DOTD FORM: 24-102

(Revised March 1, 2022)

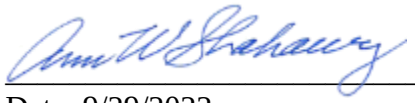
PROPOSAL TO PROVIDE CONSULTANT SERVICES

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 NON-DESTRUCTIVE TESTING/EVALUATION OF STRUCTURES
2. Contract number(s) as shown in the advertisement	4400025002 and 4400025003
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)	**SDR Engineering Consultants, 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)	EF0003263 DUNS Number: 968522367
6. Prime consultant mailing address	2820 Continental Drive, Suite 100, Baton Rouge, LA 70808
7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)	2820 Continental Drive, Suite 100, Baton Rouge, LA 70808
8. Name, title, phone number, and email address of prime consultant's contract point of contact	Mohsen Shahawy, PhD, PE Principal & COO (850) 222-2737, Ext. 226 shahawy@sdrengineering.com
9. Name, title, phone number, and email address of the official with signing authority for this proposal	Ann Shahawy CEO (850) 222-2737, Ext. 222 ashahawy@sdrengineering.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.	Signature (shall be the same person as #9):  Date: 9/29/2022
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.	NO DBE GOAL

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.

Evaluation Discipline(s)	% of Overall Contract	SDR Engineering Consultants, Inc. (Prime)	Forte & Tablada	Infrasense, Inc.
Bridge	100%	75%	15%	10%
Identify the percentage of work for the **overall contract** to be performed by the prime consultant and each sub-consultant.				
Percent of Contract	100%	75%	15%	10%

Consultants

SDR Engineering Consultants, Inc.

Forte & Tablada, Inc

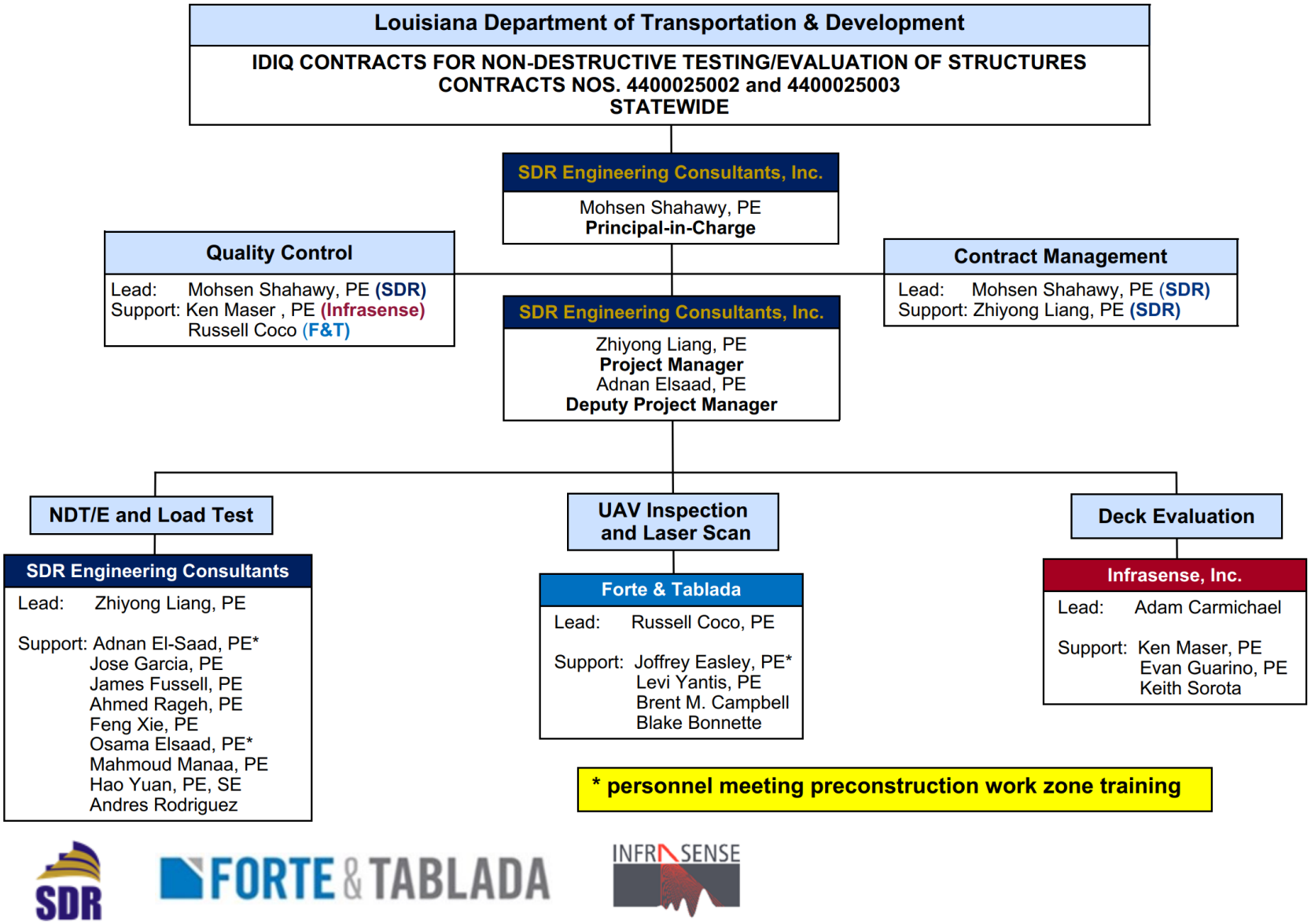
Infrasense, Inc.

