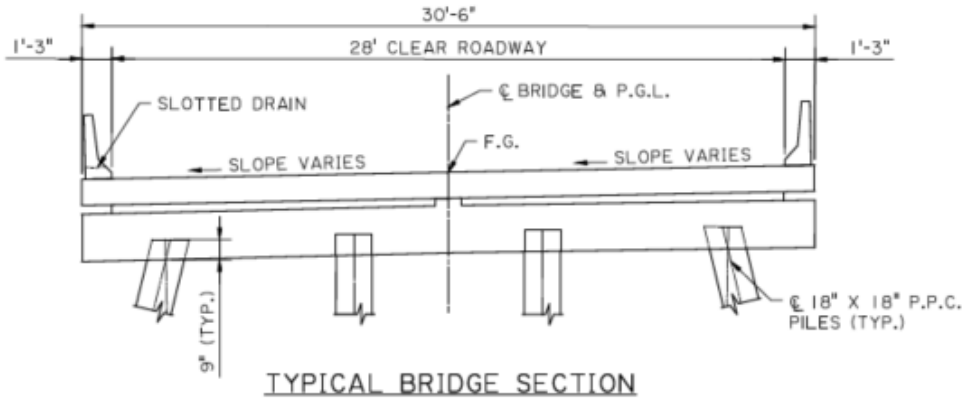
Firm Members Involved: Kristen Kasmire, Osama Shahawy, Badre Enam, Sharear Kabir, Garret Keller, Greg Badon, Buddy Porta

Relevant Services

- Preliminary and Final Bridge and Roadway Design
- Bridge Hydraulics Report
- HEC-RAS Analysis
- Scour Analysis

Preliminary Design Plans and Report : Arcadis provided all environmental and engineering services for the replacement of this existing two-lane bridge in East Baton Rouge Parish under the guidance of LADOTD's Off System Bridge Rehabilitation and Replacement Program. **Within three months of the contract notice to proceed, Arcadis provided a final preliminary design report to the City of Baton Rouge/Parish of East Baton Rouge**, complete with a detailed Hydrologic Engineering Center's River Analysis System (HEC-RAS) analysis, preliminary bridge and road design, and a bridge hydraulics report.

Final Design Plans and Cost Estimate: Arcadis then prepared **final bridge and roadway design plans** and a **construction cost estimate**. The replacement bridge is located in a tangent section of roadway between two super-elevated curves. Site conditions required **close coordination between the roadway and bridge teams to design a safe, constructable facility that fit within the existing right-of-way** while meeting hydraulic opening requirements. The repacement bridge is a 180-foot long, 9-span flat slab structure supported on pile bents. The roadway typical section on the bridge is 2 – 11-foot lanes with 3-foot shoulders. Arcadis also **prepared the needed environmental permits** and **coordinated with USACE** for review and approval.



TYPICAL BRIDGE SECTION
AT INTERMEDIATE BENT

Firm name	RA RAHMAN & ASSOCIATES, INC.			Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Bayou St. John (Park Island)**			Firm responsibility (prime or sub?)	Prime
Project number	S.P. 713-36-0101		Owner's name	Louisiana Department of Transportation and Development (LADOTD)	
Project location	Orleans Parish, LA			Owner's Project Manager	Frederick Wetekamm
Owner's address, phone, email	P.O. Box 94245, Baton Rouge, LA 70804 | P: 504 437 3112 | E: fred.wetekamm@la.gov				
Services commenced by this firm (mm/yy)	02/11		Total consultant contract cost ($1,000's)		$100
Services completed by this firm (mm/yy)	7/12		Cost of consultant services provided by this firm ($1,000's)		$100

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Role: Design of preliminary & final plans under LADOTD Off System bridge program.

100% design work completed in Louisiana.

Firm Members Involved: Ataur Rahman Bhatti, Tafoor Hameed

Relevant Services

- Remove existing bridge.
- Perform hydraulic analysis of bridge.
- Determine type and size of structure
- Acquire scenic permit for Bayou St. John from Army CORPS.
- Prepare preliminary and final plan.
- Replaced existing approach roadways and relocated the utilities where necessary.
- Performed as designed bridge rating

Firm name	RA RAHMAN & AMMICATIS, INC.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Bayou St. John (Harrison Ave.)**	Firm responsibility (prime or sub?)	Prime
Project number	S.P. 713-36-0102	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Orleans Parish, LA	Owner's Project Manager	Frederick Wetekamm
Owner's address, phone, email	P.O. Box 94245, Baton Rouge, LA 70804 | P: 504 437 3112 | E: fred.wetekamm@la.gov		
Services commenced by this firm (mm/yy)	02/06	Total consultant contract cost ($1,000's)	$250
Services completed by this firm (mm/yy)	7/08	Cost of consultant services provided by this firm ($1,000's)	$250

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Role: Design of preliminary & final plans under LA DOTD Off System bridge program.

100% design work completed in Louisiana.

Firm Members Involved: Ataur Rahman Bhatti, Tafoor U. Hameed

Relevant Services

- Remove existing bridge.
- Perform hydraulic analysis of bridge.
- Determine type and size of structure
- Acquire scenic permit for Bayou St. John from Army CORPS.
- Prepare preliminary and final plan.
- Replaced existing approach roadways and relocated the utilities where necessary.
- Performed as designed bridge rating

Firm name	CD&C INCORPORATED	Past Performance Evaluation Discipline(s)*	Survey
Project name	**I-10: LA 415 to Essen Lane on I-10 and I-12**	Firm responsibility (prime or sub?)	Subconsultant
Project number	H.004100	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	West and East Baton Rouge, LA	Owner's Project Manager	Nicholas Olivier
Owner's address, phone, email	1201 Capital Access Rd, Baton Rouge, LA 70802 | P: 225-379-1232 | E: nicholas.olivier@la.gov		
Services commenced by this firm (mm/yy)	01/18	Total consultant contract cost ($1,000's)	N/A
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$296

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

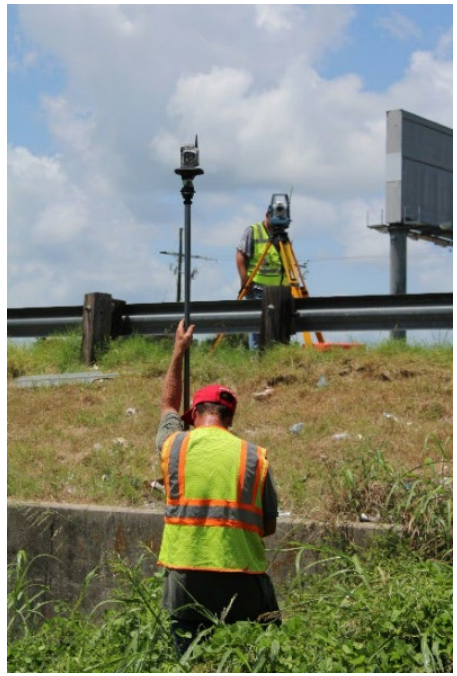
Firm's Role: CD&C as a sub-consultant on this project is responsible for topographic surveying the portion of I-10 in West Baton Rouge Parish beginning at the start of the project limits to a point just before the approach of the I-10 Bridge and the limits of the project along LA 415. **This work included using 3D Scanning for the bridge at I-10 bridge @ LA 415 as well as scanning every 500' for control verification and incorporation of the Mobile Lidar for the I-10 pavement.**

Firm Members Involved: Karla E. Weston, P.E.; Ralph Burgess, PLS, Christopher Ballard, PLS; Phil Dupree, Party Chief; Jacob Stoehr, Party Chief; Trent Norris, 3D scanning technician; John Ewing, Survey Tech; **Performed in LA: 100%.**

Relevant Services

- Topographic Survey in accordance with LADOTD Standards
- 3D Terrestrial Scanning

This project is located in West Baton Rouge and East Baton Rouge Parishes in the cities of Port Allen and Baton Rouge, LA. A complete Topographic survey including all utilities (ASCE 38-02, QL "B") with depths and all drainage is required, along with Finish floor elevations of all buildings that fall within the survey limits. The survey begins 1,500 feet West of the western most entrance/exit ramps of the LA 415 and I-10 Interchange. From the I-10, I-12 split the survey shall proceed in southerly and easterly directions along the existing main alignment of I-10 for approximately 1.5 miles & I-12 for approximately 1.5 miles to end the route limits.



Firm name	CD&C INCORPORATED	Past Performance Evaluation Discipline(s)*	Survey
Project name	**LA 443: Tangipahoa River Emergency Bridge Replacement**	Firm responsibility (prime or sub?)	Subconsultant
Project number	H.02728.5	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Tangipahoa Parish, LA	Owner's Project Manager	Thomas Gattle (Huval & Assoc.)
Owner's address, phone, email	922 W. Point Des Mouton Rd., Lafayette, LA 705007 | P: 337 234 3798 | E: tgattle@huvalassoc.com		
Services commenced by this firm (mm/yy)	10/16	Total consultant contract cost ($1,000's)	N/A
Services completed by this firm (mm/yy)	11/16	Cost of consultant services provided by this firm ($1,000's)	$81

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm's Role: CD&C completed a topographic survey which included all utilities with depths, all drainage, all building information including finish floor elevations, and all super/substructure of the bridge over the Tangipahoa River. Additional cross-sectional information regarding the river was located by traditional means upstream and downstream for the engineer's design of the new bridge. To utilize data collection of the failed bridge, 3D Terrestrial Scanning was incorporated in conjunction with traditional means to complete the topographic survey. **Due to the nature of the project being an Emergency Bridge replacement all staff worked on this project non-stop until field work was completed in less than 3 weeks.**

Relevant Services

- Topographic Survey in accordance with LADOTD Standards
- 3D Terrestrial Scanning

Firm Members Involved: All CD&C Personal were involved on this project. Karla Weston, PE; Ralph Burgess, PLS Survey Manager; Christopher Ballard, PLS Survey PM; John Ewing, Survey Tech; Trent Norris, 3D Scan Tech; Phil Dupree, Party Chief; Jacob Stoehr, Party Chief **Performed in LA: 100%**

This Project was for the Emergency replacement of the bridge on LA 443 over the Tangipahoa River due to the Historic Floods in August of 2016. The project is located Northeast of Hammond, Tangipahoa Parish, Louisiana, 4 miles Northeast of the intersection of La 1064 and La 443. The survey total length was approximately 1500'. The width of the survey and DTM was extended to a total of 170 feet (90 feet North of the existing centerline of La 443- and 80-feet South of the existing centerline of La 443).

Firm name	CD&C INCORPORATED	Past Performance Evaluation Discipline(s)*	Survey
Project name	**LA 58: Petit Caillou Bridge Rehabilitation / Sarah Bridge**	Firm responsibility (prime or sub?)	Subconsultant
Project number	H.010006.5-3	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Terrebonne Parish, LA	Owner's Project Manager	Thomas Gattle (Huval & Assoc)
Owner's address, phone, email	922 W. Point Des Mouton Rd., Lafayette, LA 705007 | P: 337 234 3798 | E: tgattle@huvalassoc.com		
Services commenced by this firm (mm/yy)	04/17	Total consultant contract cost ($1,000's)	N/A
Services completed by this firm (mm/yy)	07/17	Cost of consultant services provided by this firm ($1,000's)	$31

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm's Role: CD&C performed a topography survey along LA 58 from Little Caillou Road to Bayside Drive within the existing right of way. Also, CD&C located all utilities within the designated areas of the bridge site and cross-sectioned this large bayou up and downstream of the bridge. Utilities were marked by LA One Call. **3D Terrestrial Scanning** was used in conjunction with single beam hydrographic surveying in addition to traditional means and methods to collect data for the project. To obtain all critical information for design the bridge had to be scanned at both raised and lowered positions.

Relevant Services

- Topographic Survey in accordance with LADOTD Standards
- 3D Terrestrial Scanning

Firm Members Involved: CD&C employees involved in the project included Ralph Burgess, PLS, Survey Manager; Christopher Ballard, PLS Survey Project Manager; Trent Norris, 3D Scanning Technician; John Ewing, Survey Technician. **Performed 100% LA.**

The purpose of this project is to provide a structural, architectural, mechanical, and electrical rehabilitation of the movable bridge and approaches that shall allow it to remain in service for an additional 50 years with routine maintenance along with various other repairs and updates to the site. CD&C was tasked with performing the topographic survey and DTM for this movable bridge structure and site.

Firm name	APS Engineering and Testing	Past Performance Evaluation Discipline(s)*	Geotech
Project name	**US-90 Railroad Overpass (S. East of LA-85)**	Firm responsibility (prime or sub?)	Subconsultant
Project number	H.010155	Owner's name	Shread-Kuyrkendall & Associates, INC.
Project location	Iberia Parish, LA	Owner's Project Manager	Nicci D. Gill
Owner's address, phone, email	13016 Justice Ave. Baton Rouge, LA; 70816 | P: 225 296 1335 | F: 225 296 1338 | E: ngill@skaengr.com		
Services commenced by this firm (mm/yy)	11/19	Total consultant contract cost ($1,000's)	N/A
Services completed by this firm (mm/yy)	03/20	Cost of consultant services provided by this firm ($1,000's)	$105

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Role: Geotechnical investigation to provide client with the necessary information for planning and design of a 12 ft. x 10 ft. RCB, 412 ft. in length a total of six (6) deep borings were completed by APS. over 60 atterbergs and UU were tested by APS with 18 consolidation tests. all the necessary testing done by in house by APS laboratory.

Firm Members Involved:

ENGINEERING

Sergio Aviles, PE – Project Manager

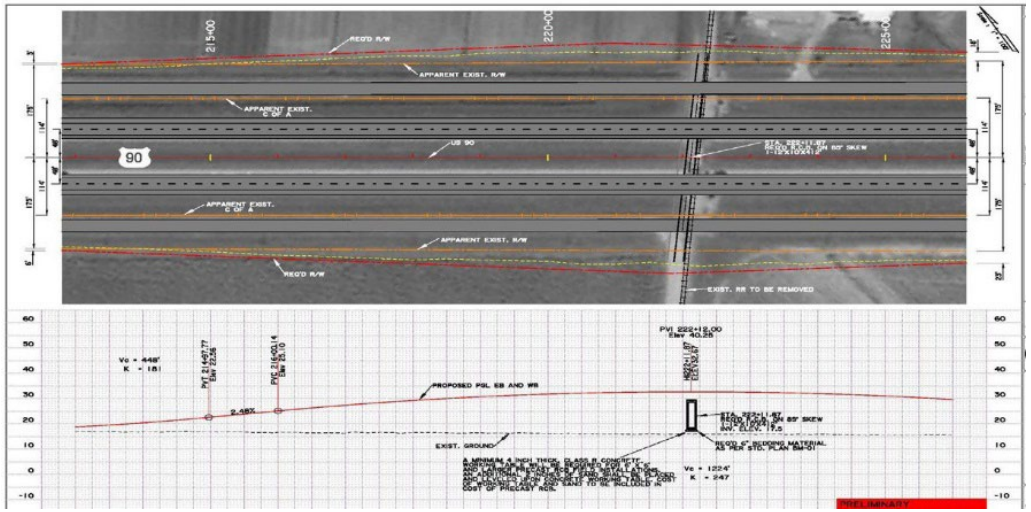
Sai Eddanapudi, M E, PE – Project Engineer

Surendra Raj Pathak, MS, PE – Staff Engineer

LABORATORY TESTING

Sergio Aviles, PE – QA QC

Sai Eddanapudi, ME – QA/QC



Relevant Services

- Geotechnical Explorations (GE)
- Geotechnical Design (GD)
- Geotechnical Construction (GC)
- Constructability
- Contract Management (CM))

Firm name	APS Engineering and Testing	Past Performance Evaluation Discipline(s)*	Geotech
Project name	**I-10 Widening LA 415 to Essen LN**	Firm responsibility (prime or sub?)	Subconsultant
Project number	H.004100	Owner's name	DOTD
Project location	Baton Rouge, LA	Owner's Project Manager	Kristy Smith, PE
Owner's address, phone, email	1201Capitol Access Rd., Baton Rouge, LA 70802 | P: 225 379 1016 | E: kristy.smith2@la.gov		
Services commenced by this firm (mm/yy)	09/19	Total consultant contract cost ($1,000's)	N/A
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$400

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Role: Geotechnical investigation to provide client with the necessary information for planning and design I-10 widening.
APS was tasked thru our DOTD geotechnical retainer to drill and sample a total of 52 deep borings starting at the Washington exit and ending at the LSU lakes. along with this drilling and sampling APS will al so test for strength and engineering characteristics of the soils. a total of eight (8) over the water borings and 44 land borings with approximate 1000 triaxial compression, unconsolidated drained or undrained (UU) and Atterberg limits.

Firm Members Involved:

ENGINEERING

Sergio Aviles, P E – Project Manager

Sai Eddanapudi, ME, PE – Project Engineer

Surendra Raj Pathak, MS, PE – Staff Engineer

LABORATORY TESTING

Sergio Aviles, PE – QA/QC

Sai Eddanapudi, ME, PE– QA/ QC

Relevant Services

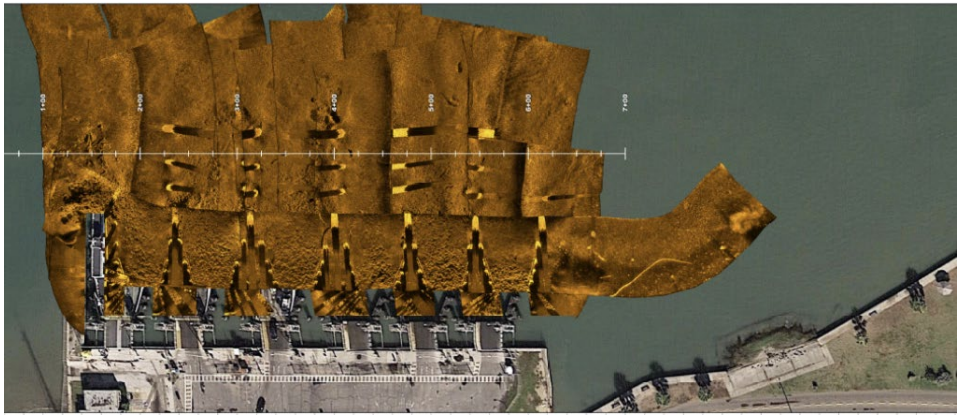
- Geotechnical Explorations (GE)
- Geotechnical Design (GD)
- Geotechnical Construction (GC)
- Topographic Survey (LC)
- CMAR
- Contract Management (CM)

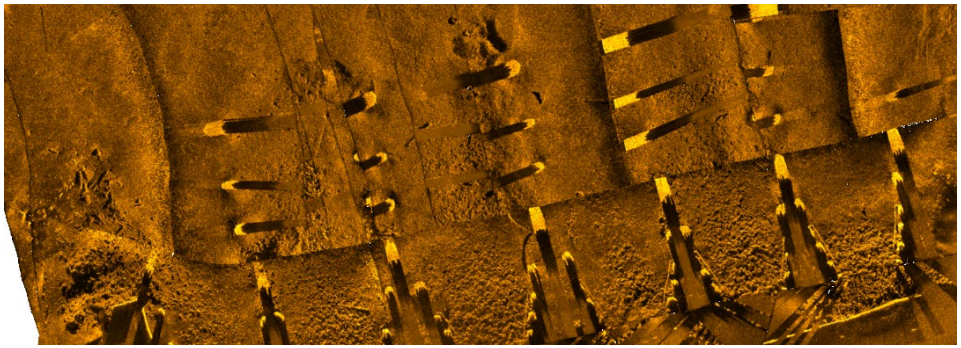
Firm name		Past Performance Evaluation Discipline(s)*	Survey
Project name	**Bathymetric & 3D Mechanical Scanning Sonar Survey of Port Aransas Ferry Landings – Corpus Christi Ship Channel**	Firm responsibility (prime or sub?)	Prime
Project number	S.P. No. 700-52-0198	Owner's name	TxDOT
Project location	Refugio County, TX	Owner's Project Manager	Sal Salazar
Owner's address, phone, email	7221 Washington Avenue, Houston, TX, 77007, (210) 615-5959, sal.salazar@txdot.gov		
Services commenced by this firm (mm/yy)	07/15	Total consultant contract cost ($1,000's)	$44.88
Services completed by this firm (mm/yy)	04/16	Cost of consultant services provided by this firm ($1,000's)	$44.88

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm's Role: Multibeam 3D Scanning, Side Scan Sonar, Topographic Survey

Firm Members Involved: Justin Bordelon, PLS, Joe Broussard





Relevant Services

- Bathymetric Survey
- Topographic Survey
- Side Scan Sonar

Fenstermaker was contracted by Texas Department of Transportation to perform a multibeam 3D scan of the subsurface landing structures, utilizing the Edgetech 6205 multibeam system, as part of a maintenance program. The purpose of these surveys is to identify any possible obstructions that could have an impact on the ongoing ferry operations.

To develop the highly detailed deliverables for the project, Fenstermaker collected approximately 30 transects spaced at approximately 25-feet intervals. This data was coupled with side scan sonar imagery to create a georeferenced mosaic to develop a clear image of the existing water bottom within the project area. Additionally, a full topographic survey of the ramp landings was done utilizing existing ground control to confirm the acoustics data was accurate and correct.

Firm name		Past Performance Evaluation Discipline(s)*	Survey
Project name	**Underwater Acoustic Imaging for Bridge Inspection Statewide**	Firm responsibility (prime or sub?)	Prime
Project number	S.P. No. 700-52-0198	Owner's name	La DOTD
Project location	Washington Parish, LA	Owner's Project Manager	Haylye G. Brown, P.E.
Owner's address, phone, email	1201 Capitol Access Rd, Baton Rouge, LA 70802, (225) 379-1500, Haylye.Brown@LA.GOV		
Services commenced by this firm (mm/yy)	11/11	Total consultant contract cost ($1,000's)	$114
Services completed by this firm (mm/yy)	11/13	Cost of consultant services provided by this firm ($1,000's)	$114

Describe the project including the firm's role and members involved. (Highlight members to be used in this proposal.)