13. Firm Size:

For all firms that are part of this team, indicate the approximate number of personnel to be committed to this contract, by DOTD Job Classification and the total number of personnel within the firm that could provide support, if needed. If a specialized job classification is required and not included on the DOTD job classification list, specify "Other (xxxx)" and include the classification title inside the parentheses. The DOTD Job Classification(s) to be used can be found at the following link: http://wwwsp.dotd.la.gov/Inside_DOTD/Divisions/Engineering/CCS/Job_Qualification/Job%20Classifications%20with%20Descriptions.pdf

Firm name	DOTD Job Classification	Number of personnel committed to this contract	Total number of personnel available in this DOTD Job Classification (if needed)
SDR Engineering Consultants, Inc.	Principal	1	2
	Supervisor Engineer	2	3
	Engineer	4	4
	Engineer Intern	6	10
	Inspector-Bridge	6	8
	CADD Drafter	1	2
	Computer Analyst	1	2
	Administrative	1	2
Fort & Tablada, Inc.	Supervisor Engineer	1	4
	Engineer	2	4
	Senior Technician	2	3
	Engineer Intern	4	9
	Administrative	1	1
	Clerical	1	4
Infrasense, Inc.	Principal	2	2
	Engineer - Other	2	2
	Professional	7	7
	Technician	3	3
	Administrative	1	1
	Clerical	1	1

14. Organizational Chart:



15. Minimum Personnel Requirements:

Use the table below to identify both prime consultant and sub-consultant staff designated to work on this contract meeting the Minimum Personnel Requirements (MPRs) specified in the advertisement. Ensure the résumé reflects the required experience stated in the MPR.

MPR No.	Personnel being used to meet the MPR	Firm employed by	Type of license / certification & number	State of license	License / certification expiration date
1	Mohsen Shahawy, PhD, PE	**SDR Engineering Consultants, Inc.**	PE.31465	LA	03/31/2023
2					
3	Zhiyong Liang, PhD, PE		PE.34873	LA	03/31/2024
	Adnan El-Saad, PE		PE.34533	LA	09/30/2023

16. Staff Experience:

Firm employed by: SDR Engineering Consultants, Inc.					
Name	**Mohsen Shahawy, PhD, PE**		Years of relevant experience with this employer	25	
Title	Principal and COO		Years of relevant experience with other employer(s)	15	
Degree(s) / Years / Specialization			PhD / 1984 / Civil Engineering MS / 1981 / Civil Engineering BS / 1976 / Civil Engineering		
Active registration number / state / expiration date			PE.31465 / Louisiana / 03-31-2023		
Year registered	2004	Discipline	Civil Engineer		
Contract role(s) / brief description of responsibilities			Principal in charge, design, management, QC/QA		

Mohsen Shahawy, Ph.D., P.E. (managing principal), has over 30 years of experience in bridge testing and evaluation and load rating, having pioneered load testing as a standard assessment and evaluation method during his 15-year tenure at FDOT. During this time, Dr. Shahawy planned and created the first load testing and non-destructive evaluation DOT facility in the United States for the purpose of load capacity evaluation of existing bridges through instrumentation and load testing. He has published over 180 papers in the areas of prestressed/reinforced concrete performance, LRFD and LRFR Code issues related to shear performance, structural testing, evaluation, load testing and load rating of bridges, dynamic behavior of bridges, and bridge rehabilitation.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract, *i.e.*, "Bridge Inspection", "condition assessment", "steel and concrete rehabilitation, "Non-destructive Testing", "Project Management".
8/1986–9/2022	Projects in multiple states including Louisiana, Florida, Texas, George, and Maryland: Conducted inspection, NDT strength and serviceability evaluation, and load testing of over 800 bridges, including steel, concrete, prestressed concrete, segmental, truss, and cable-stay bridges. The work consisted of plans review, planning, hand-on inspection coupled with NDT, instrumentation and conducting diagnostic and proof load testing. For each bridge, a comprehensive report was created, including the NDT and load test results, load rating and recommendations. As the project manager, Dr. Shahawy was responsible for planning all aspects of each project, supervising the execution of each project task, conducting QC/QA, signing, sealing and preparing the final report. The Example bridges are: <u>Prestressed/Post-tensioned Concrete Bridges:</u> • Bridge No.150192 - US19 – 66 th Street Bridge, Florida • Bridge No. 100427- SR 574 (M.L. King Blvd.) Bridge Over I-75, Florida • Bridge No.100585 - Westbound Gandy Bridge Main Spans, Florida • Bridge No.150224 - SR 687 (4TH Street) Over I-275, Florida

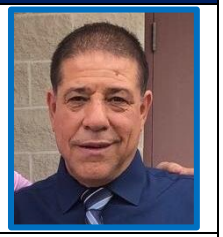
	• Bridge No.150209 - US19 Over SR 580 Bridge, Florida • Bridge No. 150216 - US19 Over Countryside Boulevard Bridge, Florida • Bridge No. 150210 – Howard Frankland, Florida • Bridge No. 121-0639-0 - I-85 NB Ramp to SR 166, Fulton County, Georgia • Bridge No. 121-0634-0 - I-85 NB over I-85, Fulton County, Georgia • Bridge No. 121-0649-0 - SR 166 EB Ramp to I-75 NB, Fulton County, Georgia • Bridge No. 121-0631-0 - I-75 NB Ramp to SR 166 WB, Fulton County, Georgia • Bridge No. 121-0603-0 - SR 13 Ramp to Peachtree, Fulton County, Georgia • Bridge No. 067-0196-0 - I-75 SB Ramp to I-285 EB, Cobb County, Georgia <u>Steel Bridges:</u> • I-95/I-595 Interchange, Bridge Numbers: 860532, 860535, 860536, 860539, 860540, 860541, 860542, 860547, Broward County, FL • Ramp B & C over I595, Bridge numbers 860390 and 860393, Broward County, FL • Ramp E over I75, Bridge numbers 860337 and 860338, Broward County, FL • Acosta Bridge, Jacksonville, FL • I-95 Dave Boulevard Interchange, Bridge No. 860603, Broward County, FL • Bridge No. 860600, Broward County, FL • Bridge No. 860526, Broward County, FL • I-95/Port Everglades Expressway, Bridge No. 860522, Broward County, FL • Bridge No. 860527, Broward County, FL <u>Movable Steel Bridges:</u> • Indian River, Vero Beach, Bridge No. 880054. • US A1A, Evans Crary, Bridge Numbers 890058 and 890060. • S.R. 706, Jupiter, FL - Bridge No. 930007. • Delray Beach, FL – Bridge No. 930064. • Okland Blvd., Ft. Lauderdale, FL – Bridge # 860941. <u>Concrete Segmental Bridges:</u> • I-75/I-595 Interchange, Bridge Numbers: 860509, 860510, 860512, 860518, 860519, 860382, 860385, Broward County, FL • Ramp T over I-595 , Bridge number : 860476, Broward County, FL • Sawgrass Expressway over I-75, Bridge number: 860515, Broward County, FL