Firm's Role: Underwater Acoustic Imaging (UAI), Data Processing

Firm Members Involved: Justin Bordelon, PLS, Lance Fontenot

Relevant Services

- Underwater Acoustic Imaging
- Data Processing
- Remote Sensing

Fenstermaker was contracted to provide **Underwater Acoustic Imaging (UAI)** services for the underwater bridge inspection of pier systems for 72 state-maintained bridges. The project scope consisted of an underwater acoustic inspection and evaluation of the submerged components of the piers utilizing a multi-axis, steered beam imaging and profiling remote sensing system with all acoustic data correlated to a Real Time Kinematic (RTK) GPS positioning system. The purpose of the inspection and evaluation was to identify and locate any major damage or deterioration of the pier structures along with a detailed localized inspection of any observed anomalies using both the acoustic imaging system and dive inspection; and identify any localized scour impact or erosion of the surrounding water bottom. The data was processed, and mosaics of the acoustic imagery were generated and included in a report that also documents the findings and recommendations resulting from the UAI and dive inspections.

Section 18

TranSystems
Historic Bridge of Lions Bascule Bridge
East Baton Rouge Parish, LA

18. Approach and Methodology:

PROJECT UNDERSTANDING

To best prepare for this contract, the Arcadis project management team had a **virtual meeting with DOTD Bridge Section Administrator, Jenny Fu**, prior to issuance of the RFP to gain a complete understanding of the DOTD's vision and needs for this IDIQ contract. This IDIQ contract will be mainly focused on bridge preservation projects, which may also include moveable bridges, but may require a full-service team to meet the specific needs of each assigned project.

We have assembled a team that can handle any work assigned through the IDIQ contract and **exceed the DOTD DBE goal requirement**. Our team brings a deep bench of resources to meet project schedules and deliver concurrent projects while meeting other workload demands. The Arcadis design team, led by **Project Manager, Osama Shahawy, PE**, is supported by highly qualified subconsultants including **Rahman & Associates, Inc.**, **TranSystems Corporation, Wiss, Janey, Elstner (WJE) Associates, Inc.**, **Civil Design and Construction (CD&C), Inc.**, **C.H. Fenstermaker & Associates, LLC, and APS Engineering and Testing**. We have carefully chosen these firms based on our previous experience working as a team, their DOTD transportation project success, and their availability to support this project. We have expertise in all types of structures: simple to complex, concrete, steel, timber, and composites. We are experienced with bridge design, inspection, rehabilitation, and load rating and are ready to take on whatever project is assigned through this IDIQ. Our team has **experienced staff that could tackle any type of specialized work.**

Project Management: Arcadis will establish communication protocols to coordinate with DOTD, and Osama will be the primary point of contact. We understand that some specialized work, such as geotechnical investigations, may be done by DOTD or by other consultants contracted to DOTD. Osama will ensure that all communications route through the DOTD PM, so everyone is informed of project progress. Osama will schedule and lead bi-weekly design coordination meetings with DOTD where issues related to each project can be discussed and resolved. Meeting minutes will be prepared, and action items and responsible parties will be identified and tracked through a coordination log. He will conduct weekly internal team meetings including subconsultants to accomplish interdisciplinary coordination and maintain schedule.

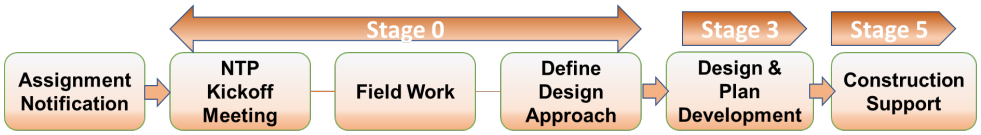
Team Experience: Arcadis and its subconsultants have managed and delivered projects of equivalent size in the past and have the necessary staff to meet the contract objectives. Arcadis has a long history of supporting various State DOTs in bridge preservation, capacity evaluation, and design. The Arcadis team has experience on projects with similar scopes of service as we would expect for this contract, and our team has delivered projects representing the full range of services that are included in the Scope of Service.

PROJECT APPROACH

As a wide range of project types may be assigned under this contract, we understand that the approach to an assignment will vary with the specific needs of each project assignment. However, our general approach for delivery includes:

- Osama will contact the DOTD project manager and LPA Responsible Charge within 24 hours of receiving a task order request to plan a kick-off meeting/pre-design conference.
- A kick-off meeting/pre-design conference, conference call, and/or site visit will be held to discuss the assignment, schedule, staffing needs, and required deliverables.
- Our team will request any available data (e.g., as-built plans, traffic counts, scoping reports, etc.) that may be needed to adequately assess and understand project objectives and needs.
- With a clear understanding of the initial assignment, we will prepare a scope of work, staffing plan, schedule, and cost proposal.
- Work will commence after the Task Order (TO) proposal has been accepted by DOTD's project manager and a written notice-to-proceed (NTP) is issued.
- Following an NTP, the Arcadis team will implement a work and staffing plan to successfully complete the project.

One benefit of task-order based delivery is the ability to execute an initial TO to assess the project needs, make recommendations, and develop subsequent TOs to deliver the best solution based on initial findings. The scope for each project is not locked-in at project initiation and can be right sized at each stage of delivery.
TOs will include some or all of these stages: Stage 0 (Assessment/Recommendation), Stage 3 (Design & Plan Development), and Stage 5 (Construction Support).



STAGE 0: After receiving the **NTP**, the PM and task leads will meet with the DOTD PM to mutually agree on management procedures, communication protocols and delivery schedule. The team will conduct a **field visit**, as needed, to evaluate accessibility of the project sites, inspection approach, potential scour & mitigation, and other constraints that may affect design or constructability. We will develop and implement a plan for efficiently and safely venturing into the field to acquire any needed data.

Research and reuse existing data: **Geotechnical boring data:** If the project requires subsurface foundation information, we will first locate the available geotechnical boring from previous projects to determine if additional soil boring is needed. **Survey data:** We will minimize survey needs by utilizing as-built plans, where feasible. Having accurate survey for a certain type of project is necessary, but also costly. Depending on project needs, the information contained in the as-built plans may suffice, and survey can be eliminated.

Bridge inspection: When needed, the Arcadis team will provide all services required to perform **Statewide NBIS In-Depth Inspections**. We will examine the superstructure elements for deficiencies, including spalls, scrapes, or impact damage. We will measure loss due to corrosion using calipers and electronic D-meters to determine the amount of remaining

section, as well as compare deficiencies to those previously noted. The team will complete a hands-on inspection of FC elements using dye penetrant to delineate any suspected cracks in steel members. Section loss reduces the structural capacity and will be considered for new load ratings. Fatigue reduces the useful life of the structure and cracks in FC elements may lead to failure and loss of life. Deck joints are checked for deterioration and leakage, which can lead to premature deterioration of bearings and concrete substructure elements. We examine substructure elements for cracks and spalls on pile caps, and spalls on prestressed or reinforced concrete piles. Piers are inspected for evidence of vertical, lateral, or rotational movement. Access ladders and platforms, as well as fender systems (above water) are inspected, and any deterioration noted. LRFR load ratings will be completed for all structures in accordance with all applicable DOTD, AASHTO and FHWA requirements for the existing condition of the structures, including any previous repairs or improvements, and all deterioration noted from site inspections.

Bridge Load Rating: Arcadis will gather and review DOTD bridge inspection reports and verify the accuracy and severity of the follow up action items for the selected bridge via visual field inspection. Bridges will be evaluated based on the data gathered using **AASHTO Load & Resistance Factor Rating (LRFR)** in accordance with DOTD's "Policies and Guidelines for Bridge Rating and Evaluations" and DOTD Bridge Design Manuals, including Bridge Design Technical Memoranda.

Using the data gathered, load rating, condition rating, and applying the **Guidelines for Preservation/ Rehabilitations/ Replacement (PRR) projects**, the Arcadis team will prepare and submit a comprehensive report with the findings on **bridge condition and recommended conceptual design/repair requirements with estimates** to DOTD for review and approval. This report will include the **Design Criteria** in accordance with all applicable DOTD policies, procedures, and manuals. After the conceptual design has been agreed upon, the Arcadis PM will prepare the scope of services for stage 3 (design and plan development) and stage 5 (construction services), as needed for each project assignment.

STAGE 3 (DESIGN): Upon receiving DOTD design alternative approval, the Arcadis PM will meet with the DOTD PM to determine the appropriate scope, fee, schedule, and deliverables. Arcadis will provide the services required for each project assignment. Our approach to probable project assignments is outlined below:

Approach 1 (Bridge New/Replacement): Replacing a bridge with low sufficiency rating (structurally deficient/ functionally obsolete) may be justified through economic analysis. The best value structure configuration will be one that minimizes the roadway profile and increases and balances the hydraulic opening. Our goal is to design a structure that strikes a balance between the roadway, structural and hydraulic constraints of the project to produce the lowest cost and best value.

Approach 2 (Bridge Preventive Maintenance & Repair): This applies to bridges with minor structural defects that require **early preventive maintenance** to extend their life. This will include, for example, the repair of scour countermeasures, embankment erosion, etc.

Approach 3 (Bridge Rehabilitation): Deficient existing structures eligible for rehab will be evaluated to restore the structural integrity of the bridge as well as correct major safety defects. Our report from Stage 0 will **identify all deterioration, operational deficiencies, obsolescence of components, safety issues, and repair/ rehabilitation recommendations.** Based on severity, repairs can be categorized as minor, intermediate, or major. Appropriate repair materials and methods differ significantly depending on the location, size, cause, and configuration of the defect. Repair of an existing structure may include, but not be limited to, replacing the bridge deck, upgrading bridge rail, repairing columns/beams, repairing/improving the structural capacity, etc.

Approach 4 (Bridge Widening): Widening is another form of rehabilitation required to bring the bridge to the current standards, i.e., increasing shoulder width, adding sidewalks, or increasing traffic capacity.

An example illustrating the Project Manager Osama Shahawy's **rehabilitation and preservation** experience is an emergency bridge inspection and structural engineering services for the Irving Boulevard bridge over Regal Row, Dallas, Texas. Osama led an emergency inspection and provided a preliminary assessment of the bridge. He also performed structural engineering services to prepare plans for the **repair of the bridge beams, construction support** and inspection, and final approval of the repairs. The bridge carries four-lanes of traffic over Regal Row, with a posted vertical clearance of 14 feet, 10 inches. The boom of an excavator transported by a truck hit the prestressed concrete bridge beams, damaging six of the beams on the third span of the bridge. Northbound Regal Row was shut down due to the risk of falling debris. The preliminary, emergency field report revealed no serious structural damage to the bridge and northbound Regal Row was reopened to traffic. A **close collaboration with the contractor enabled the repairs to be completed three days** after the issuance of the final signed and sealed bridge repair plans.

Design Peer Reviews: Our team understands it is imperative that design plans we produce meet criteria and clearly convey how the project is to be constructed to result in accurate and competitive bids. Reviews will be conducted at project milestones to ensure the proposed solution and construction sequence are suitable for the site condition. Common questions we will answer through constructability reviews include: *How will the contractor access the site for construction? Are easements needed? Is this captured in the environmental permit and ROW? Will crane placement for bridge construction cause utility conflicts? How will adjacent property owners gain access during construction?*

A bridge inspection engineer will also review the proposed solution to ensure common issues observed during bridge inspection will not be repeated. Reviews will be performed by senior engineers and coordinated with DOTD to review items such as phasing, utilities, staging, accessibility, and confirm that the design is constructible. Arcadis will provide construction

staging with minimal impact on traffic operations that enhance motorist safety. Arcadis has a strong history of projects being constructed within the programmed budget, within schedule, and with minimal change orders. An estimate will be prepared based on the quantities per item for the design using the most up-to date statewide bid cost averages.

STAGE 5 (CONSTRUCTION ENGINEERING): As DOTD's Engineer of Record (EOR), Arcadis will be available to provide construction support and respond to all requests for information from the Contractor. The team will review items such as shop drawings, phasing and staging plans, demolition plans, etc.

The Arcadis team will be available, as needed, to discuss the design and help make decisions. Contractors may have suggestions or request a different sequence of construction for cost considerations. If changes are required on the plans, we will make revisions promptly. We understand that contractor delays, especially on individual bridges, must be avoided.

OTHER SCOPE SERVICES DELIVERY APPROACH

The needs of each project assigned under this IDIQ contract may require services in addition to bridge design/inspection/rehabilitation. Our team has the capabilities to support projects with full-services capabilities.

Road Design: Arcadis will perform preliminary and final roadway design related to bridge preservation projects. The projects will be designed to PRR, 3R, or new construction standards following AASHTO and DOTD requirements. Services to be provided may include but are not limited to roadway horizontal and vertical alignment, pavement geometrics, earthwork quantities, drainage design, alternatives analysis as required, erosion control, ADA design compliance, guardrail layout, utility coordination, and quantity calculations. Arcadis' roadway engineers will assist in managing the flow of information between survey, roadway, bridge, utility, and right-of-way teams.

Drainage/Hydraulic Design: The Arcadis team will handle the site-specific conditions of roadway drainage and hydraulic design for the rehabilitation/replacement structures in accordance with the DOTD Hydraulics manual and any other applicable DOTD requirements. Th e results of the analysis for each structure will be summarized in a Hydraulics Data Table for bridges. Also, we will include the No Rise Certification, as needed.

Traffic & Data Collection: Traffic engineering services will support all potential task orders under this IDIQ. Any required traffic studies and/or analysis will be conducted in accordance with the Traffic Engineering Process and Report (TEPR) guidelines. Traffic data collection and analysis will be used to identify operational and safety needs of the project and to develop and evaluate the effectiveness of potential alternatives. Arcadis is experienced with a wide range of traffic study applications and preferred tools including HCS, SIDRA, and Synchro. Our team will work closely with DOTD to develop a traffic scope that meets the specific needs of the project and facilitates a data-driven approach to alternative development and evaluation.

Similarly, Arcadis is experienced with a wide range of traffic design applications including permanent signing, signal design, and permanent striping. Traffic design services will be conducted in accordance with associated state and federal guidelines including the DOTD Sign Manual, DOTD Signal Manual, DOTD Standard and Special Details, Manual on Uniform Traffic Control and Devices, etc.

Transportation Management Plan (TMP): Arcadis will develop the TMP as applicable to each task order in accordance with EDSM VI.1.1.8. The level of TMP will be determined based on the project's location and impact to the roadway network. Determining the TMP level prior to project scoping is imperative to ensuring that all TMP requirements are included in the scope and that all necessary traffic data is collected to support any required analysis. Arcadis will coordinate closely with the DOTD DTOE and District Staff to ensure a mutual understanding of local needs and that proposed mitigation measures are appropriate for the area.

Movable Bridge: TranSystems and WJE are ready to conduct the inspection/repair/rehab for any assigned moveable bridges. Inspections will help determine the recommended scope of work, and will meet NBIS requirements, when needed. NBIS inspections will be completed in accordance with Federal regulations and DOTD manuals, and the findings will be documented. The most recent inspection reports will be reviewed for special considerations and to identify changing conditions which may be of particular concern. If the inspection reveals a need for repair and/or rehabilitation, they will provide the design, details, specs, and a construction approach.

Mechanical/Electrical Inspections: Our team includes engineers experienced in mechanical and electrical systems for moveable bridges. They will conduct hands-on inspection of moveable bridge components, including operating and counterweight ropes, sheaves, trunnion bearings, live load supports, gears, bearings, couplings, brakes, speed reducers, hydraulic equipment, traffic control machinery and machinery supports and connections as applicable. This will include measurement of wearing components such as ropes, gears, bearings, span locks and brakes to quantify wear and to assess the condition of these components for continued service. They will also prepare the design and details for any needed repair, rehabilitation, or replacement of these systems.

Bridge Tender Facilities, Architectural, HVAC and Plumbing Inspection: Detailed inspections of the bridge tenders' facilities in conformance with DOTD requirements and references will be completed, if assigned. Our inspections will focus on weatherproofing of roofs, doors, and windows and will note levels of conformance with building codes, including the Life Safety Code. HVAC units will be inspected for damage or corrosion, and verification of proper operation, smoke detectors, and safety cutoff switches. We will also verify the condensate line is draining properly and inspect the duct system for leaks. Exposed potable water, sewer lines, and supports will be inspected for damage and corrosion, identifying leaks, insufficient support, and damaged/missing insulation or jacketing. Our team will fully open and close shutoff valves to verify proper operation with no leaks. We will confirm there are no obstructions in plumbing vents through the roof. Our inspectors will also examine water wells and booster pumps for general damage and corrosion.

Sampling: Our team has comprehensive scientific expertise led by WJE for evaluation and testing construction materials. Protective coating material samples will be evaluated and tested for compatibility with proposed use cases. Using state-of-the-art evaluation methods, our team will test and analyze the structures for heavy metals and will determine the proper procedures for treatment and handling or disposal of waste.

Instrumentation: Distress and deterioration are not always visible to the naked eye. Conversely, visible damage does not always correlate to more serious, widespread issues.

To assess the condition of the structures, depending on the level and nature of observed distress, **strain gauges, displacement instrumentation, accelerometers, and other sensors** may need to be placed throughout the structure, and a comprehensive modeling of the structure may be required.

Non-Destructive Testing (NDT): **WJE and TranSystems** will use the inspection reports/data for the assessment of as-built conditions; evaluation of material properties and distress in a component or system; and investigation of potential material issues using methods such as ground penetrating radar, impact echo testing, half-cell corrosion potential surveying, and infrared thermography, etc.

Geotechnical Services: **APS** will provide all necessary services related to geotechnical investigations and analysis as assigned. These services may include geotechnical field investigations, shallow and deep soil borings, geotechnical laboratory testing and analysis, preparation of soil boring logs, and geotechnical design and analysis based on data either obtained or furnished by DOTD in conformance with DOTD design procedures.

Surveying and title work services: **CD&C** will conduct the **topographic survey, property survey, title search, and right of way mapping**. Survey will adhere to all modern survey theory, practice, and procedures, and follow the latest version of the DOTD Location and Survey Manual including typical surveying methods as applied by DOTD. **CD&C** will topographically **survey all utilities and floor elevations of all buildings that fall within scope of work**. This includes all accepted horizontal and vertical control standards as stated in the manual. To avoid delays while the Title Research Reports are being compiled, Title Take-Offs can be performed. Title Take-offs provide ownership and other information on the various parcels without the 30-year historical ownership investigation performed during the Title Research Reports.

Fenstermaker will conduct any needed underwater survey. Survey will be done using **multibeam** sound signals with a **Norbit STX iWBMS system**. Sound velocity profiles will be taken at each survey location and at minimum of twice per day (pre/post survey). For the side scan sonar surveys, a combination of different side scan sonar systems will be utilized. To collect side scan on the water bottom, an **Edge Tech 4125 High Resolution side scan sonar will be utilized with 100% overlapping data.**

Environmental and permitting services: For each TO, ecologists and environmental professionals will complete a desktop review of available GIS databases to identify previously recorded environmental resources in the project area. Field investigations will then be initiated to delineate the extent of environmental resources present within project limits and obtain GPS locations for inclusion in design plans. Our staff have experience working with the U.S. Army Corps of Engineers; U.S. Coast Guard; Louisiana Departments of Environmental Quality, Natural Resources, and Wildlife and Fisheries; and levee districts and will bring lessons learned and best permitting practices to this discussion. It has been our experience that this approach can streamline the permit process by reducing agency comments and associated delays. Once the project has progressed to final design and required permits have been identified, our environmental team will work with design to prepare necessary permitting exhibits and supporting information required for complete permit applications. Upon permit application submittal, we will continue to coordinate with resource agencies throughout the review process to ensure all information has been received for timely reviews.

PROJECT DELIVERY

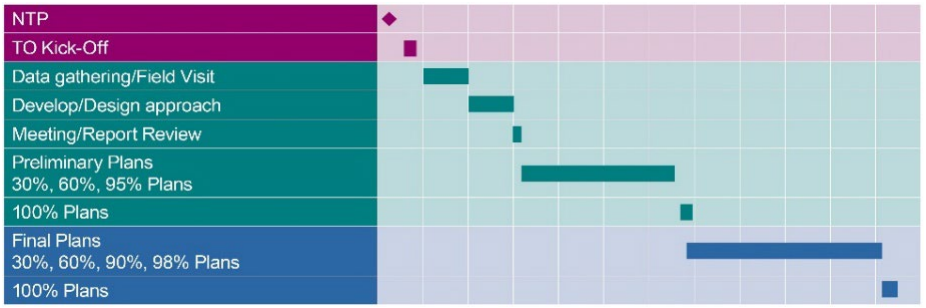
Preliminary Plans: Preliminary plans will be developed in accordance with AASHTO and current editions of DOTD's Design Manuals, and DOTD's Minimum Design Guidelines as well as any other applicable guidelines. Osama will coordinate closely with DOTD and project stakeholders throughout critical preliminary design stages and conduct design workshops as necessary to ensure design conformance while achieving project goals. Osama will ensure that all DOTD and stakeholder comments are addressed and tracked throughout the preliminary plan development process, and that updated construction cost estimates compare with initial planning and allocated budget.

Final Plans: During final plan development, Arcadis will finalize all design components and quantities based on final survey and ROW mapping and stakeholder comments received during preliminary plan development. Construction phasing and traffic control plans will be developed by experienced design leads, using innovative sequencing strategies to minimize impacts to operations and safety during construction. Any design exceptions that were identified during preliminary plan stages would be requested during final plan development, with supporting documentation and record of engineering reasoning. Upon submittal and distribution of final signed and sealed plans, Arcadis will provide final construction cost estimates to support funding and construction bid review and all QA/QC documentation and checklists. Arcadis' proven project management approach, commitment to quality, focus on client needs, and experienced staff are key factors in delivering successful design projects.

Submittals: We will work with DOTD PM for each TO to ensure all necessary submittals are made. The Arcadis team will use electronic plan delivery to upload all PDF plans to DOTD ProjectWise, unless directed otherwise by DOTD PM. All electronic deliverables will be uploaded directly into the DOTD ProjectWise repository at each plan delivery milestone.

Software: The Arcadis team will design and develop plans using DOTD pre-approved software. If any other software is required for unique applications for which pre-approved software cannot be used, a synopsis of the software will be submitted to the bridge design engineer administrator for approval prior to use.

Project schedule: Prior to starting work on any TO, a critical path schedule will be submitted to DOTD PM for approval.



DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

ARCADIS

Sections 19-21

WJE
Danziger Lift Bridge Repair
Terrebonne Parish, LA

19. Workload:

Firm(s)	Past Performance Evaluation Discipline(s) *	State project number	Project name	Remaining unpaid balance**
ARCADIS	Bridge	H.004100.5	I-10: LA 415 to Essen Lane on I-10 and I-12	$1,098,670
	Environmental	H.002397.2	LA 16 (Pete's Hwy) Interstate 12 Interchange Route	$20,109
		H.011328.2	I-49 South (Ricohoc to Berwick)	$828,788
		4400019338	Rural Bridge Replacement Initiative Phase II – Multiple State Project Numbers – Districts 02, 03 ,07, 61, and 62	$395,228
	Traffic	H.011328.2	I-49 South (Ricohoc to Berwick)	$176,056
		H.003370	I-220/I-20 Interchange IMP & BAFP Access Design Build	$15,000
		H.004100.5	I-10: LA 415 to Essen Lane on I-10 and I-12	$597,523
		H.005121	LA 1/LA 415 Connector	$108,947
		H.972419.1	SHSP Update and Regional SHSP Marketing/Advertising Support	$16,635
		H.012018.6	Adaptive Traffic Signal Design and Implementation	$12,608
		H.014305.1	US 61: Cardinal Drive to Bert Street	$24,808
		H.013322.1	LA 3040 Feasibility Study	$56,672
	Road	H.011328.2	I-49 South (Ricohoc to Berwick)	$353,273
	ITS	H.013868.5	ITS Program Management and Operations (2021)	$108,591
		H.013868.6 (A)	ITS Routine Maintenance Engineering and Inspection (ME&I) (2021)	$15,897
		H.013868.6 (B)	ITS Responsive/Emergency Maintenance Engineering and Inspection (ME&I) (2021)	$21,401
		H.013868.5	ITS Program Management and Operations (2022)	$668,651
		H.013868.6 (A)	ITS Routine Maintenance Engineering and Inspection (ME&I) (2022)	$674,471
		H.013868.6 (B)	ITS Responsive/Emergency Maintenance Engineering and Inspection (ME&I) (2022)	$154,105
			PO No. 2000588785 Scott Tower Cable and Grounding Repair, PO No. 2000634027 I-20 @ I-220 CCTV Repair for The Site in Shreveport, LA, PO No. 2000644636 I-10 @ LA 22 DMS CCTV Install	$14,700
		H.004100.5	I-10: LA 415 to Essen Lane on I-10 and I-12	$231,299
	CE&I/OV	H.011220.6-1	I-10 CBD2 Carrollton-Lafitte Ave and Supplement No. 1	$80,338
		H.012876.6	US 90Z (I-10 Magnolia Street) Supplement No. 1	$26,829
		H.013710.6	I-10: US 61 to Laplace ITS Deployment	$534,514
		H.012901.6, H.010634.6	US 90Z (Bodenger Blvd. – Stumpf Blvd.)	$339,654

Firm(s)	Past Performance Evaluation Discipline(s) *	State project number	Project name	Remaining unpaid balance**
TranSystems	N/A	N/A	N/A	N/A

Firm(s)	Past Performance Evaluation Discipline(s) *	State project number	Project name	Remaining unpaid balance**
RA RAHMAN & ASSOCIATES, INC. Civil and Structural Engineers (DBE/SBE)	Bridge	H.014319	Cedarcrest Avenue over Weiner Creek	$3,293
	Bridge	H.014270	Lefort Bypass, Lafource Parish	$16,461

Firm(s)	Past Performance Evaluation Discipline(s) *	State project number	Project name	Remaining unpaid balance**
WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS	Bridge	Contract 4400009424 H.000303.6	Contract 4400009424, Task Order No. H.000303.6, Danziger Bridge Repair	$38,315
	Bridge	Contract 4400009424, Task Order 5	Contract 4400009424, Task Order No. 5, Elastomeric Bearing Pad Testing	$44,646
	Bridge	H.014280	Contract No. 4400017263, H.014280 Bayou Ramos	$142,599
	Bridge	H.014673	I-49, US 165: Debonded PPC Girder Rehab I-49/US165, Rapides Parish	$24,498
	Bridge	H.012617.6	I-310: I-10 to US 90, Hale Boggs Memorial (Luling) Bridge, Deck Overlay Repair Consultation, Instrumentation Services	$221,747
	Bridge	Contract 4400001762, H.014899.6	I-10/310 Bonnet Carré Fire Damage Repair	$37,618

Firm(s)	Past Performance Evaluation Discipline(s) *	State project number	Project name	Remaining unpaid balance**
C&C INCORPORATED (DBE/SBE)	Surveying	4400017597	Rural Bridge Replacement Initiative (Districts 03, 07, 61, & 62)	$7,235
	Surveying	4400017091/ TO-2	LWI Statewide Modeling R5 – Task Order #2	$148,086
	Surveying	4400017091/ TO-3	LWI Statewide Modeling R5 – Task Order #3	$246,123

Firm(s)	Past Performance Evaluation Discipline(s) *	State project number	Project name	Remaining unpaid balance**
FENSTERMAKER C. H. Fenstermaker & Associates, L.L.C.	Data Collection, Planning, Survey	4400017090	IDIQ Contract for Louisiana Watershed Initiative (LWI) Region 4 (Task Order No. 2) Acadia, Allen, Beauregard, Calcasieu, Cameron, Sabine, and Vernon Parishes, LA	$1,486,566
	Data Collection, Planning, Survey	4400017090	IDIQ Contract for Louisiana Watershed Initiative (LWI) Region 4 (Task Order No. 3) Allen, Beauregard, Calcasieu, Cameron, DeSoto, Natchitoches, and Vernon Parishes, LA	$3,580,753
	Survey	4400017091	IDIQ Contract for Louisiana Watershed Initiative (LWI), Region 5 (Task Order No. 2), Acadia and Evangeline Parishes, LA	$91,206
	Survey	4400017092	IDIQ Contract for Louisiana Watershed Initiative (LWI), Region 6 (Task Order No. 2), Terrebonne Parish, LA	$153,532
	Survey	400017092	IDIQ Contract for Louisiana Watershed Initiative (LWI), Region 6 (Task Order No. 3), Assumption Parish, LA	$1,050,046
	Road	4400020291 S. P. No. H.012869	LA 182 (Univ) @ LA 723 (Renaud) Roundabout, Lafayette Parish, LA	$323,697
	Road	4400005673 S.P. No. H.0011235	I-49 South @ Verot School Road, Lafayette Parish, LA	$2,450
	Road	4400020016 S.P. No. H.011833.5	St. Mary Street Sidewalks, Lafayette Parish, LA	$164,347
	Planning	4400020960	Discovery NFIP CTP, Statewide	$19,974

Firm(s)	Past Performance Evaluation Discipline(s) *	State project number	Project name	Remaining unpaid balance**
APS Engineering and Testing (DBE/SBE)	Geotech	H.013127	Retainer Contract for Geotechnical Services	$53,996
	Geotech	H.013144	Retainer Contract for Geotechnical Services	$45,457

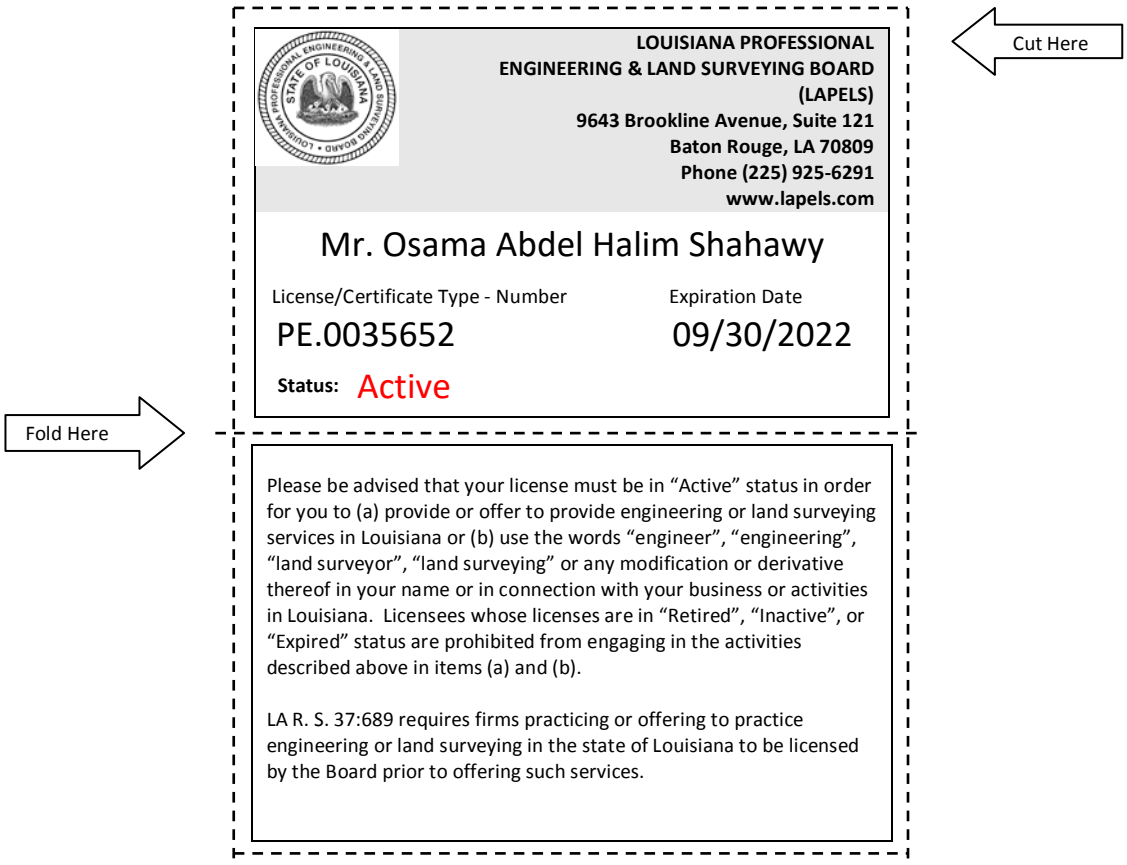
20. Certifications/Licenses:

STAFF CERTIFICATION CHART SUMMARY	
Names	Relevant Certification
Arcadis Staff	
Osama Shahawy, PE	Professional Engineer – LA / PE.0035652 / 09-30-2022
Kristen Kasmire, PE	Professional Engineer – LA / PE.0043461 / 09-30-2023
Bob Beasley, PE	Professional Engineer – LA / PE.0034159 / 03-31-2023
Jose L. Rodriguez, PE	Professional Engineer – LA / PE.0030492 / 03-31-2023
Akhil Chauhan, PE, PTOE, PTP, PMP	Professional Engineer – LA / PE.0033703 / 09-30-2022 Professional Traffic Operations Engineer – #2544 / Exp. 11/2023 Professional Transportation Planner – #246 / Exp. 12/2024 Traffic Engineering Analysis Process & Report Modules 1, 2, & 3
Kester Hollier, PE, PTOE	Professional Engineer – LA / PE. 0034304 / 03-31-2023 Professional Traffic Operations Engineer – #3928 / Exp. 11/2024 Traffic Engineering Analysis Process & Report Modules 1, 2, & 3
Thomas Montz, PE, PTOE	Professional Engineer – LA / PE. 0039128 / 09-30-2022 Professional Traffic Operations Engineer – #4093 Exp. 07/2022 Professional Transportation Planner – #599 / Exp. 12/2024 Traffic Engineering Analysis Process & Report Modules 1, 2, & 3
Ari Deitch, PE, PTOE, RSP	Road Safety Professional – #37 Professional Engineer – LA /PE. 0041842 / 03-31-2024 Professional Traffic Operations Engineer – #4346 / Exp. 11/2023 Traffic Engineering Analysis Process & Report Modules 1, 2, & 3
Jose M. Rodriguez	Road Safety Professional – #160 Traffic Engineering Analysis Process & Report Modules 1, 2, & 3
TranSystems Staff	
Krishna Mehta, PE	Professional Engineer – LA / PE.0045352 / 09-30-2023
Lawrence Kirchner, PE	Professional Engineer – LA / PE.0031409 / 03-31-2024
Michael Elza, PE	Professional Engineer – LA / PE.0039135 / 03-31-2023
Nicholas Sprankle, PE	Professional Engineer – LA / PE.0045388 / 09-30-2023

Steven Shaup, PE	Professional Engineer – LA / PE.0045298 / 09-30-2023
WJE Staff	
Jonathan McGormley, PE, SE	Professional Engineer – LA / PE.0043912 / 03-31-2024
John Williams, PE	Professional Engineer – LA / PE.0044300 / 09-30-2022
Gareth Rees, PE	Professional Engineer – LA / PE.0040754 / 09-30-2022
Curtis Schroeder, PhD, PE, SE	Certified Complex Bridge Inspection
Leonard Phelps	Certified Protective Coating Sampling Specialist
Steve Lauer, PE, SE	Certified Complex Bridge Inspection and Instrumentation
Rahman Staff	
Ataur Rahman Bhatti, PE	Professional Engineer – LA / PE.0018643 / 03-31-2023
CD&C Staff	
Ralph Burgess, PLS	Professional Land Surveyor – LA / PLS. 5040 / 09-30-2022
Fenstermaker Staff	
Travis Bodin, PLS, PMP	Underwater Surveying/Side Scan Sonar
Justin Bordelon, PLS	Underwater Acoustic Inspection
APS Staff	
Sergio Aviles, PE	Professional Engineer – LA / PE.0033571/ 03-31-2024
Sairam Eddanapudi, ME, PE	Professional Engineer – LA / PE.0035129/ 03-31-2024
Surendra Raj Pathak, MS, PE	Professional Engineer – LA / PE.0043487/ 09-30-2023

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 12/06/2018 , the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:



Print and keep the following information for your record or verification. The pocket card may also be printed on card stock or laminated to keep with you as license/certificate verification.

Disclaimer
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Certificate of Training

NATIONAL HIGHWAY INSTITUTE

Osama A. Shahawy

has participated in

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

hosted by

Chicago Transit Authority & HBM Engineering Group, LLC

Date: *January 05-16, 2015*

Hours of Instruction: 67 Hours

Location: *Chicago, IL*

Guy R Lang PE
Instructor

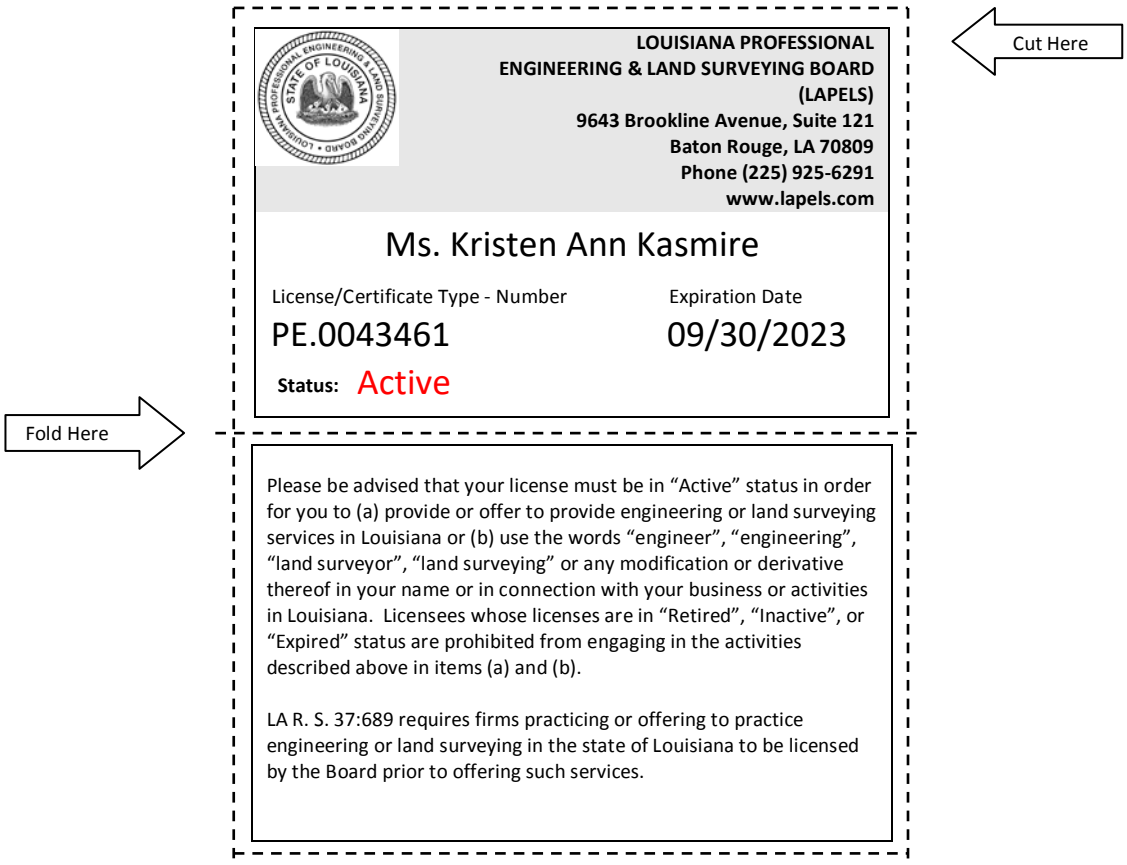
Luiz Ricardo
Local Coordinator

H C Ryan J. P.E.
Instructor

Valerie Briggs
Valerie Briggs, Director
National Highway Institute

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 9/26/2021 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:



Print and keep the following information for your record or verification. The pocket card may also be printed on card stock or laminated to keep with you as license/certificate verification.

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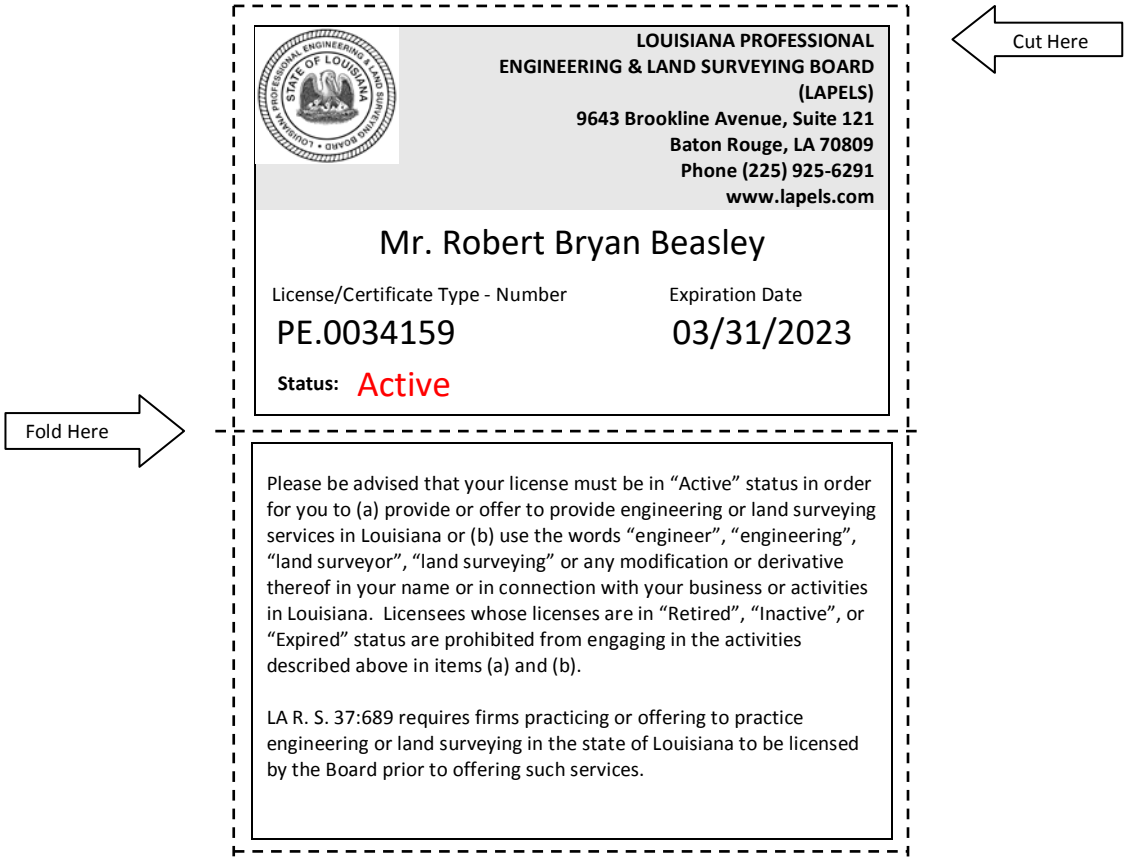
LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 12/06/2018 , the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:



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The Ohio Department of Transportation

Certifies That:

ROBERT B. BEASLEY

has satisfactorily completed 21 **hours of training in:**

BRIDGE INSPECTION

March 21st, 22nd, & 23rd, 1990
Date

Bernard B. Hurst
Director of Transportation

COLUMBUS, OHIO
Place

JAMES E. BARNHART, S.M.I.E.
Course Instructor(s)

The Ohio LTAP Center

Certificate of Accomplishment

BOB BEASLEY

has completed 6.50-hours of training in

ELEMENT LEVEL BRIDGE INSPECTION TRAINING

April 12, 2016
Workshop Date

Victoria F. Beale
Victoria F. Beale, JD, SPHR
Director, LTAP Center

Speaker/Presenter

Speaker/Presenter

Speaker/Presenter

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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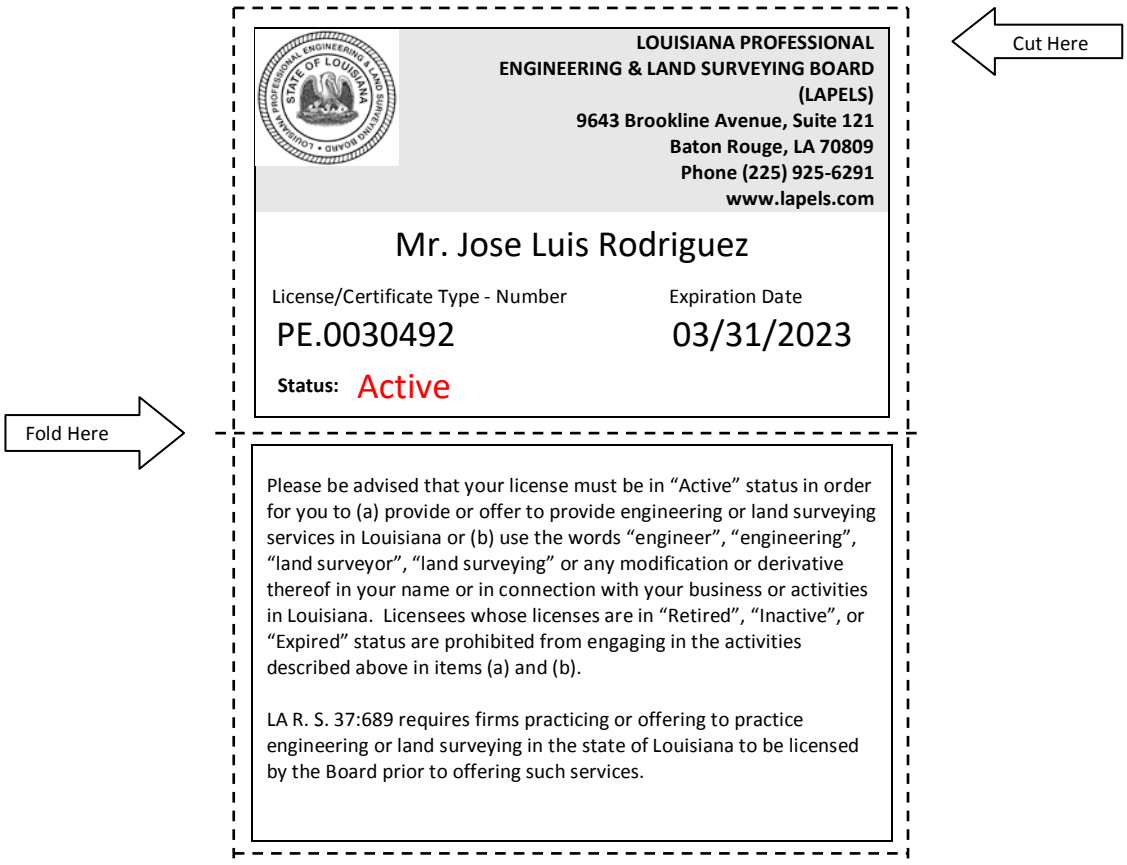