Firm employed by: SDR Engineering Consultants, Inc.					
Name	**Zhiyong Liang, PhD, PE**		Years of relevant experience with this employer	13	
Title	Vice President		Years of relevant experience with other employer(s)	12	
Degree(s) / Years / Specialization			PhD / 2008 / Civil Engineering MS / 2004-2005 / Civil Engineering-Computer Science BS / 1996 / Civil Engineering FHWA-NHI-13055 Safety Inspection of In-Service Bridges		
Active registration number / state / expiration date			PE.34873 / Louisiana / 3-31-2024		
Year registered	2009	Discipline	Civil Engineering-Structures		
Contract role(s) / brief description of responsibilities			Bridge NDT, load test, and load rating leader.		

Dr. Liang's experience focuses on bridge design, load rating, and conditions evaluation of steel and concrete bridges. He has been a Project Manager and Engineer of Record on many successfully completed bridge load rating, design, testing, and rehabilitation projects. With a diverse background in both Civil Engineering and Computer Science, he is an expert at operating different bridge testing equipment, performing data analysis, and developing software to assist in bridge analysis and data archiving. He has a very strong background in finite element modeling and data analysis, as well as hands-on experience at bridge sites. He served as the Lead Engineer in the development of the LADOTD Bridge Design and Evaluation Manual (BDEM).

Experience dates (mm/yy–mm/yy)	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).
10/18–12/20	**H.011487: LA 182 Over Atchafalaya River (Berwick bay) Bridge Rehabilitation, Lafayette, LA** The bridge consists of three (3) main trusses with span length of 608 feet each, two (2) 126 feet deck truss spans, and 40 concrete T-beam spans with length of 40 feet each. The scope included inspection, load test, load rating, and rehabilitation design of the entire bridge. SDR is the prime consultant and Dr. Liang served as the Project Manager overseeing the following tasks: • Lead the in-depth inspection and non-destructive test (NDT) using strain gauges. • Lead load rating and rehabilitation scope development. • Lead the rehab design and preparation of construction plans.
7/19–10/20	**H.009730.5: Load Testing and Evaluation of Substructures of Nine Bridges, Multiple Locations, LA** The scope was to investigate nine bridges with scour issues, which are subjected to be posted or even closed according to the geotechnical analysis. The task was to find the actual carrying capacity of the piles using proof testing with strain gauges and Linear Variable Differential Transformer (LVDT). Dr. Liang was the Project Manager and his responsibilities include: • Determine the instrumentation plans and safe load to be placed on the bridge.

	• Load test the bridge with strain gauges, LVDTs, and calibration trucks.
5/19–01/20	**H.009859.5: Evaluation and Load Testing of Five Posted Bridges, Vermilion and Cameron Parish, LA** The scope was to perform load tests coupled with Finite Element Analysis for the five posted bridges, including three movable bridges, to evaluate their strength with the aim of removing current load posting and/or determining the required strengthening. As a result, the posting on four bridges can be removed without unnecessary and costly bridge rehabilitation or strengthening, and the remaining one requires rehab design. SDR is the prime consultant and Dr. Liang's responsibilities as the Project Manager are as follows: • Lead the bridge inspection as well as load testing using strain gauges and calibration trucks. • Lead the strengthening design, plans development, and construction cost estimate.
3/18–5/18	**Load Testing and Structural Evaluation of The Bayou Pierre Bridge During Dragline Crossing, Desoto, LA** This project was a non-destructive test and evaluation of a prestressed concrete bridge for the passage of a dragline weighted at 9,980,445 lbs. As the Project Manager, responsibilities carried out in this project included: • Perform AASHTO code analysis and Finite Element analysis of the bridge under different load assumptions to determine the optimum dragline weight that could safely cross the bridge. • Perform instrumentation and load testing of the bridge to verify design and the assumptions of the Finite Element Modeling. • Monitor the bridge during the dragline crossing and perform bridge inspection afterward.
6/16–10/17	**H.012302: I-10 WB on-Ramp From US-61, Sorrento, LA** The scope was to investigate the collision damage on a steel girder using non-destructive load testing, develop rehabilitation plans, and monitor the bridge during construction. The repair of the bridge segment was performed by removing and transporting the entire span nearby to accommodate the heavy traffic on I-10 with minimal highway closure. As the Project Manager, responsibilities carried out in this project included: • Build 3D finite element model to determine the strength and displacement of the bridge. • Lead the development of rehab plans. • Perform instrumentation and load test before and after the repair work to estimate the effect of repair.
5/12–7/12	**H.009933: Evaluation and Testing of Piers for Macarthur Driver Interchange** The scope of work was to investigate the causes for the cracking on the inverted-T pier caps, and to propose the repair solution in order to restore the pier cap completely for safe use on this 6-mile-long bridge. As the Project Manager, responsibilities carried out in this project included: • Build 3-D finite element model for the pier cap using LUSAS to find the cause of cracking. • Perform the Strut-and-Tie analysis to determine the strength of the pier caps. • Install strain and crack opening instrumentation and perform load test on a representative pier cap.