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Thomas L. Ervin
Traffic Doc, LLC
269 Evangeline Drive
Mandeville, LA 70471-1894
Phone 985-373-0534

November 2, 2019

To Whom It May Concern,

This is to verify that the below listed employees of WSP, USA have successfully completed ATSSA traffic control training courses in New Orleans, LA as described below:

LA Specific Traffic Control Technician (TCT) – 10-29-19 = Brian Hundt, Rebecca Lala, Victor Sanchez, & Hamid Yaghoubi

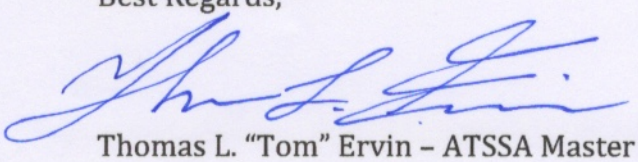
LA Specific Traffic Control Supervisor (TCS) - 10-31-19 – Brian Hundt, Rebecca Lala, Victor Sanchez, & Hamid Yaghoubi

LA Specific Traffic Control Supervisor Refresher (TCS REFRESHER) – 11-1-10 – Jose' Rodriguez

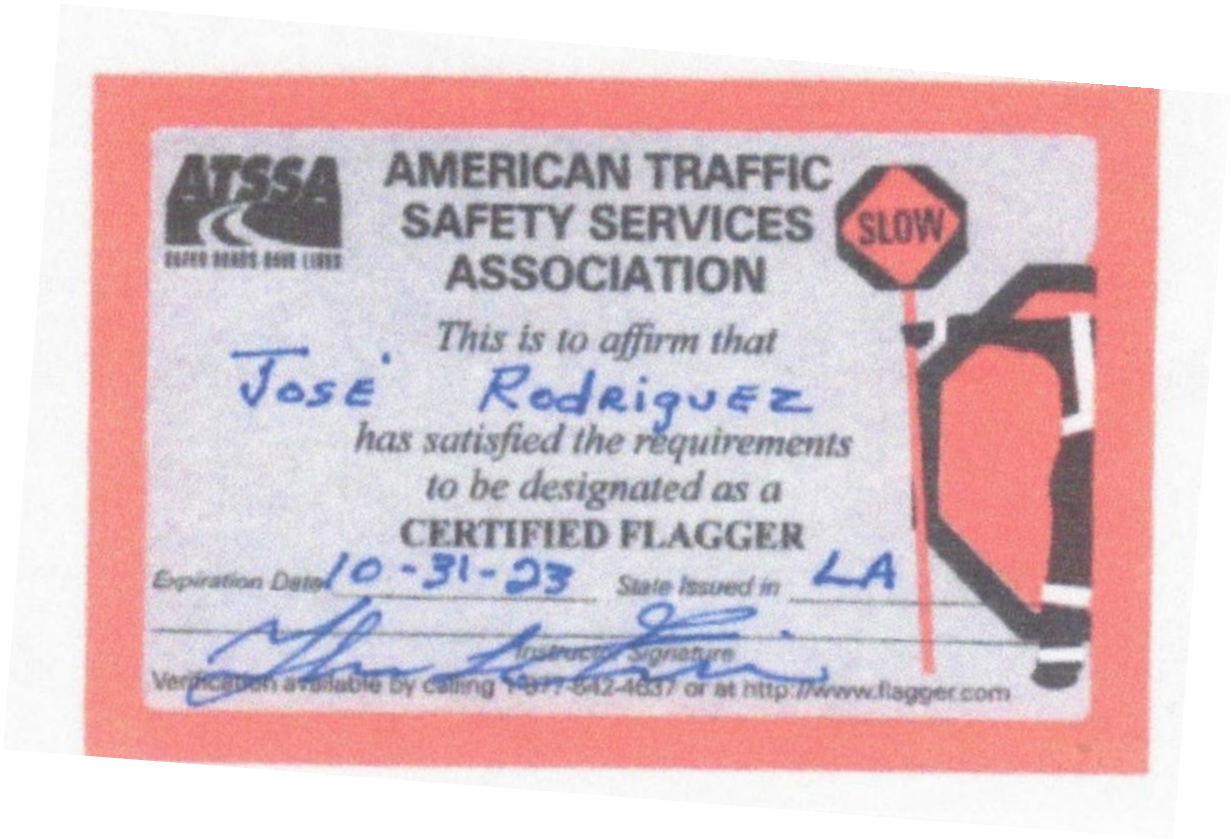
This letter will serve as temporary proof of successful course completion until the above listed employees receive their official certificates from the American Traffic Safety Services Association (ATSSA). This temporary letter shall expire 90 days from the dates of training shown above.

Should there be any questions regarding the above, please contact the undersigned at the above captioned address.

Best Regards,



Thomas L. "Tom" Ervin – ATSSA Master Instructor



ATSSA

AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION

SLOW

This is to affirm that

Jose' Rodriguez

has satisfied the requirements to be designated as a

CERTIFIED FLAGGER

Expiration Date 10-31-23 *State Issued in* LA

Instructor Signature

Verification available by calling 1-877-642-4637 or at http://www.flagger.com

ATSSA TRAINED

PROOF OF TRAINING

THIS CERTIFICATE HEREBY RECOGNIZES THAT

Jose L Rodriguez

has attended

Traffic Control Supervisor Refresher-LA State Specific

Training Course

11/1/2019 to 11/1/2019
Date

Vice President of Member Services

New Orleans, LA
Location

President, CEO

ATSSA provides training and certification but neither constitutes employment by ATSSA.

ATSSA American Traffic Safety Services Association ATSSA.com

Transportation Professional Certification Board Inc.

certifies that

Akhilendra Singh Chauhan

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 2544 issued in Washington, D.C. is subject to the provisions for renewal

November 24, 2008

Steven D. Hofener
Chair

PTOE
PROFESSIONAL
TRAFFIC
OPERATIONS
ENGINEER

Executive Director

Cut Here

LOUISIANA PROFESSIONAL ENGINEERING & LAND SURVEYING BOARD (LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
www.lapels.com

Mr. Akhilendra Singh Chauhan

License/Certificate Type - Number	Expiration Date
PE.0033703	09/30/2022

Status: Active

Fold Here

Please be advised that your license must be in "Active" status in order for you to (a) provide or offer to provide engineering or land surveying services in Louisiana or (b) use the words "engineer", "engineering", "land surveyor", "land surveying" or any modification or derivative thereof in your name or in connection with your business or activities in Louisiana. Licensees whose licenses are in "Retired", "Inactive", or "Expired" status are prohibited from engaging in the activities described above in items (a) and (b).

LA R. S. 37:689 requires firms practicing or offering to practice engineering or land surveying in the state of Louisiana to be licensed by the Board prior to offering such services.

Print and keep the following information for your record or verification. The pocket card may also be printed on card stock or laminated to keep with you as license/certificate verification.

Project Management Institute

THIS IS TO CERTIFY THAT

Akhilendra S Chauhan

HAS BEEN FORMALLY EVALUATED FOR DEMONSTRATED EXPERIENCE, KNOWLEDGE AND SKILLS TO LEAD AND DIRECT PROJECT TEAMS AND IS HEREBY BESTOWED THE GLOBAL CREDENTIAL

Project Management Professional

IN TESTIMONY WHEREOF, WE HAVE SUBSCRIBED OUR SIGNATURES UNDER THE SEAL OF THE INSTITUTE.

Beth Parleton · Chair, Board of Directors

Mark A. Langley · President and Chief Executive Officer

PROJECT MANAGEMENT INSTITUTE CORPORATE SEAL 1969 PENNSYLVANIA

PMP® Number **1444676**

PMP® Original Grant Date **16 August 2011**

PMP® Expiration Date **15 August 2014**

PMI Project Management Institute

Transportation Professional Certification Board Inc.

certifies that

Akhilendra Singh Chauhan

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

PROFESSIONAL TRANSPORTATION PLANNER

Unless withdrawn by the Certification Board, this certificate number 246 issued in Washington, D.C. is subject to the provisions for renewal

December 1, 2009

Steven D. Hofener
Chair

PTP
PROFESSIONAL TRANSPORTATION PLANNER
TRANSPORTATION PROFESSIONAL CERTIFICATION BOARD INC.

Executive Director

Certificate of Completion

presented to

Akhil Chauhan

for completing the

Traffic Engineering Analysis Process & Report
Module 1

Date: June 4, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 4

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Akhil Chauhan

for completing the

Traffic Engineering Analysis Process & Report
Module 2

Date: June 11, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 4

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Akhil Chauhan

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: September 10, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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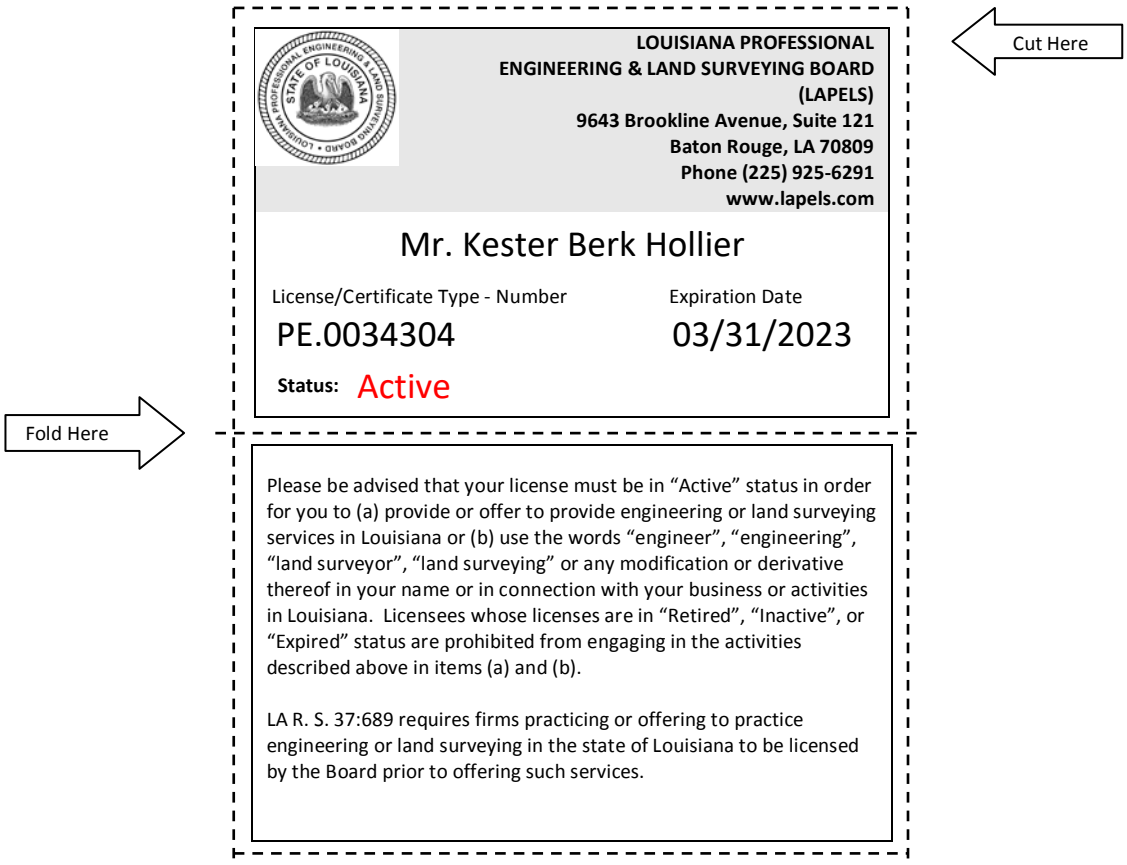

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Transportation Professional Certification Board Inc.

certifies that

Kester Berk Hollier

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

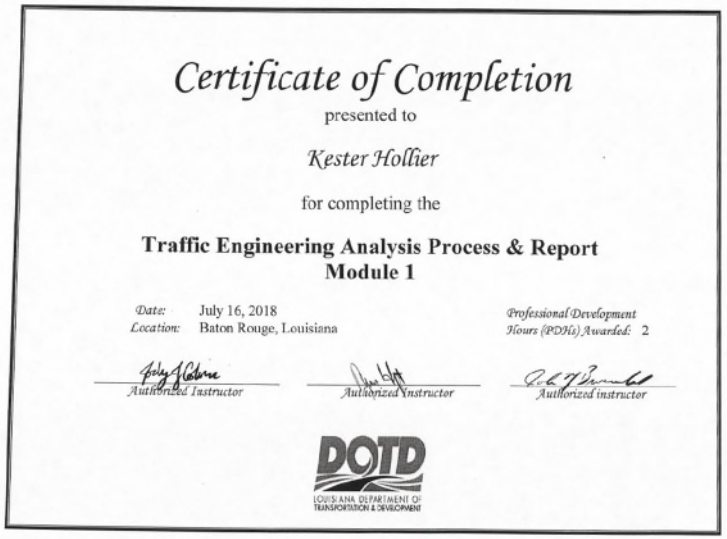
PROFESSIONAL TRAFFIC OPERATIONS ENGINEER

unless withdrawn by the Certification Board and subject to the provisions for renewal.
Certificate number 3928 issued in Washington, D.C., U.S.A.
November 18, 2015

Kenneth W Ackert
Chair

PTOE
PROFESSIONAL
TRAFFIC
OPERATIONS
ENGINEER
TRANSPORTATION PROFESSIONAL CERTIFICATION BOARD INC.

Executive Director



Certificate of Completion

presented to

Kester Hollier

for completing the

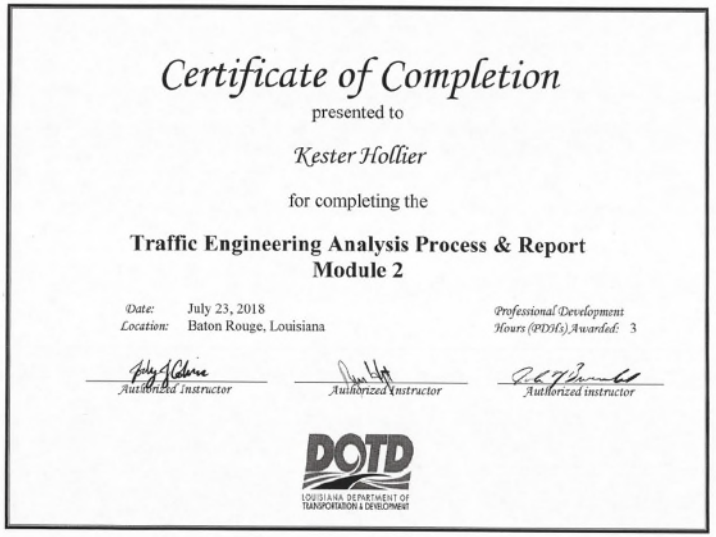
Traffic Engineering Analysis Process & Report
Module 1

Date: July 16, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 2

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



Certificate of Completion

presented to

Kester Hollier

for completing the

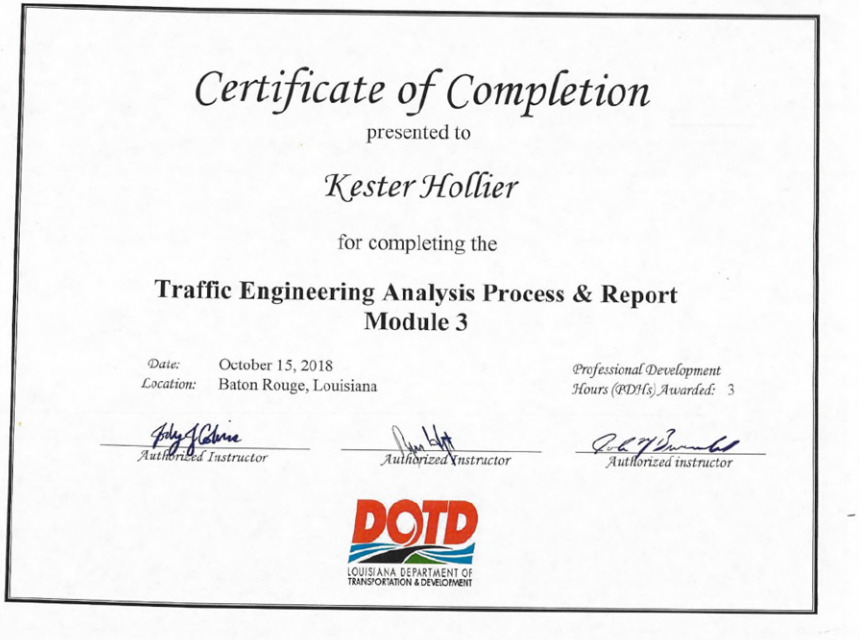
Traffic Engineering Analysis Process & Report
Module 2

Date: July 23, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



Certificate of Completion

presented to

Kester Hollier

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: October 15, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Cut Here

LOUISIANA PROFESSIONAL ENGINEERING & LAND SURVEYING BOARD (LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
www.lapels.com

Mr. Thomas Jude Montz Jr.

License/Certificate Type - Number: PE.0039128

Expiration Date: 09/30/2022

Status: Active

Fold Here

Please be advised that your license must be in "Active" status in order for you to (a) provide or offer to provide engineering or land surveying services in Louisiana or (b) use the words "engineer", "engineering", "land surveyor", "land surveying" or any modification or derivative thereof in your name or in connection with your business or activities in Louisiana. Licensees whose licenses are in "Retired", "Inactive", or "Expired" status are prohibited from engaging in the activities described above in items (a) and (b).

LA R. S. 37:689 requires firms practicing or offering to practice engineering or land surveying in the state of Louisiana to be licensed by the Board prior to offering such services.

Print and keep the following information for your record or verification. The pocket card may also be printed on card stock or laminated to keep with you as license/certificate verification.

Transportation Professional Certification Board, Inc.

certifies that

Thomas Jude Montz, Jr.

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 4093 issued in Washington, DC, USA
7/18/2016

PTOE PROFESSIONAL TRAFFIC OPERATIONS ENGINEER

Kenneth W. Ackeret
Chair

Jeffrey F. Paniati
Executive Director

Transportation Professional Certification Board, Inc.

certifies that

Thomas Jude Montz, Jr.

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

Professional Transportation Planner

unless withdrawn by the Certification Board and subject to the provisions for renewal.
Certificate number 599 issued in Washington, DC, USA

3/15/17

Michael K. Park
Chair

PTP
PROFESSIONAL
TRANSPORTATION
PLANNER
TRANSPORTATION PROFESSIONAL CERTIFICATION BOARD INC.

Jeffrey F. Paniati
Executive Director

Certificate of Completion

presented to

Thomas Montz

for completing the

Traffic Engineering Analysis Process & Report
Module 1

Date: July 16, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 2

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Thomas Montz

for completing the

Traffic Engineering Analysis Process & Report
Module 2

Date: July 23, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Thomas Montz

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: December 3, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Cut Here

Fold Here

LOUISIANA PROFESSIONAL ENGINEERING & LAND SURVEYING BOARD (LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
www.lapels.com

Mr. Ari J. Deitch

License/Certificate Type - Number	Expiration Date
PE.0041842	03/31/2024

Status: Active

Please be advised that your license must be in "Active" status in order for you to (a) provide or offer to provide engineering or land surveying services in Louisiana or (b) use the words "engineer", "engineering", "land surveyor", "land surveying" or any modification or derivative thereof in your name or in connection with your business or activities in Louisiana. Licensees whose licenses are in "Retired", "Inactive", or "Expired" status are prohibited from engaging in the activities described above in items (a) and (b).

LA R. S. 37:689 requires firms practicing or offering to practice engineering or land surveying in the state of Louisiana to be licensed by the Board prior to offering such services.