Firm employed by: SDR Engineering Consultants, Inc.					
Name	**Adnan El-Saad, P.E.**		Years of relevant experience with this employer	10	
Title	Senior Project Engineer & GM		Years of relevant experience with other employer(s)	23	
Degree(s) / Years / Specialization			BS / 1981/ Civil Engineering		
Active registration number / state / expiration date			PE. 34533 / Louisiana / 09-30-2023		
Year registered	2009	Discipline	Civil Engineering-Structures		
Contract role(s) / brief description of responsibilities			Senior Engineer & Deputy Project Manager		

Adnan Elsaad is an expert engineer with over 30 years of experience in non-destructive testing, LRFR load rating, bridge evaluation, and bridge testing. He has planned, instrumented, and executed over 300 bridge tests. He has extensive experience with and a specialized knowledge of testing both steel and concrete structures, as well as load rating and bridge inspection.

Experience dates (mm/yy–mm/yy)	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).
05/20–Present	**H.014288.5-2: LA 82 Mermentau MB Rehab (G Chenier) (HBI), Cameron Parish, LA** This is a swing truss bridge built in 1959, with span length of 204 ft on the truss span and a total bridge length of 1049 ft including the approach concrete slab spans and steel I-beam spans. The major tasks were to inspect, and load test the bridge, then develop the rehabilitation plans to strengthen the bridge so that the posting can be removed. Mr. Elsaad's responsibilities are as follows: • Develop testing plan, install strain gauges, and perform load test. • Prepare rehabilitation plans.
02/20–12/20	**H.009859.5: RC Box Culverts Testing and Rating, Statewide, LA** The scope of work was to evaluate twelve (12) culverts to develop a load rating process to allow culverts to pass. The evaluation was carried out utilizing load rating analysis and load testing coupled with detailed 3-D Finite Element Analysis. The culverts were chosen to have different sizes, fill heights, and soil types. Adnan El-Saad's responsibilities were as follows: • Supervised field instrumentation and testing. • Reviewed field test analysis and reports.
11/19–10/20	**H.009859.5: Evaluation & Load Testing of Substructure of Nine Bridges, Statewide, LA** The scope of work was to evaluate nine (9) substructures to determine the actual settlement of the substructures through proof load testing. The evaluation was carried out utilizing load rating analysis and load testing coupled with detailed 3-D Finite Element Analysis. The settlement of every pile of the critical bent was measured using LVDT displacement devices. Adnan El-Saad's responsibilities were as follows: • Supervised field instrumentation and testing.