Transportation Professional Certification Board, Inc.

certifies that

Ari Jacob Deitch

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

Road Safety Professional

unless withdrawn by the Certification Board and subject to the provisions for renewal.
Certificate number 37 issued in Washington, DC, USA

12/21/2018

Diane W. Morabito
Chair

ROAD SAFETY PROFESSIONAL

Jeffrey F. Paniati
Executive Director

Certificate of Completion

presented to

Ari Deitch

for completing the

Traffic Engineering Analysis Process & Report
Module 1

Date: July 16, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 2

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Ari Deitch

for completing the

Traffic Engineering Analysis Process & Report
Module 2

Date: July 23, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Ari Deitch

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: October 15, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Transportation Professional Certification Board, Inc.

certifies that

Jose Manuel Rodriguez

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

Road Safety Professional

unless withdrawn by the Certification Board and subject to the provisions for renewal.
Certificate number 160 issued in Washington, DC, USA

12/21/2018

Diane L. Morabito
Diane Morabito
Chair

ROAD SAFETY PROFESSIONAL

Jeffrey F. Paniati
Jeffrey F. Paniati
Executive Director

Certificate of Attendance

Jose M Rodriguez

has participated in the online webinar

Seeing the Value: Using CMFs to Calculate the Benefits of Safety Improvements

conducted by:

CRASH MODIFICATION FACTORS CLEARINGHOUSE

Date: **Dec. 6, 2016**

Hours of instruction: **1.5**

Daniel Carter, CMF Clearinghouse manager

Training Coordinator / Instructor

Certificate of Completion

presented to

Jose M. Rodriguez

for completing the

Traffic Engineering Analysis Process & Report
Module 1

Date: January 29, 2020
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 2.5

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Jose M. Rodriguez

for completing the

Traffic Engineering Analysis Process & Report
Module 2

Date: January 29, 2020
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3.5

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Jose M. Rodriguez

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: January 30, 2020
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3.5

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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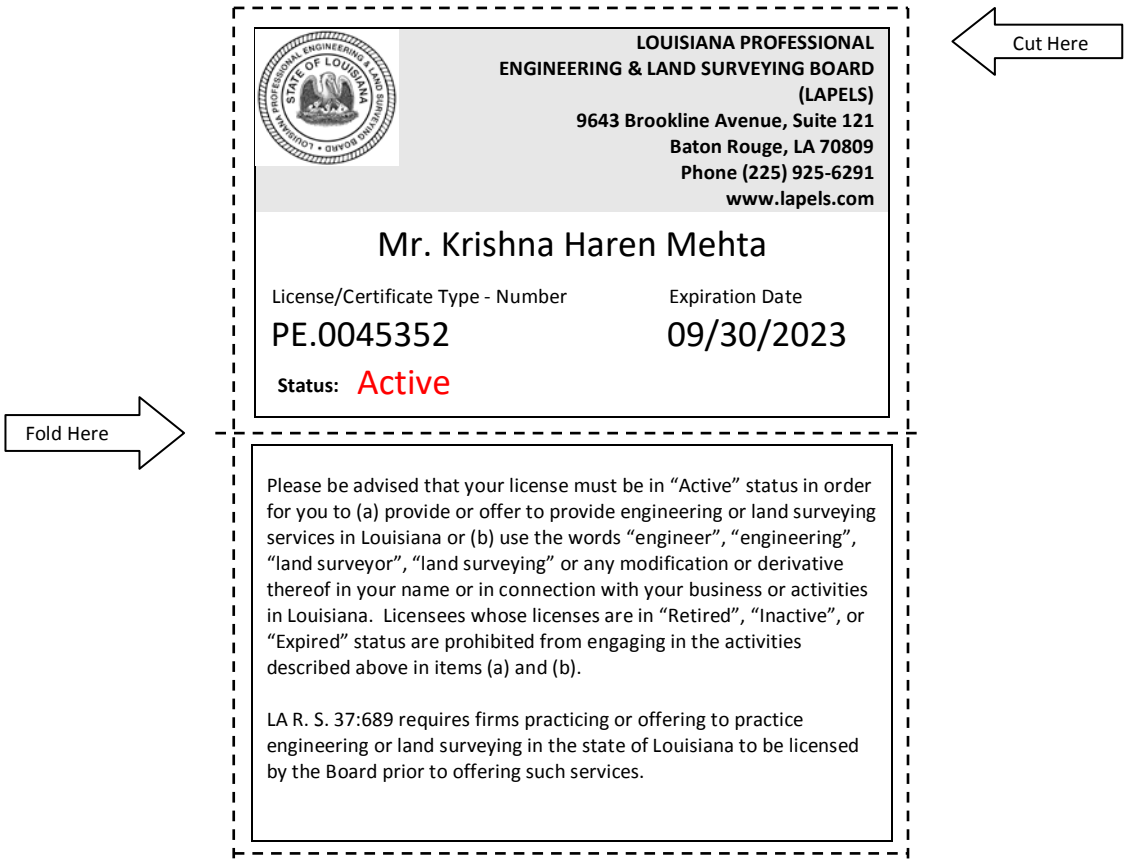

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U.S. Department of Transportation

Federal Highway Administration

National Highway Institute

national highway institute

Certificate of Training

Krishna H. Mehta

has participated in

FHWA-NHI-130056 Safety Inspection of In-Service Bridges for Professional Engineers

hosted by

CHA Consulting, Inc.

Date: *January 24-28, 2022*

Location: *Colonie, NY*

Hours of Instruction: 34

Instructor

Instructor

Local Coordinator

Thomas Harman, Director
National Highway Institute

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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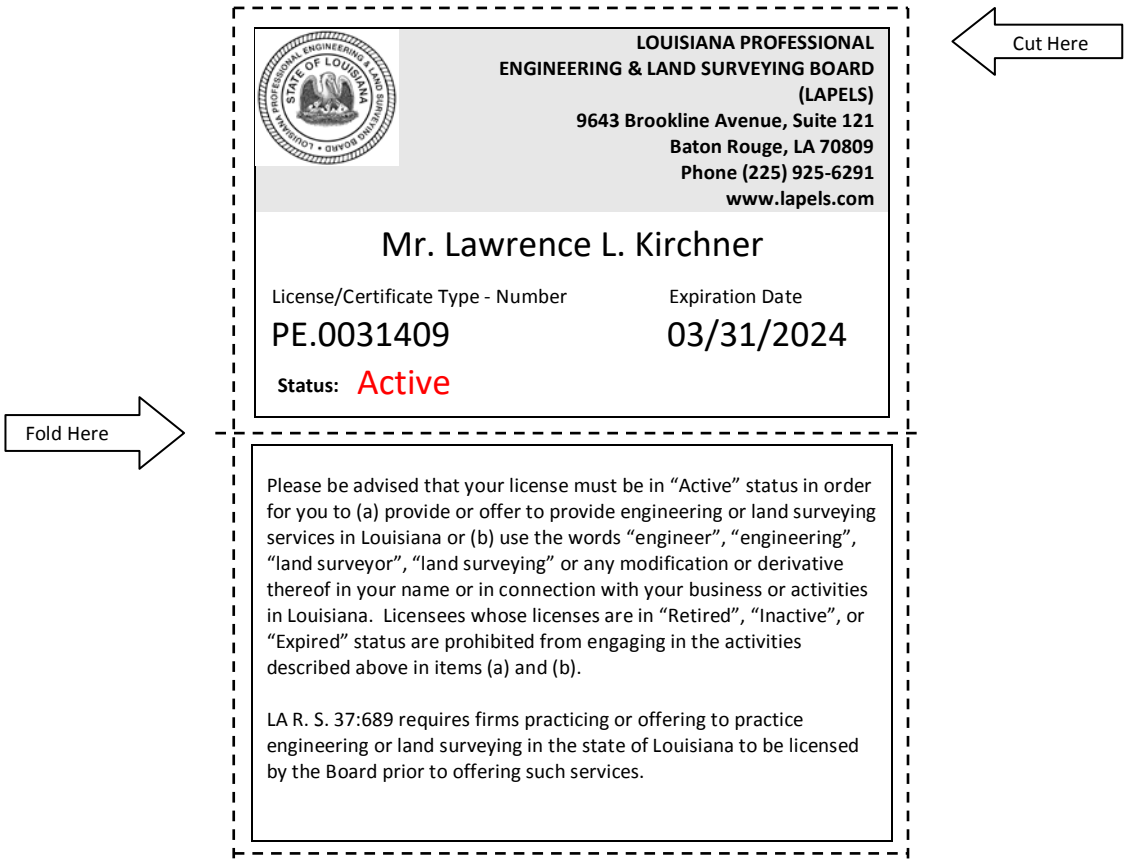

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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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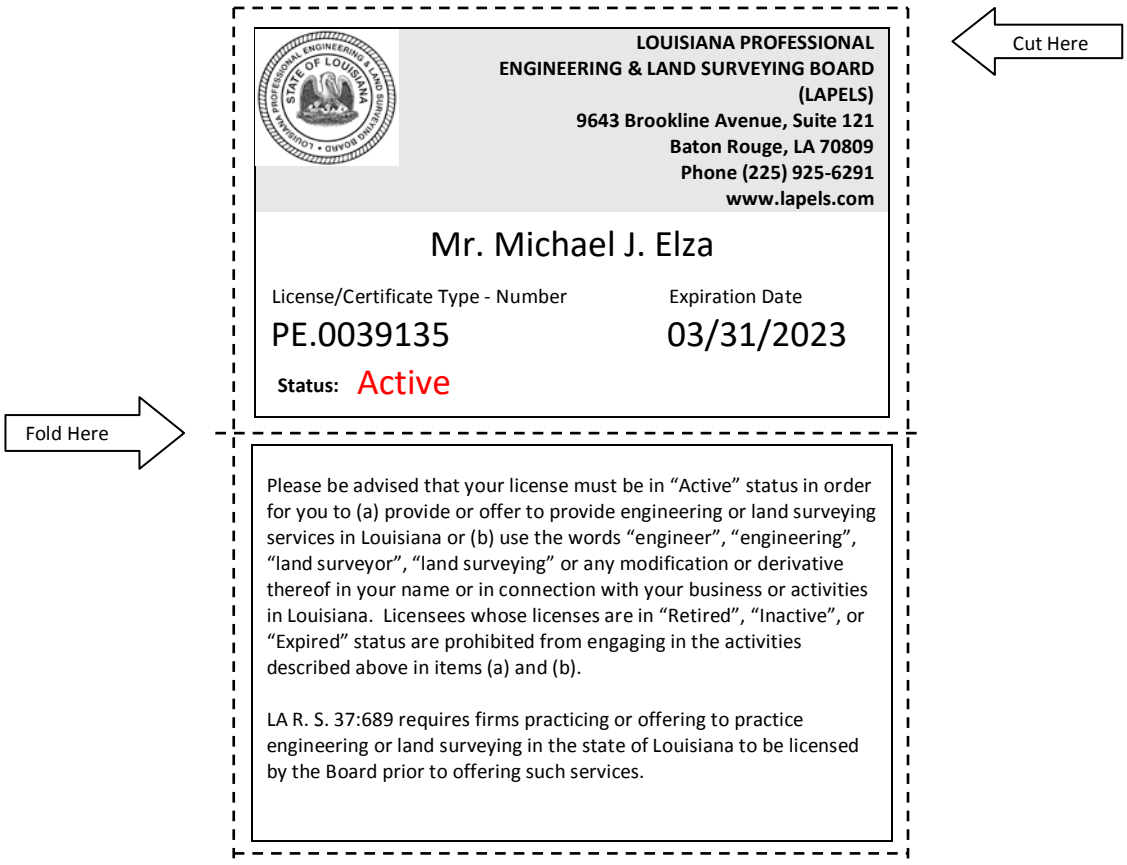

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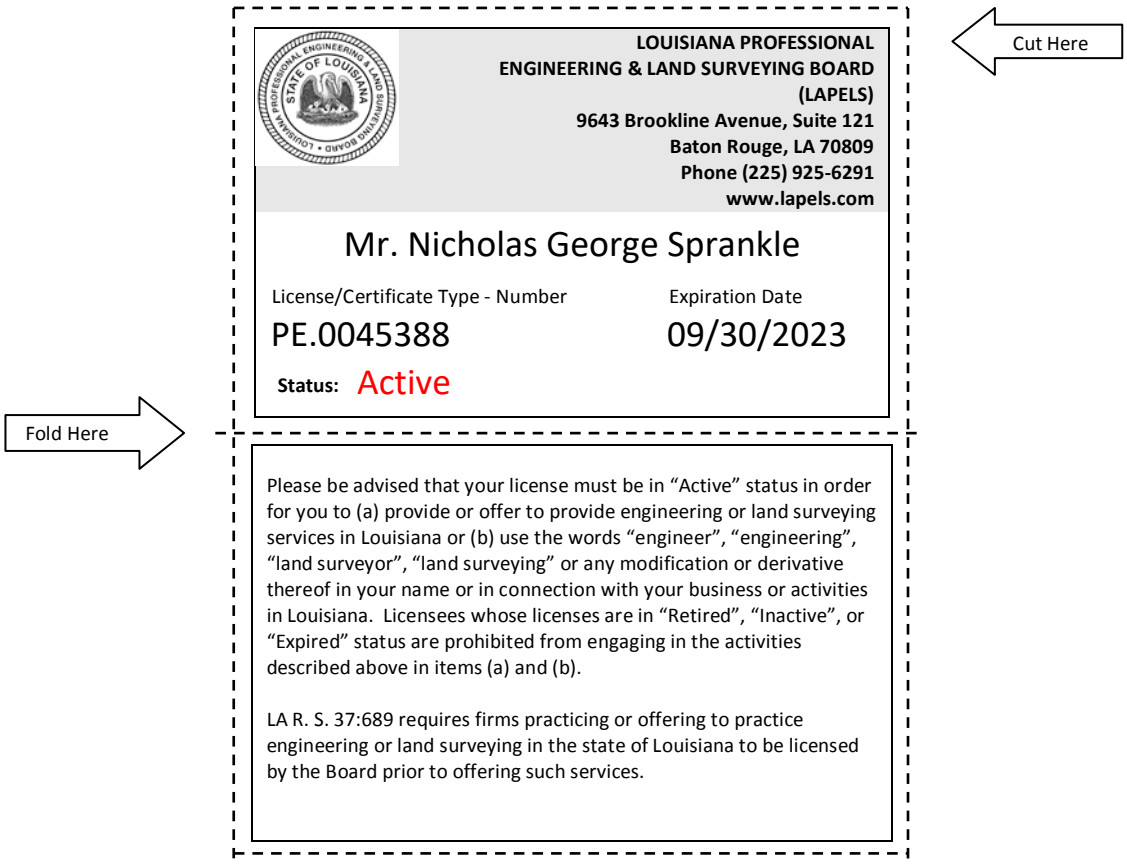
LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/3/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:



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U.S. Department of Transportation

Federal Highway Administration

National Highway Institute

nhi national highway institute

Certificate of Training

Nicholas Sprankle

has participated in

FHWA-NHI-130056 Safety Inspection of In-Service Bridges for Professional Engineers

hosted by

CHA Consulting, Inc.

Date: *January 24-28, 2022*

Location: *Colonie, NY*

Hours of Instruction: 34

Randall, P.E.

Instructor

C M Cook

Instructor

Ryan Cooley

Local Coordinator

Thomas Harman

Thomas Harman, Director
National Highway Institute

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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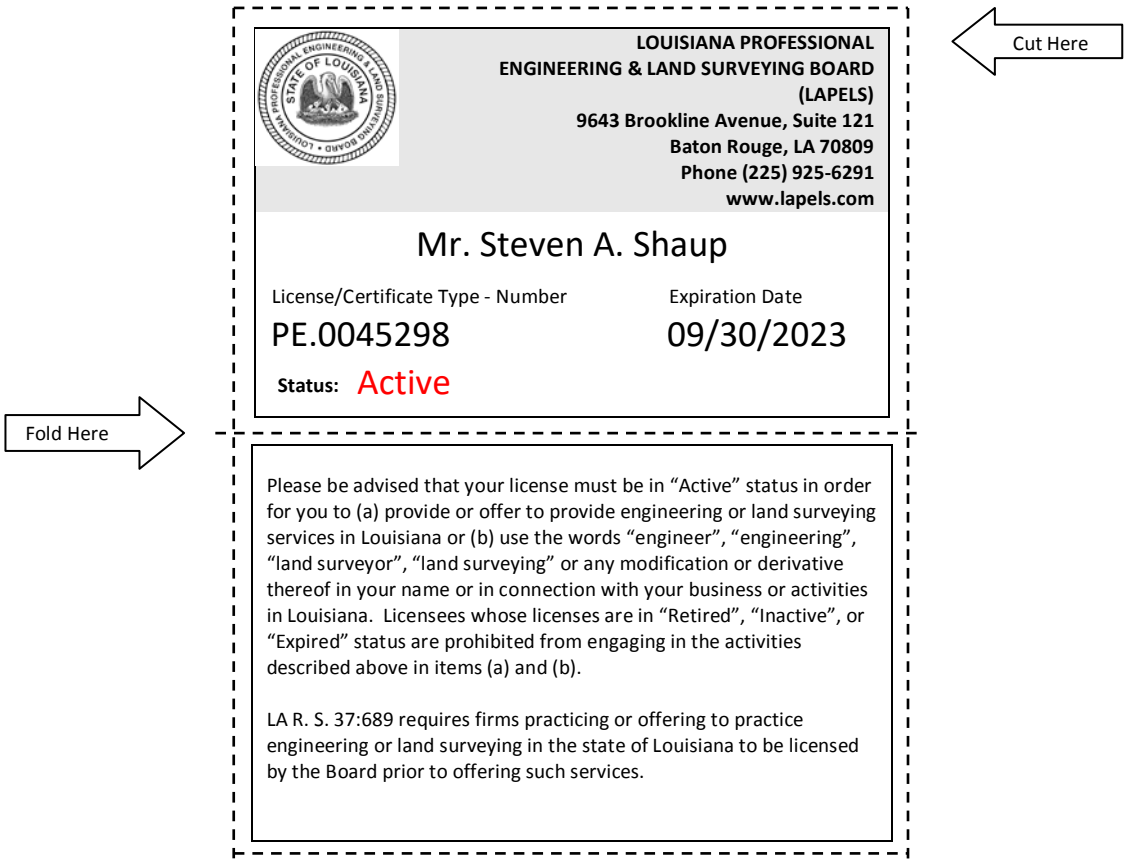

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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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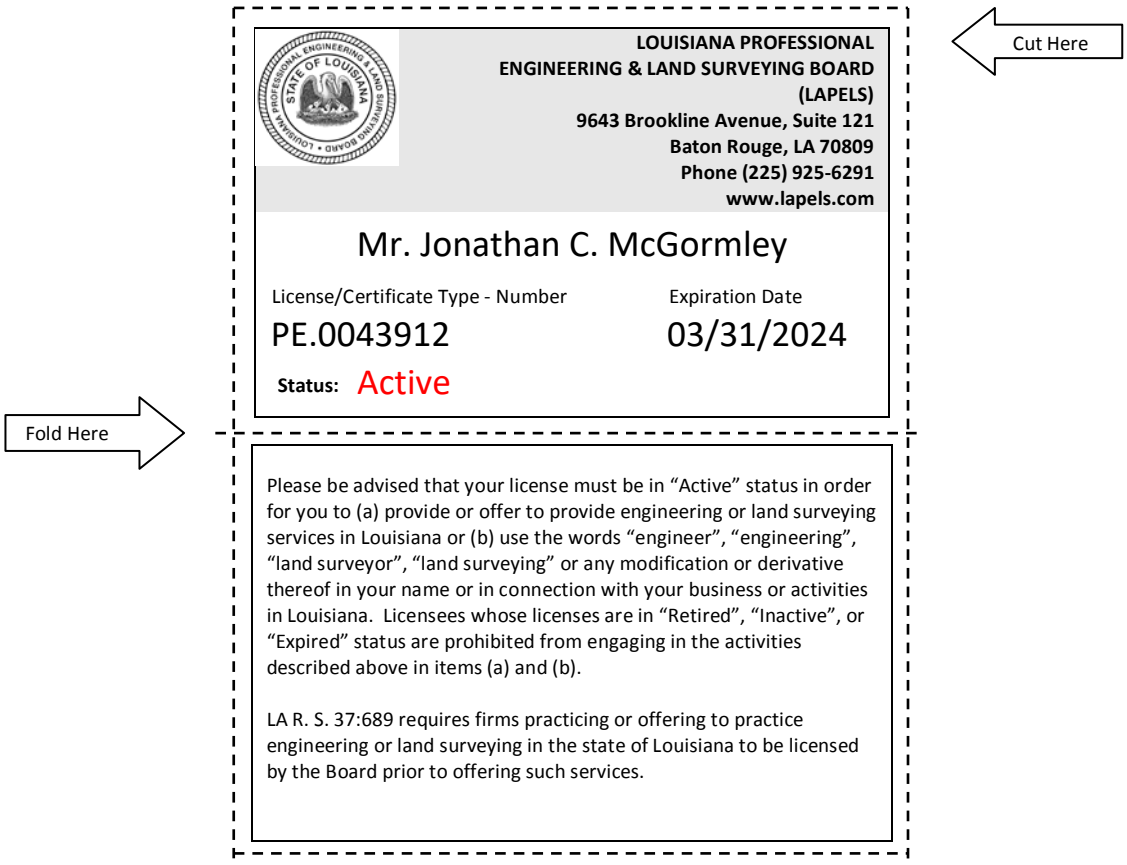

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National Highway Institute

Certificate of Training

Jonathan C. McGormley

has participated in

FHWA-NHI-130053 Bridge Inspection Refresher Training

hosted by

Boston Society of Civil Engineers Section/ASCE

Date: October 1-3, 2019
Location: Boston, MA

Hours of Instruction: 18

Instructor

Instructor

Local Coordinator

Michael Davis, P.E.
Director, National Highway Institute

National Highway Institute

Certificate of Training

Jonathan McGormley

has participated in

NHI-FHWA-130078-Fracture Critical Inspection Techniques for Steel Bridges

hosted by

Wiss, Janney, Elstner Associates, Inc.

Date: November 5 - 7, 2013
Location: Northbrook, Illinois

Hours of Instruction: 21 Hours

Instructor

Instructor

Local Coordinator

Richard Barnaby, Director
National Highway Institute

National Highway Institute

Certificate of Training

Jonathan McGormley

has participated in

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

hosted by

Parsons Brinckerhoff | Chicago Transit Authority

Date: August 10-21, 2009
Location: Chicago, IL

Hours of Instruction: 60

Instructor

Instructor

Local Coordinator

Richard Barnaby, Director
National Highway Institute

ATSSA TRAINED

PROOF OF TRAINING

THIS CERTIFICATE HEREBY RECOGNIZES THAT

Jonathan McGormley
has attended
Traffic Control Technician-LA State Specific
Training Course

5/11/2021 to 5/11/2025
Training Valid Through

Director of Training

Baton Rouge, LA
Location

President, CEO

ATSSA provides training and certification but neither constitutes employment by ATSSA.

American Traffic Safety Services Association ATSSA.com

ATSSA TRAINED

PROOF OF TRAINING

THIS CERTIFICATE HEREBY RECOGNIZES THAT

Jonathan McGormley
has attended
Traffic Control Supervisor-LA State Specific
Training Course

5/12/2021 to 5/13/2025
Training Valid Through

Director of Training

Baton Rouge, LA
Location

President, CEO

ATSSA provides training and certification but neither constitutes employment by ATSSA.

American Traffic Safety Services Association ATSSA.com

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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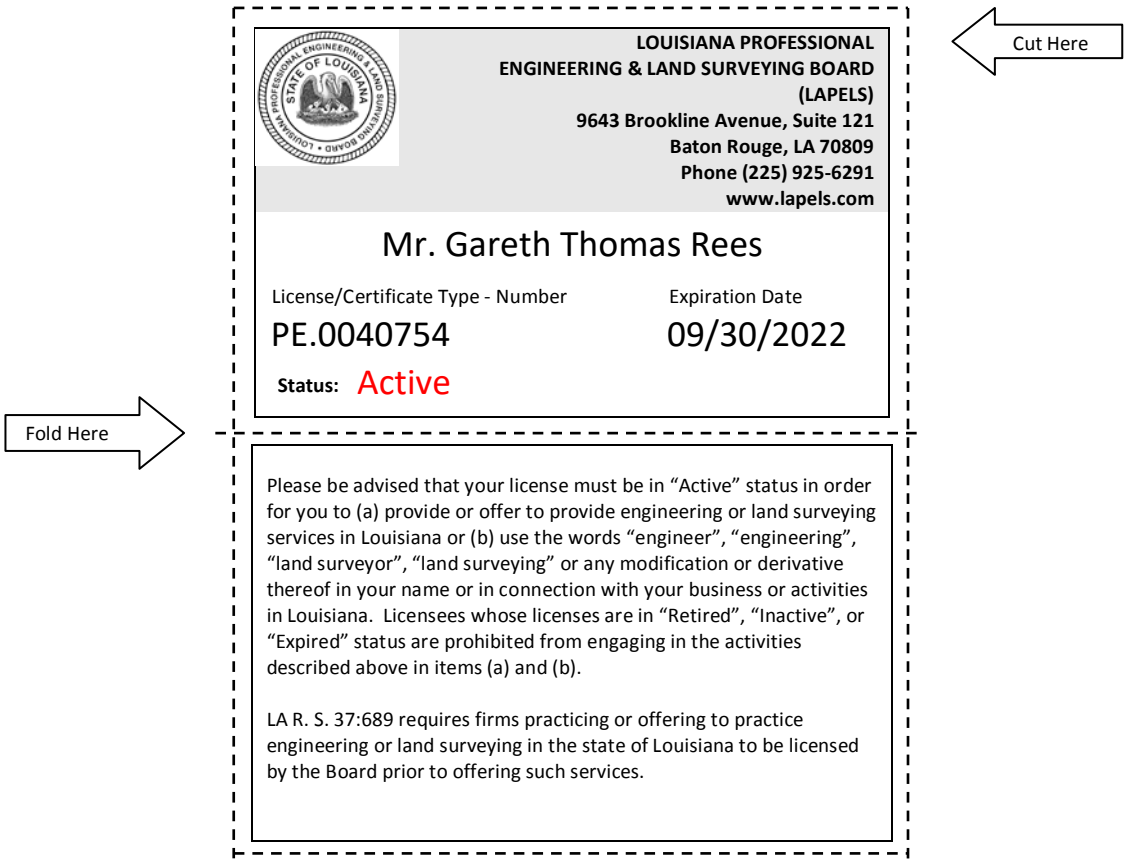

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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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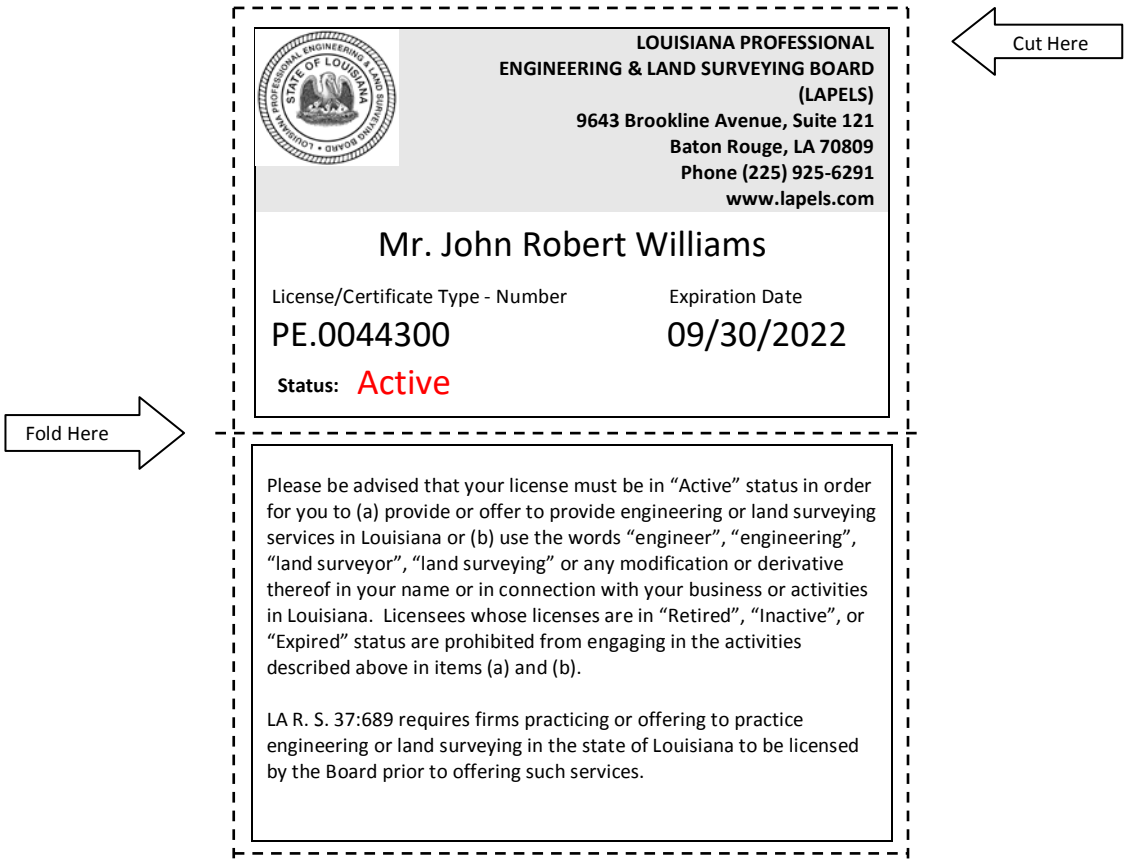

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National Highway Institute

Certificate of Training

Curtis J. Schroeder

has participated in

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

hosted by

HQ Installation Management Command

Date: *9-20 July 2012*
Location: *Fort Leonard Wood, MO*

Hours of Instruction: 60

Instructor
Instructor

Local Coordinator

Richard Barnaby, Director
National Highway Institute

National Highway Institute

Certificate of Training

Curtis J. Schroeder, PE

has participated in

FHWA-NHI-130053 Bridge Inspection Refresher Training

hosted by

ASCE SEI-IL

Date: *June 04-06, 2019*
Location: *Chicago, IL*

Hours of Instruction: 18

Instructor
Instructor

Local Coordinator

Michael Davies, Director
National Highway Institute

National Highway Institute

Certificate of Training

Curtis Schroeder

has participated in

FHWA-NHI 130078 Fracture Critical Inspection Techniques for Steel Bridges

hosted by

Bi-State Development Agency

Date: February 18-21, 2020
Location: St. Louis, MO

Hours of Instruction: 25

Instructor
Instructor

Local Coordinator

Michael Davies, P.E.
Director, National Highway Institute

This card certifies that

Leonard Phelps, PCS

has fulfilled the examination and experience requirements of the SSPC Protective Coatings Specialist Program (PCS)

SSPC President

Certified: 12-14-2021
Expires: 12/31/2025
Certification ID#: 2021-014-012

SSPC Protective Coatings Specialist

For recertification information, please contact:

The Society For Protective Coatings

800 Trumbull Drive
Pittsburgh, PA
15205

412-281-2331
877-281-7772
www.SSPC.org

The Society For Protective Coatings

Certifies that

Leonard Phelps, PCS

Has fulfilled the requirements of SSPC for recognition as a

PROTECTIVE COATINGS SPECIALIST

Valid Through December 31, 2025

2021-014-012
Certification Number

December 14, 2021
Original Date Issued

President

National Highway Institute

Certificate of Training

Steve Lauer

has participated in

FHWA – NHI - COURSE 130055

Safety Inspection of In-Service Bridges

hosted by

Structural Engineers Assn. of Illinois/SEI – IL Chapter

Date: *May 2-13, 2011*
Location: *Chicago, IL*

Hours of Instruction: 60

Instructor

Instructor

Local Coordinator

Richard Barnaby, Director
National Highway Institute

National Highway Institute

Certificate of Training

Steven Lauer

has participated in

FHWA-NHI-130053 Bridge Inspection Refresher Training

hosted by

Indiana Department of Transportation

Date: December 1-4, 2020
Location: Virtual Delivery, MI

Hours of Instruction: 18

Instructor

Instructor

William Dittrich

Local Coordinator

Thomas Harman

Thomas Harman, Director
National Highway Institute

National Highway Institute

Certificate of Training

Steve Lauer

has participated in

NHI-FHWA-130078-Fracture Critical Inspection Techniques for Steel Bridges

hosted by

Wiss, Janney, Elstner Associates, Inc.

Date: *November 5 - 7, 2013*
Location: *Northbrook, Illinois*

Hours of Instruction: *21 Hours*

Instructor

Instructor

Local Coordinator

Richard Barnaby, Director
National Highway Institute

LOUISIANA UNIFIED CERTIFICATION PROGRAM

Disadvantaged Business Enterprise Program (DBE)

Small Business Element (SBE)

This is to certify that under Title 49, Part 26 of the Code of Federal Regulations & under the State of Louisiana United Certification Program (LAUCP)

Rahman and Associates, Inc.

Is a Certified Disadvantaged Business Enterprise (DBE) & Small Business Element (SBE) in the following specialties:

NC541330, NC541340

NOTE: There may be other approved NAICS Codes. The online DBE Directory includes a complete list of approved codes.

Certificate Eligibility: March 2022 to March 2023

This certificate is valid through the above date provided. This firm meets the on-going programmatic standard and fulfills the annual update requirement to remain in good standing as a DBE. This certification is subject to annual verification and suspension or revocation based upon reasonable cause to believe that the firm is ineligible.

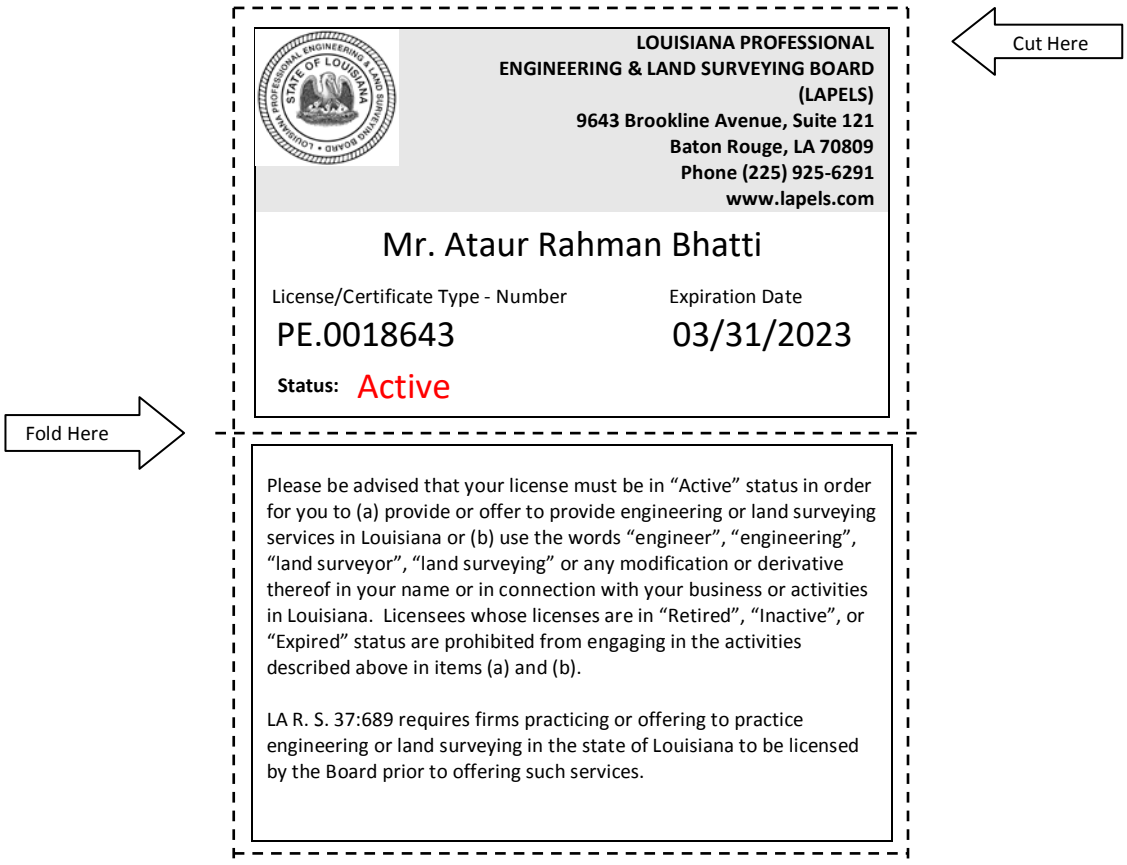
Rhonda Wallace

Rhonda Wallace, DBE/SBE Programs Manager

Louisiana Department of Transportation & Development

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 12/06/2018 , the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:



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LOUISIANA UNIFIED CERTIFICATION PROGRAM

Disadvantaged Business Enterprise Program (DBE)

Small Business Element (SBE)

This is to certify that under Title 49, Part 26 of the Code of Federal Regulations & under the State of Louisiana United Certification Program (LAUCP)

Civil Design & Construction, Inc.

Is a Certified Disadvantaged Business Enterprise (DBE) & Small Business Element (SBE) in the following specialties:

NC541330, NC541340, NC541350, NC541370

NOTE: There may be other approved NAICS Codes. The online DBE Directory includes a complete list of approved codes.

Certificate Eligibility: March 2022 to March 2023

This certificate is valid through the above date provided. This firm meets the on-going programmatic standard and fulfills the annual update requirement to remain in good standing as a DBE. This certification is subject to annual verification and suspension or revocation based upon reasonable cause to believe that the firm is ineligible.

Rhonda Wallace

Rhonda Wallace, DBE/SBE Programs Manager

Louisiana Department of Transportation & Development

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/6/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Cut Here

LOUISIANA PROFESSIONAL ENGINEERING & LAND SURVEYING BOARD (LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
www.lapels.com

Mr. Ralph D. Burgess

License/Certificate Type - Number
PLS.0005040

Expiration Date
09/30/2022

Status: Active

Fold Here

Please be advised that your license must be in "Active" status in order for you to (a) provide or offer to provide engineering or land surveying services in Louisiana or (b) use the words "engineer", "engineering", "land surveyor", "land surveying" or any modification or derivative thereof in your name or in connection with your business or activities in Louisiana. Licensees whose licenses are in "Retired", "Inactive", or "Expired" status are prohibited from engaging in the activities described above in items (a) and (b).

LA R. S. 37:689 requires firms practicing or offering to practice engineering or land surveying in the state of Louisiana to be licensed by the Board prior to offering such services.

Print and keep the following information for your record or verification. The pocket card may also be printed on card stock or laminated to keep with you as license/certificate verification.

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Dear Certified Flagger:

Enclosed, please find your card signifying you as a Certified ATSSA Flagger. This card should be carried and presented to employers while performing work on our roadways. Please be aware that the card is not valid without a Photo I.D.

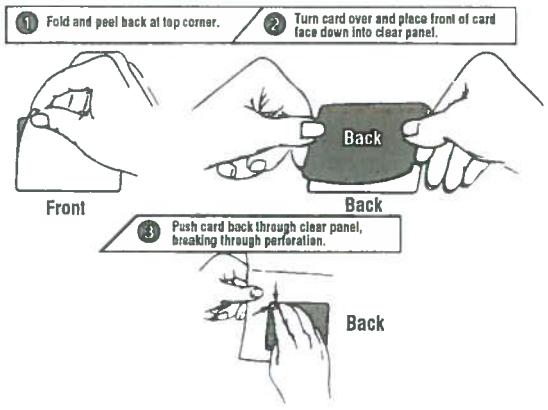
American Traffic Safety Services Association (ATSSA) commends you on your decision to become an ATSSA Certified Flagger. This distinction reflects that you have been trained by the "Leader in Roadway Safety" and also entitles you to be listed on our National Flagger Database. Please review your state requirements for expiration of your flagger card. Also, please inform us of any changes in name or address so we may keep our records up to date.

Once again, ATSSA thanks you for your dedication to ensuring that our work zones are safe and that lives will be saved with proper training. Please visit our website at www.atssa.com for additional training courses or for any of our products created for use in a work zone.

Sincerely,

Director of Training

Laminating the front of your card with Dual Laminate:



The American Traffic Safety Services Association

Hereby recognizes that

Ralph D Burgess

has attended

Traffic Control Supervisor Refresher-LA State Specific

Training Course

2/8/2019 to 2/8/2019
Date

Baton Rouge, LA
Location

ATSSA
SAFER ROADS SAVE LIVES

Training & Products Dept. Director

President, CEO

The American Traffic Safety Services Association

Hereby recognizes that

Ralph Burgess

has attended

Traffic Control Supervisor-LA State Spec

Training Course

10/16/2014
Date

Baton Rouge, LA
Location

ATSSA
SAFER ROADS SAVE LIVES

Donna M. Clark
Training & Products Dept. Director

Ryn A. Wentz
President, CEO

The American Traffic Safety Services Association

Hereby recognizes that

Ralph Burgess

has attended

Traffic Control Technician-LA State Specific

Training Course

10/14/2014
Date

Baton Rouge, LA
Location

ATSSA
SAFER ROADS SAVE LIVES

Donna M. Clark
Training & Products Dept. Director

Ryn A. Wentz
President, CEO


ATSSA
SAFER ROADS SAVE LIVES
AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION
SLOW
This is to affirm that
TRAVIS Bodin
has satisfied the requirements
to be designated as a
CERTIFIED FLAGGER
Expiration Date 9/28/22
State Issued In LA
Instructor Signature
Verification available by calling 1-877-642-4637 or at http://www.flagger.com


The American Traffic Safety Services Association
Hereby recognizes that
Travis Bodin
has attended
Traffic Control Supervisor Refresher-LA State Specific
Training Course
09/28/2018 to 09/28/2018
Date
Lafayette, LA
Location
ATSSA
SAFER ROADS SAVE LIVES
Training & Products Dept. Director
President, CEO


ATSSA
SAFER ROADS SAVE LIVES
AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION
SLOW
This is to affirm that
JUSTIN BORDELON
has satisfied the requirements
to be designated as a
CERTIFIED FLAGGER
Expiration Date 9/28/22
State Issued in LA
Instructor Signature
Verification available by calling 1-877-642-4637 or at http://www.flagger.com


The American Traffic Safety Services Association
Hereby recognizes that
Justin Bordelon
has attended
Traffic Control Supervisor Refresher-LA State Specific
Training Course
09/28/2018 to 09/28/2018
Date
Lafayette, LA
Location
ATSSA
SAFER ROADS SAVE LIVES
Training & Products Dept. Director
President, CEO

LOUISIANA UNIFIED CERTIFICATION PROGRAM

Disadvantaged Business Enterprise Program (DBE)

Small Business Element (SBE)

This is to certify that under Title 49, Part 26 of the Code of Federal Regulations & under the State of Louisiana United Certification Program (LAUCP)

APS Engineering & Testing, LLC.

Is a Certified Disadvantaged Business Enterprise (DBE) & Small Business Element (SBE) in the following specialties:

NC221310, NC221320, NC541330, NC541370, NC541380, NC541620, NC541690

NOTE: There may be other approved NAICS Codes. The online DBE Directory includes a complete list of approved codes.

Certificate Eligibility: October 2021 to October 2022

This certificate is valid through the above date provided. This firm meets the on-going programmatic standard and fulfills the annual update requirement to remain in good standing as a DBE. This certification is subject to annual verification and suspension or revocation based upon reasonable cause to believe that the firm is ineligible.

Rhonda Wallace

Rhonda Wallace, DBE/SBE Programs Manager

Louisiana Department of Transportation & Development

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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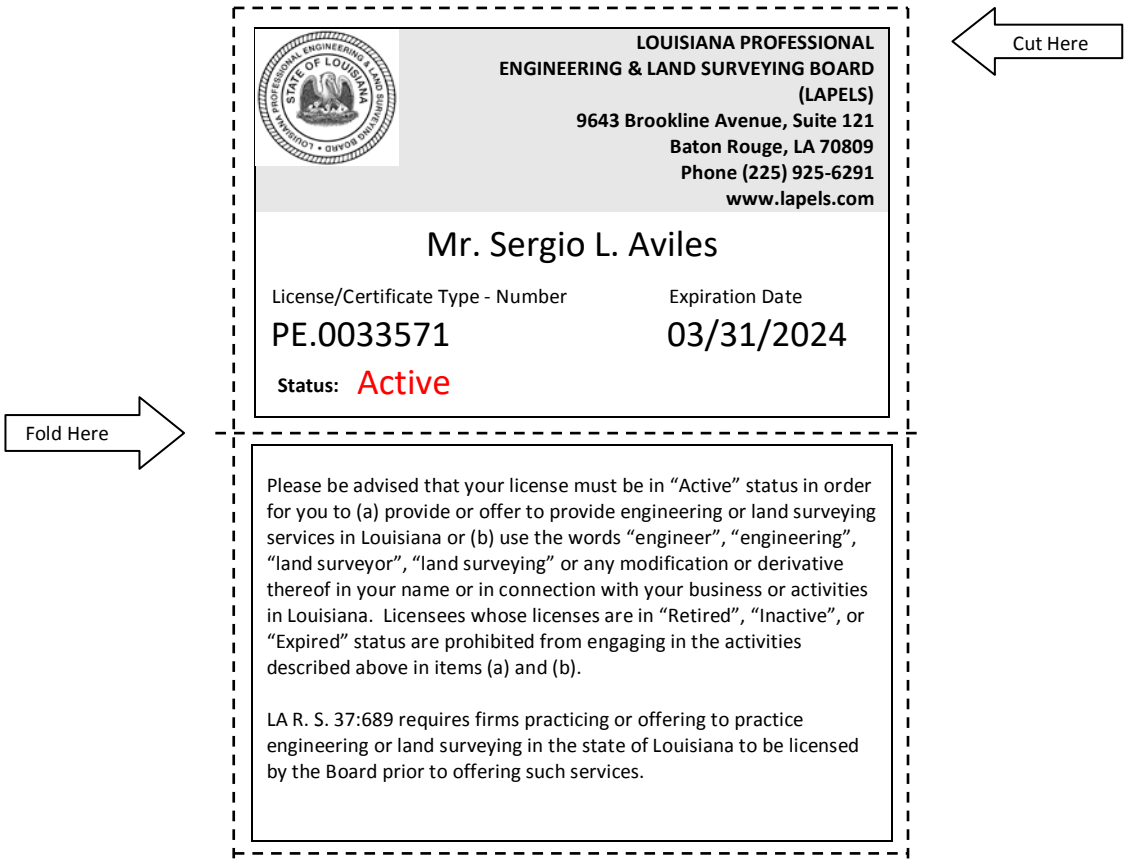

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LOUISIANA ASSOCIATED GENERAL CONTRACTORS, INC.
666 North Street – Baton Rouge, LA 70802
Phone: 225/344-0432 * Fax: 225/344-0458
www.lagc.org

January 7, 2019

To Whom It May Concern,

This is to verify that the below listed employee of APS Engineering & Testing has completed LADOTD required ATSSA traffic control training. We are currently awaiting the results of his exam.

LA Specific Traffic Control Supervisor Refresher – December 7, 2018 – Sergio Aviles

If there are any questions regarding this issue, please contact Mr. Barry Lacy, P.E. of LADOTD at Headquarters in Baton Rouge, LA (225-379-1584) or Michael Demouy at the above captioned address.

Best Regards,

Michael Demouy – LAGC Manager

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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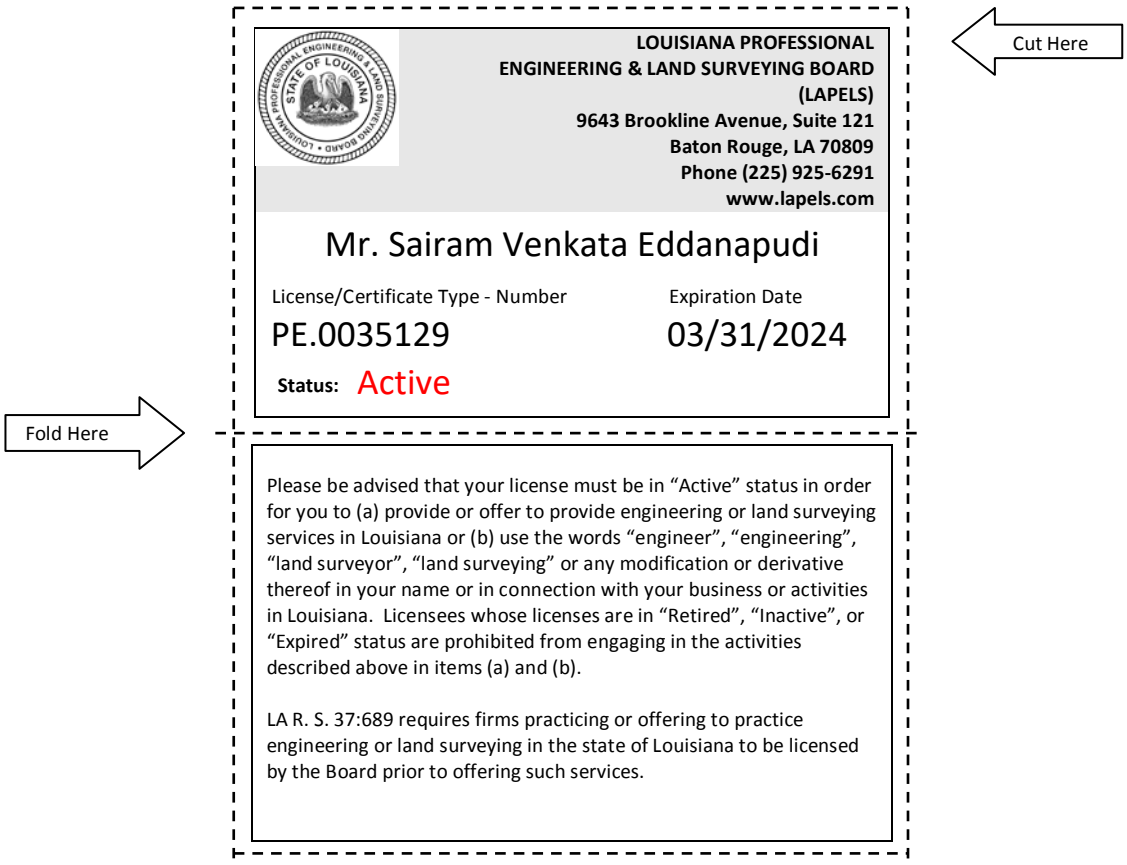

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The American Traffic Safety Services Association

Hereby recognizes that

Sairam Eddanapudi

has attended

Traffic Control Technician-LA State Specific

Training Course

2/5/2019 to 2/5/2019
Date

Baton Rouge, LA
Location

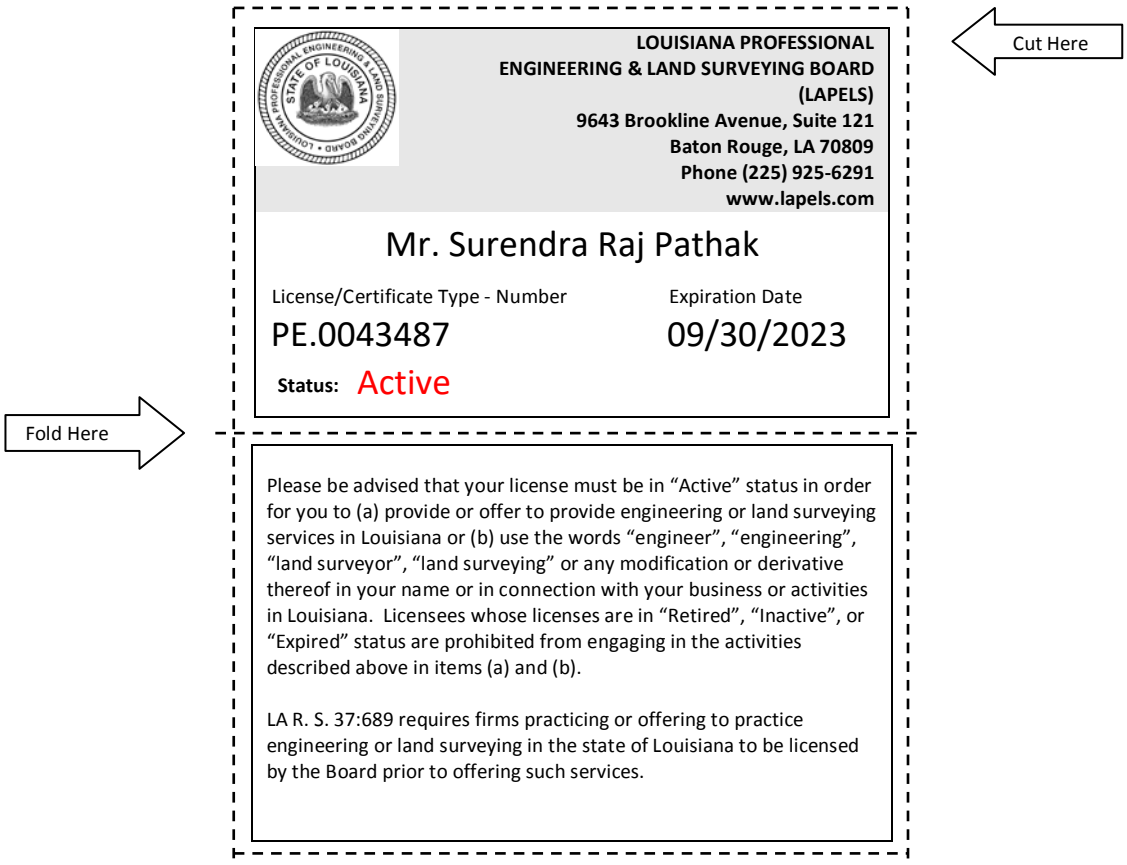
ATSSA
SAFER ROADS SAVE LIVES

Training & Products Dept. Director

President, CEO

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/6/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:



Print and keep the following information for your record or verification. The pocket card may also be printed on card stock or laminated to keep with you as license/certificate verification.

Disclaimer

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The American Traffic Safety Services Association

Hereby recognizes that

Surendra Pathak

has attended

Traffic Control Technician-LA State Specific

Training Course

2/5/2019 to 2/5/2019
Date

Baton Rouge, LA
Location

ATSSA
SAFER ROADS SAVE LIVES

Jessica Naughton
Training & Products Dept. Director

Ryan A. Wentz
President, CEO

QUALITY ASSURANCE / QUALITY CONTROL

IDIQ CONTRACTS FOR BRIDGE PRESERVATION STATEWIDE

Contract No. 4400023921, 4400023922, 4400023923, 4400024185, 4400024186, 4400024187, 4400024188, AND 4400024189

Statewide

,

TABLE OF CONTENTS

1. Introduction 1
2. Design Criteria 2
3. Design Team 3
4. Preliminary and Final Bridge Plans Development 3
5. QC Team 4
6. QC Review 4
7. QA Information Package 6
8. QA Process 6
9. QA/QC Certificate 6
10. Archiving Design Files 6
11. Reference Material 6
12. Software 7
13. Deliverables 7

1. Introduction

Project Description

This Quality Control Plan (QCP) outlines our approach to quality deliverables for the specific services of Statewide Bridge Preservation indefinite delivery/ indefinite quantity (IDIQ) contract. Arcadis U.S., Inc. will be the prime consultant for the project. The QCP has been prepared in accordance with LADOTD Bridge Design and Evaluation Manual (BDEM); Part I – Policies and Procedures; Chapter 3 – Policy for Quality Assurance and Quality Control (formerly Bridge Design Technical Memorandum No. 37 (BDTM.37)).

The Team

Company	Lead
Arcadis	Bridge Design, Bridge Inspection Roadway Design, Traffic, Environmental & permitting
TranSystems	Movable bridge inspection & design, mechanical and electrical
Rahman & Associates (DBE/SBE)	Bridge design & inspection
WJE	Sampling, instrumentation, NDT, mechanical, & electric inspection/design
CD&C (DBE/SBE)	Surveying and Title Work Services
Fenstermaker	Underwater acoustical imaging including both multi-beam and side scan hydrographic surveys
APS (DBE/SBE)	Geotechnical

As the prime, Arcadis will be fully responsible for overall QA/QC of the project. The key team members and roles are described below, but listed here for easy reference:

Title/Role	Name	Company
Project Manager	Osama Shahawy, PE	Arcadis
Bridge Design Lead	Osama Shahawy, PE	Arcadis
Roadway Design Lead	Jose L. Rodriguez, PE	Arcadis
Traffic Lead	Ari Deitch, PE	Arcadis
Environmental Lead	Jason Morrell, PE, PWS	Arcadis
Peer Review	Kristen Kasmire, PE	Arcadis
Peer Review	Llyod “Buddy” Porta, Jr, PE	Arcadis
Peer Review	Lawrence Kichner, PE	TranSystems
Peer Review	Ataur Rahman Bhatti, PE	Rahman & Associates (DBE/SBE)
Peer Review	Jonathan McGormley, PE	WJE

Staff qualifications for QA/QC roles and qualification information for team support staff are described in the 24-102 form for this proposal.

Project Team Communications/Coordination. As Project Manager, Mr. Osama Shahawy will be the team's administrative and technical point of contact for the LADOTD. All team communications to LADOTD will be through Mr. Shahawy or his designee on a case-by-case basis or as requested by LADOTD.

The details of the QA/QC plan described below apply to the current project based on the scope of services requested. The overall QA/QC plan shall be amended in case additional services are added to the contract through amendments or extensions.

2. Design Criteria

The design criteria and the project objectives will be discussed in the Consultant Kick-Off Meeting. For each Task order. The design criteria will be created in accordance with the latest versions of the following documents:

AASHTO

- AASHTO Standards – The American Association of State Highway Transportation Officials
- AASHTO – A Policy on Geometric Design of Highways and Streets
- AASHTO – LRFD Bridge Design Specifications
- AASHTO – LRFD Moveable Highway Bridge Design Specifications
- AASHTO – Manual for Bridge Evaluation
- AASHTO – Manual for Maintenance Inspection for Bridges
- AASHTO – Roadside Design Guide
- AASHTO – Standard Specifications for Structural Supports of Highway Signs, Luminaires, and Traffic Signals

AREMA

- AREMA – Manual for Railway Engineering
- ASTM Standards

Louisiana Department of Transportation and Development

- DOTD – "A Guide to Constructing, Operating, and Maintaining Highway Lighting Systems"
- DOTD – Bridge Design and Evaluation Manual (BDEM)
- DOTD – Bridge Design Technical Memoranda
- DOTD – Complete Streets
- DOTD – Construction Contract Administration Manual
- DOTD – Consultant Contract Services Manual
- DOTD – Guidelines for Bridge Rating and Evaluation
- DOTD – Hydraulics Manual
- DOTD – Location and Survey Manual
- DOTD – Addendum "A" to the Location & Survey Manual
- DOTD – Louisiana Standard Specifications for Roads and Bridges
- DOTD – Maintenance Directives
- DOTD – Materials Sampling Manual

- DOTD – Minimum Design Guidelines
- DOTD – Off-System Highway Bridge Program Guidelines
- DOTD – Roadway Design Procedures and Details Manual
- DOTD – Stage 1 Planning/Environmental Manual of Standard Practice
- DOTD – Testing Procedures Manual
- DOTD – Traffic Engineering Manual
- DOTD – Traffic Engineering Process and Report
- DOTD – Traffic Signal Manual –

FHWA

- FHWA – Bridge Inspector's Reference Manual (BIRM)
- FHWA – Inspection of Fracture Critical Bridge Members
- FHWA-IF-09-014 Load Rating Guidance and Examples for Bolted and Riveted Gusset Plates in Truss Bridges, February 2009
- FHWA – Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)
- e-CFR – Electronic Code of Federal Regulations (all applicable)
- CFR 23 National Bridge Inspection Standard –

NEPA

- NEPA – National Environmental Policy Act

3. Design Team

As project manager, **Mr. Osama Shahawy, PE** of Arcadis will be responsible for Quality Assurance, i.e., assuring that the QC Plan is implemented. He will also serve as the administrative and technical point of contact for the Arcadis team.

Mr. Osama Shahawy, PE of Arcadis will lead the structural design team bridge condition and replacement. Mr. Beasley's qualifications are clearly summarized in the attached 24-102 forms. He will be in charge of the preliminary and final design and cost estimation of the superstructure and substructure for the new bridge structures.

Mr. Jose L. Rodriguez, PE will lead the roadway design efforts for the project. He and his team are responsible for carrying out the roadway and geometric design. His credentials are also well highlighted in the relevant section of the 24-102 form.

The design teams mentioned above are responsible for the development of the plan & profile plans, preliminary and final design calculations, special provisions, and cost estimate for their respective disciplines. The designers are also required to follow the design criteria that will be developed for the project.

4. Preliminary and Final Bridge Plans Development

Before design efforts are initiated, detailed design criteria for roadway and bridge structures shall be proposed and approved by the LADOTD. Approval will be memorialized in a meeting/email or call record. Any changes to the design criteria will be reflected in a revised version of the design criteria that conforms with expectations in LADOTD Policy Appendix A. Any changes will be distributed to team members via the Project Manager. Calculations used in the design process will be maintained by the designer and be consistent with the LADOTD calculation book checklist in Appendix B of the LADOTD QA/QC Policy. Key

meeting decisions and communicated information will be memorialized in meeting records and shall be circulated via email to the design team.
Both the designer and detailer are responsible for conducting an initial self-check of their own work product. They and other support staff preparing work product will be required to affix their name at “prepared by” to denote responsibility on the Arcadis QA/QC Acknowledgement Form. (See Section 6 for example of form)

5. QC Team

Quality Control (QC) activities are those related to checking the accuracy and consistency of materials developed for the contract. The team of Arcadis and its sub-consultants is wholly responsible for all QC activities of team deliverables. LADOTD is not responsible for the quality of any contract deliverables.

Osama Shahawy, PE, as Project Manager, is responsible for allocating resources to various elements of the work, preparing and implementing the Quality Control Plan, scheduling the various activities, and adjusting the plans as the work progresses to resolve identified potential problem areas in a timely manner. The PM is responsible for maintaining records of all QC and QA reviews in the project files. Also, the PM is personally responsible for performing a final quality check of all work before it is submitted to LADOTD and ensuring that the procedures outlined in this document have been followed without exception. The PM will maintain communication with LADOTD to assure satisfaction with the project’s progress and performance.

Mrs. Kristen Kasmire, PE from Arcadis will lead the overall bridge QA/QC review & Peer review team. Mrs. Kristen will perform detailed review of the contract documents including plan sets, specifications etc. Their credentials are also highlighted in the relevant section of the 24-102 form.

Mr. Llyod “Buddy” Porta, Jr, PE from Arcadis will lead the overall roadway and traffic QA/QC review team. Mr. Porta will perform detailed review of the contract documents including plan sets, specifications etc. Their credentials are also highlighted in the relevant section of the 24-102 form.

6. QC Review

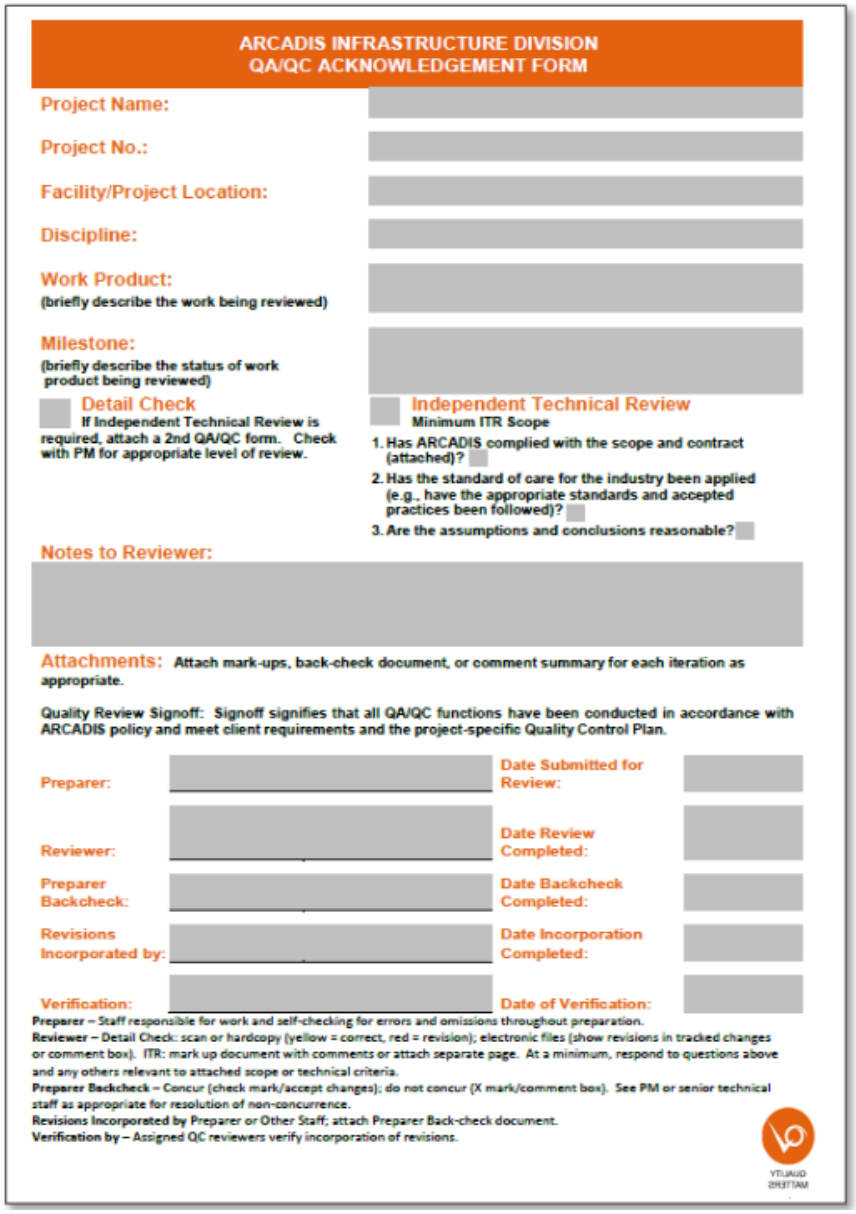
Based on Arcadis’ practice and established workflow on previous LADOTD projects, it is recommended that the review be initiated and completed at the end of each phase. Individual pieces of the design, carried out throughout the project, shall be subjected to QC review before being transmitted or presented before LADOTD. A color-coding procedure will be used on plan, calculations, and report work products for the purpose of documenting responsibility and completion of work checking, back checking, comment incorporation, and change verification. The Arcadis Infrastructure Bridge Group color codes will be implemented for this entire project, which is explained below:

Color Code	Action	Responsibility
Yellow Highlight	Item is Correct	Checker/reviewer
Red Pencil	Delete, Error and Correction, Addition, Comment	Checker/reviewer
Green Pencil	Has been resolved, (use check); additional changes	Designer
Blue Pencil	Resolution of error or comment addressed and corrected on original document	Checker/reviewer
Orange Highlight	Revision has been made	CADD/other

LADOTD checklists will be used by both the design and QC teams in the preparation and review of project design criteria, final calculations, and the QA Packet. Arcadis utilizes the use of a Quality Matters QA/QC Acknowledgement Form to document milestone reviews, which is used in combination with QC stamps providing lines for checker, author/designer resolution, and comment incorporation verification. This form will be extensively used at each QC review of individual design components involved in the project.

Proper QC procedures should minimize superseding calculations. However, any such calculations will be carefully coordinated by the Designer to ensure proper disposition. All such changes will be documented as appropriate on the Project Activity Log Sheet.

QUALITY MATTERS



ARCADIS INFRASTRUCTURE DIVISION
QA/QC ACKNOWLEDGEMENT FORM

Project Name:

Project No.:

Facility/Project Location:

Discipline:

Work Product:
(briefly describe the work being reviewed)

Milestone:
(briefly describe the status of work product being reviewed)

Detail Check
If Independent Technical Review is required, attach a 2nd QA/QC form. Check with PM for appropriate level of review.

Independent Technical Review
Minimum ITR Scope
1. Has ARCADIS complied with the scope and contract (attached)?
2. Has the standard of care for the industry been applied (e.g., have the appropriate standards and accepted practices been followed)?
3. Are the assumptions and conclusions reasonable?

Notes to Reviewer:

Attachments: Attach mark-ups, back-check document, or comment summary for each iteration as appropriate.

Quality Review Signoff: Signoff signifies that all QA/QC functions have been conducted in accordance with ARCADIS policy and meet client requirements and the project-specific Quality Control Plan.

Preparer:		Date Submitted for Review:	
Reviewer:		Date Review Completed:	
Preparer Backcheck:		Date Backcheck Completed:	
Revisions Incorporated by:		Date Incorporation Completed:	
Verification:		Date of Verification:	

Preparer – Staff responsible for work and self-checking for errors and omissions throughout preparation.
Reviewer – Detail Check: scan or hardcopy (yellow = correct, red = revision); electronic files (show revisions in tracked changes or comment box). ITR: mark up document with comments or attach separate page. At a minimum, respond to questions above and any others relevant to attached scope or technical criteria.
Preparer Backcheck – Concur (check mark/accept changes); do not concur (X mark/comment box). See PM or senior technical staff as appropriate for resolution of non-concurrence.
Revisions Incorporated by Preparer or Other Staff; attach Preparer Back-check document.
Verification by – Assigned QC reviewers verify incorporation of revisions.

Form used to document Arcadis milestone QC reviews.

7. QA Information Package

Upon satisfactory completion of the design and detail checks, the designer is required to prepare the QA Information Package utilizing the LADOTD approved checklist (Appendix C). This package includes the following items:

- QA information package checklist
- Calculation book
- Plans
- Special provisions including Non-Standard items
- Cost estimate
- Relevant documents, such as checklists, review comments, etc. that were used by the designer, design checker, detailer and detail checker

The designer is responsible for providing this package to the Reviewer for his further use prior to submittal milestones. Should there be any revisions to the plans or calculations after this submittal, the designer shall revise the QA Information. Package and inform the Reviewer of the changes and provide him with the revised information.

8. QA Process

Quality Assurance (QA) activities are those related to reviewing work to ensure QC procedures are in place and effective. Arcadis is wholly responsible for all QA activities of team deliverables. Project Manager Osama Shahawy, PE is ultimately responsible for ensuring that the QC Plan is implemented, and that the Reviewer has completed all steps of the review. LADOTD is not responsible for assuring that the QC Plan is implemented or for maintaining documentation of QC reviews and related information. The team of Arcadis and its sub-consultants is solely responsible for maintaining all administrative and technical files for project archives.

Mr. Shahawy will coordinate with the Reviewer as required and maintain a record of QC forms including the LADOTD required checklists, QA/QC certification, Arcadis review forms, and other relevant information. Once the project manager confirms that the Reviewer has completed the QA process, design documents including design calculations, plans, special provisions and cost estimate shall be considered as final.

9. QA/QC Certificate

At the completion of the QA process by the Reviewer, the QA/QC certificate (Appendix D of the LADOTD Policy) shall be signed by the designer, design checker, detailer, detail checker, and reviewer. This form will be included in the project central files maintained by the Project Manager.

10. Archiving Design Files

Mr. Osama Shahawy shall be responsible for transmitting all deliverables to the LADOTD. He will maintain all final deliverables' digital files on a USB thumb drive and ProjectWise. Paper copies of these materials will also be maintained by the Project Manager in the repository of project files and moved to off-site archives in accordance to LADOTD document retention policy and Arcadis' retention policies, as appropriate. Retained files will include final, approved deliverables, calculation books, plans, special provisions, cost estimate, and other pertinent documents in accordance with the Bridge Design Section records retention policy, as well as contract documentation, QA/QC records, correspondence, and other materials per Arcadis' records retention policy.

11. Reference Material

In addition to reference materials listed above under Design Criteria, Arcadis will use the followings:

- Arcadis Policy on Records Retention and Management

- Arcadis Infrastructure Division Quality Matters Program

12. Software

Computer based calculations will be completed only with use of the following list of pre-approved LADOTD Bridge Design Section software programs:

Developer	Software Name
AASHTO, Inc	AASHTOWare Bridge Design
AASHTO, Inc	AASHTOWare Bridge Rating
Bentley System, Inc	LEAP CONSPAN
Bentley System, Inc	MicroStation
Bentley System, Inc	Open Bridge Modeler
Bentley System, Inc	STAAD
Bentley System, Inc	RC-Pier
Bridge Systems Institute	FB-Pier
Computer and Structures, Inc.	CSICOL
L-Pile	Ensoft, Inc.
Finite Element Analysis, Ltd.	LUSAS
Power Inroads	Bentley
MDX Software, Inc	MDX

Should other software be needed during the course of the contract, needs will be identified at the earliest opportunity, and a synopsis of the software including its purpose, industry use, limitations and other germane information will be submitted to the State Bridge Design Engineer Administrator for consideration and approval for use.

13. Deliverables

A deliverables schedule will be developed at the Consultant Project Kick-Off Meeting in accordance with other actions listed in the Consultant Project Kick-Off Meeting Agenda Checklist (Appendix H) of the LADOTD Policy. This schedule will be reviewed regularly by the Project Manager, Mr. Osama Shahawy for opportunities to reduce activity durations and expedite delivery.

Deliverables schedules, quality reviews, financials, and other topics are addressed monthly between Arcadis Project Managers and Operations Managers in a Monthly Project Progress Review Meeting near monthly financial close period. An internal consultant QC milestone schedule will also be developed in association with this deliverable schedule. It will be maintained by the Project Manager for use by the consultant team for review scheduling. Deliverables will be internally reviewed for correctness and completeness prior to LADOTD submittal and be accompanied by a Consultant Submittal (QA/QC) Certification form (Appendix I of the LADOTD Policy).

APPENDICES

LADOTD POLICY ON QUALITY ASSURANCE AND QUALITY CONTROL

Design Criteria Checklist

(Appendix A of LADOTD Policy on Quality Assurance and Quality Control)

Design criteria for each project shall include, but not limited to, the following sections:

_____ Cover sheet

The following information must be included on the cover sheet:

- LADOTD project number
- Project name
- Revision date
- The Supervisor or Team Leader's signature and date

_____ Governing Design and Construction Specifications and Other References

A list of governing design and construction specifications and other references used for the project shall be included in this section. The edition number, interim revisions, and/or publication date must be specified for each reference.

_____ Design Assumptions and Design Exceptions

All design assumptions and design exceptions received must be included in this section along with supporting documents.

_____ General Information

The general information as listed below should be included in this section:

- Bridge information (no. of bridges, bridge clear width, length, no. of lanes, lane width, shoulder width, etc.)
- Road information (roadway classifications, design speed, traffic data, etc.)
- Vertical datum
- Vertical and horizontal clearances
- Other relevant information

_____ Hydraulic Design Criteria

All hydraulic design criteria (design year, design water elevations, scour depth and scour elevation, etc.) shall be included in this section and the information shall be provided by the Hydraulic Engineer.

_____ Design Factors

The ductility factor ŋD, redundancy factor ŋR, and operational importance factor ŋI shall be listed in this section.

_____ Design Loads

All design loads (dead load, live load, wind load, thermal loads, vessel collision loads, seismic load, wave loads, etc.) used for the project shall be included in this section.

_____ Limit States

All applicable limit states for this project shall be listed in this section.

_____ Bridge Barrier

The design criteria, types, and test levels for bridge barriers shall be listed in this section. Standard plans and special details should be listed if they are utilized.

_____ Guardrail

The design criteria, types, and test levels for guardrails shall be listed in this section. Standard plans and special details should be listed if they are utilized.

_____ Approach Slab

Design criteria for approach slab shall be included in this section. Standard plans and special details should be listed if they are utilized.

_____ Deck and Deck Drainage

All design criteria for deck and deck drainage design shall be included in this section. Standard plans and special details should be listed if they are utilized.

_____ Bearing

All bearing types and design criteria for each bearing type shall be included in this section. Standard plans and special details should be listed if they are utilized.

_____ Joint

All joint types and design criteria for each type shall be included in this section. Standard plans and special details should be listed if they are utilized.

_____ Superstructure

All superstructure types and design criteria for each type shall be included in this section. Standard plans and special details should be listed if they are utilized.

_____ Substructure

All substructure types and design criteria for each type shall be included in this section. Standard plans and special details should be listed if they are utilized.

_____ Piles and Drilled Shafts

All pile types, sizes, and structural design criteria shall be included in this section. Standard plans and special details should be listed if they are utilized.

_____ Geotechnical Design

All geotechnical design criteria shall be included in this section and the information shall be provided by the Geotechnical Engineer. Standard plans and special details should be listed if they are utilized.

_____ Mechanical Design

All mechanical design criteria shall be included in this section if applicable. Standard plans and special details should be listed if they are utilized.

_____ Electrical/Lighting Design

All electrical design criteria shall be included in this section if applicable. Standard plans and special details should be listed if they are utilized.

_____ As-Designed Bridge Rating Criteria

All as-designed bridge rating criteria shall be included in this section.

_____ Software

All software used for design and check shall be included in this section.

Final Calculation Book Checklist

(Appendix B of LADOTD Policy on Quality Assurance and Quality Control)

The final calculation book for each project shall include, but not limited to, the following sections:

_____ **Cover Sheet**

The following information must be included on the cover sheet:

- LADOTD project number
- Project name
- The title of “Final Calculation Book”
- The EOR’s seal with signature and date

_____ **Final Calculation Book Check List**

_____ **QA/QC Certifications**

_____ **Peer Review Resolution Agreement (if peer review is performed)**

_____ **Design Criteria**

_____ **Final Hydraulic Analysis Report from Hydraulic Engineer**

_____ **Final Geotechnical Analysis Report from Geotechnical Engineer**

_____ **Superstructure Design Calculations**

_____ **Substructure Design Calculations**

_____ **Quantity Calculations**

_____ **Special Provisions/NS-Items**

_____ **Construction Cost Estimate**

_____ **As-Designed Rating Report**

_____ **List of All Final Electronic Design Files and File Locations (ProjectWise directory name)**

Final calculation book shall be submitted to LADOTD on a CD or Flash Drive or placed to a designated ProjectWise folder including the following information:

_____ **A PDF File of the Calculation Book**

_____ **All Electronic Design Files**

_____ **A PDF File of the As-Designed Rating Report Only**

QA Information Package Checklist

(Appendix C of LADOTD Policy on Quality Assurance and Quality Control)

Project No.:

Project Name: IDIQ CONTRACTS FOR BRIDGE PRESERVATION STATEWIDE

Project Description: Develop Plan, Specification, and cost estimate for US 190 Mo. Pacific Overpass and Little Teche Bayou Bridges. Scope of work includes designing bridge replacement for existing US 190 Mo. Pacific Overpass and Little Teche Bayou Bridges in St. Landry Parish.

_____ **Calculation Book**

_____ **Plans**

_____ **Special Provisions**

_____ **Cost Estimate**

_____ **Other Documents:** _____

QA/QC Certification

(Appendix D of LADOTD Policy on Quality Assurance and Quality Control)

Project No.:

Project Name: IDIQ CONTRACTS FOR BRIDGE PRESERVATION STATEWIDE

Project Description: Develop Plan, Specification, and cost estimate for US 190 Mo. Pacific Overpass and Little Teche Bayou Bridges. Scope of work includes designing bridge replacement for existing US 190 Mo. Pacific Overpass and over Little Teche Bayou Bridges in St. Landry Parish.

We, the undersigned designers, detailers, checkers, and reviewers for this project, have reviewed and accepted the calculations, plans, quantities, special provisions, and cost estimate prepared for this project. We certify that the work for which we are responsible has been completed in accordance with the LADOTD Bridge Design Section Policy on QA/QC.

Team Members	Name	PE Registration No.	Responsible Plan Sheets	Responsible Special Provisions	Construction Cost Estimate	Signature
Designer						
Designer						
Designer						
Designer						
Design Checker						
Design Checker						
Design Checker						
Detailer						
Detail Checker						
Reviewer						
Hydraulic Engineer						
EOR						

QA/QC EVALUATION

(APPENDIX E of LADOTD Policy on Quality Assurance and Quality Control)

Project No.:

Project Name: IDIQ CONTRACTS FOR BRIDGE PRESERVATION STATEWIDE

Project Description: Develop Plan, Specification, and cost estimate for US 190 Mo. Pacific Overpass and Little Teche Bayou Bridges. Scope of work includes designing bridge replacement for existing US 190 Mo. Pacific Overpass and over Little Teche Bayou Bridges in St. Landry Parish.

We, the undersigned Peer Reviewer, Supervisor or Team Leader of the design team, and LADOTD Representative for this project, have reviewed and accepted the attached peer review resolutions. We certify that the peer review has been performed in accordance with the LADOTD Bridge Design Section policy on QA/QC.

Team Members	Name	Signature
Peer Reviewer		
Supervisor or Team Leader		
LADOTD Representative		

Consultant Project Bridge Design Kick-Off Meeting Agenda Checklist

(Appendix H of LADOTD Policy on Quality Assurance and Quality Control)

A kick-off meeting with the Consultant's bridge design team shall be initiated by the LADOTD Bridge Design Task Manager once the project is awarded. The meeting agenda shall include, but not limited to, the following items:

_____ **Introduce LADOTD Bridge Task Manager and the Consultant's Key Team Members**

(The EOR and Key Designers/Design Checker/Reviewer).

_____ **Discuss Consultant's Staffing Plan and Implementation of QA/QC Plan Document**

(The staffing plan should include names and responsibilities of the designers, detailers, checkers, reviewers, and the EOR.)

_____ **Determine Schedules for Project Submittals**

(Design Criteria, TS&L, 30%, 60%, 90%, 100% of Preliminary Plans and Final Plans, Final Calculations, etc.)

_____ **Share Expectations and Consultant Rating Criteria**

(Consultant rating will be performed for all project submittals shown on the project submittal schedule.)

_____ **Discuss Design Criteria**

_____ **Discuss Budget, Supplemental Requests, Invoices, and Importance of Avoiding Claims**

(Staff shown on invoices will be reviewed in accordance with the staffing plan.)

Consultant Submittal QA/QC Certification

(Appendix I of LADOTD Policy on Quality Assurance and Quality Control)

Project No.:

Project Name: IDIQ CONTRACTS FOR BRIDGE PRESERVATION STATEWIDE

Project Description: Develop Plan, Specification, and cost estimate for US 190 Mo. Pacific Overpass and Little Teche Bayou Bridges. Scope of work includes designing bridge replacement for existing US 190 Mo. Pacific Overpass and over Little Teche Bayou Bridges in St. Landry Parish.

We, the Engineers of Record for this project, certify that the information included in this submittal has been prepared in accordance with the QA/QC plan documents and the information presented is accurate and meets the requirements of this submittal.

Submittal Description		
Engineer of Record (Bridge Design)	Signature	Date
Engineer of Record (Roadway Design)	Signature	Date

Project Activity Log Sheet

(Appendix J of LADOTD Policy on Quality Assurance and Quality Control)

Project No.:

Project Name: IDIQ CONTRACTS FOR BRIDGE PRESERVATION STATEWIDE

.

Bridge Task Manager: Osama Shahawy, PE

Date	Project Activity	Comments

Consultant Submittal Review Checklist

Items	Design Criteria	TS&L	30% PP	60% PP	90% PP	100% PP	30% FP	60% FP	90% FP	100% FP	Final Calculation Book	Plan Revisions	Change Orders
Consultant Submittal QA/QCCertification													
Design Criteria	C												
TS&L		C											
Bridge Index			D	D	D	D	D	D	C	S			
General Notes			D	D	D	D	D	D	C	S			
Summary of Estimated Quantities			D	D	C	C	D	D	C	S			
General Plans			D	D	C	C	C	C	C	S			
Typical Sections			D	D	C	C							
Super elevation Diagram				D	D	C	C	C	C	S			
Construction Phasing Details				D	D	C	C	C	C	S			
Traffic Control Details				D	D	C	C	C	C	S			
Foundation/Pile Layout				D	D	C	C	C	C	S			
Pile Loads/Details					D	D	D	C	C	S			
Pile Data Table							D	D	C	S			
Bent Details							D	D	C	S			
Fender Details							D	D	C	S			
Girder Details							D	D	C	S			
Span Details							D	D	C	S			
Joint Details								D	C	S			
Bearing Details								D	C	S			
Approach Slab								D	C	S			

Items	Design Criteria	TS&L	30% PP	60% PP	90% PP	100% PP	30% FP	60% FP	90% FP	100% FP	Final Calculation Book	Plan Revisions	Change Orders
Guardrail Details								D	C	S			
Bridge Barrier/Railing Details								D	C	S			
Detour Bridge Details								D	C	S			
Revetment Details								D	C	S			
Signing/Lighting Details								D	C	S			
Year Plate								D	C	S			
Rebar Support								D	C	S			
Misc. Details								D	C	S			
Electrical Details								D	C	S			
As-built Plans								D	C	C			
Special Provisions							D	D	C	C			
NS-Items							D	D	C	C			
Cost Estimate					D	D	D	D	C	C			
Final Calculations											S		
Revised Plans/Calculations												S	S

LEGEND:

"R" = the item is required and shall be included in the submittal

"C"= the item shall be complete and shall be included in the submittal

"D"= the item shall be in development and shall be included in the submittal

"S"= the item is stamped by the EOR and shall be included in the submittal

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

ARCADIS

Sections 22-23

WJE
Hale Boggs Memorial (Luling) Bridge Deck Overlay Repair Consultation and Instrumentation Services

Luling, St. Charles Parish, LA

22. Sub-consultant information:

If one or more sub-consultants will be used, provide the name, address, point of contact and phone number for each. Otherwise, leave this section blank.

Firm Name (as registered with Louisiana's Secretary of State)	Address	Point of Contact and email address	Phone Number
APS Engineering and Testing (DBE/SBE)	1645 Nicholson Drive, BR, LA 70802	Sergio Aviles sergio@aps-testing.com	225 456 5714
C&C INCORPORATED (DBE/SBE)	3251 Southern Pacific Road Port Allen, LA 70767	Karla Weston, PE kweston@cdcbr.com	225 765 1802
RAHMAN & ASSOCIATES, INC. Civil and Structural Engineers (DBE/SBE)	3645 Williams Blvd. Suite 208 Kenner, LA 70065	Ataur Rahman Bhatti, PE rahman@rahmanandassociates.com	504 469 0022
TranSystems	3230 W Commercial Blvd, Suite 450 Fort Lauderdale, Fl 33309	Steven Shaup, PE sashaup@transystems.com	954 529 1005
WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS	330 Pfingsten Road, Northbrook, IL 60062	Jonathan C. McGormley, PE jmcgormley@wje.com	847 753 7234
FENSTERMAKER C. H. Fenstermaker & Associates, L.L.C.	135 Regency Square Lafayette, LA 70508	Travis Bodin, MBA, PLS, PMP travisb@fenstermaker.com	337 237 2200

(Add rows as needed)

23. Location:

If location is an evaluation criterion for this advertisement and the prime consultant intends to establish a local presence, describe the plan for doing so. Otherwise, leave this section blank.

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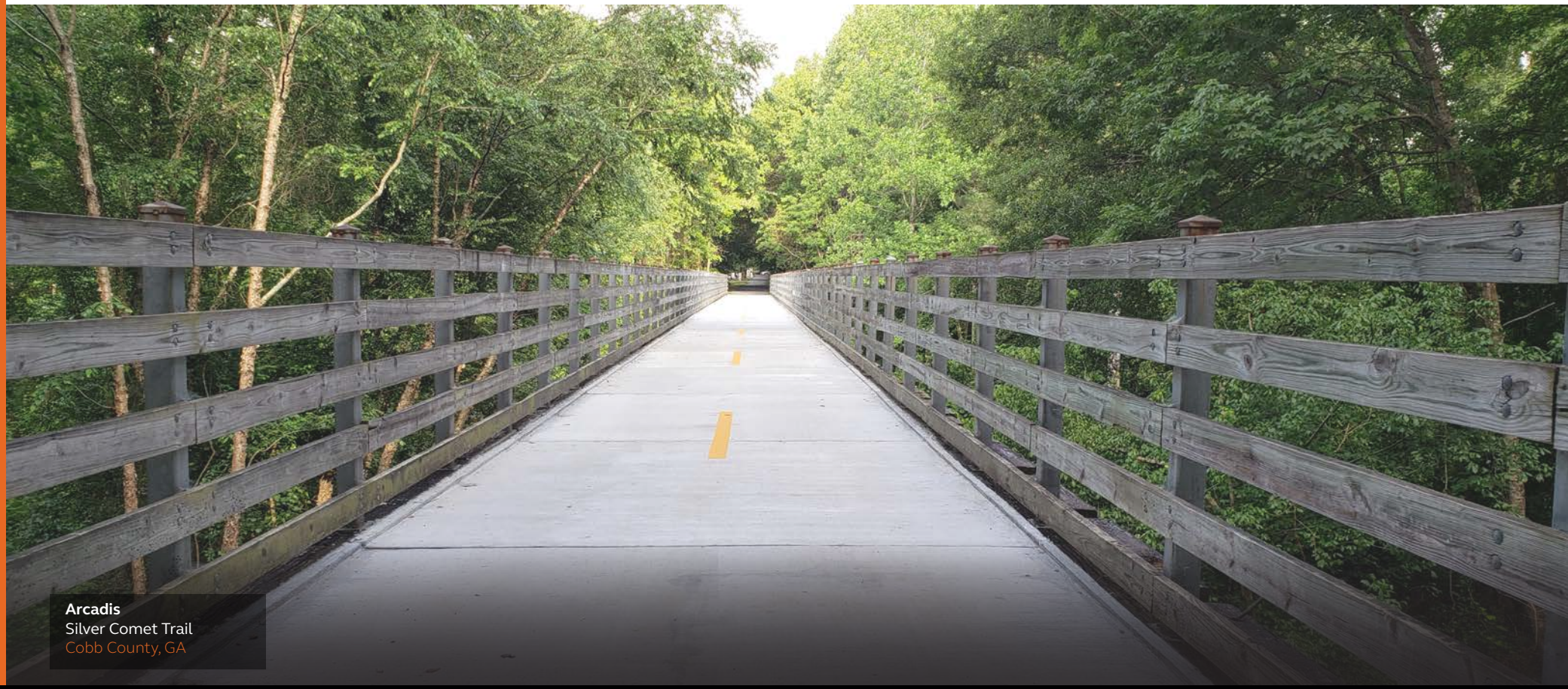

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