	• Instrumented piles and ran data acquisition. • Review and validate diagnostic load testing results. • QCQA review final reports.
05/19–10/20	**H.011487: Load Testing, Evaluation, and Load Rating of Long-Allen (LA 182 over Atchafalaya River-Berwick Bay) Bridge, Berwick, LA** The Long-Allen Bridge, built in 1933, is a simple through truss bridge which carries Louisiana Route 182 over the Atchafalaya River (Berwick Bay). The bridge consists of 47 spans with a total length of 3,746 ft. The approach spans consist of two reinforced concrete slab spans, 40 reinforced concrete T-beam spans, and 2 deck truss spans. The main spans consist of 3 identical through truss spans. Scope of work included evaluation of the structural strength; load test of the reinforced concrete approach spans; load rating analysis of the deficient structure; and design of rehabilitation and construction plans production. Adnan El-Saad's responsibilities were as follows: • Supervised field instrumentation and testing. • Instrument and field test girder approach spans. • Review and validate diagnostic load testing results. • Review final field test report. • QCQA review of construction rehabilitation plans.
05/19–01/20	**H.009859.5: Evaluation & Load Testing of Five Posted Bridges, Statewide, LA** The scope of work was to evaluate five (5) bridges, three (3) of which are movable bridges, that are posted for a load lesser than the Legal Loads and/or Special Hauling Vehicles. The evaluation was carried out utilizing load rating analysis and load testing coupled with detailed 3-D Finite Element Analysis with the aim of removing current load posting. Adnan El-Saad's responsibilities were as follows: • Supervised field instrumentation and testing. • Instrumented bridges and ran data acquisition. • Review and validate diagnostic load testing results. • QCQA review final reports.
02/16–10/17	**H.0123026: Testing and Structural Evaluation of Repaired US 61 Ramp over I-10, Lake Charles, LA** The scope of work consisted of providing construction support, instrumentation, and monitoring the bridge before the removal of the damaged portion and after installation of the replacement segment. Adnan El-Saad's responsibilities were as follows: • Instrument and perform field test. • Review final field test report.

Firm employed by: SDR Engineering Consultants, Inc.				
Name	**Jose "Pepe" Garcia, MS, PE**	Years of relevant experience with this employer	9	
Title	Operational Manager, Sr. VP	Years of relevant experience with other employer(s)	30	
Degree(s) / Years / Specialization		MS / 1978 / Civil Engineering BSE / 1975 / Civil Engineering FHWA-NHI-13055 Safety Inspection of In-Service Bridges FHWA NHI-130078 Fracture Critical Inspection for Steel Bridges		
Active registration number / state / expiration date		PE.42014 / Louisiana / 03-31-2024		
Year registered	2017	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		Mr. Garcia is responsible for technical and project management related to the inspection and assessment condition of bridges and ancillary structures and support of asset maintenance.		

Jose "Pepe" Garcia has over 39 years of professional experience working in private and public industry. He served as technical lead and project manager for several national and international proposals and projects for bridge inspection, assessment, and preservation. Mr. Garcia served as Principal Investigator and Program Manager for an FHWA Long-Term Bridge Preservation (LTBP) program. Over 20 years, Mr. Garcia held various positions at the Florida Department of Transportation (FDOT), which included progressive responsibility in bridge and roadway maintenance and preservation, structures design, and construction engineering including cost center management and office administration. Mr. Garcia served as structures Maintenance Engineer and Construction Resident Engineer for structures repair and rehabilitation for FDOT Districts 1 & 7. He also supported statewide research and development initiatives. Bridge inventory responsibility comprehended thousands of simple and complex bridges, and ancillary roadway structures with annual financial obligation exceeding $30 million. During his SDR tenure, he performed activities as designer, project manager for multidisciplinary technical, program management, emergency response and administrative activities. Experience involved interaction with federal and local government agencies and multiple engineering disciplines and specialties, including but not limited to geotechnical, mechanical, electrical, scour hydraulics, instrumentation, traffic control, roadway, permitting and environmental.

Experience dates (mm/yy–mm/yy)	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).
02/19 – present	**Florida Drawbridge, Inc. (FDOT District 4 jurisdiction)** Project engineer for inspection of bridges for and FDOT District 4. NBIS Inspection of simple and complex (segmental and movable) bridges, signing and sealing reports and project coordination. Complex bridges included a total of 64 movable bridges located throughout West Central and South Florida. Movable bridge types encompass Hopkins Frame, Vertical Lift, Rolling Gear, Swing Gear and Hydraulic, Strout (Special), Hydraulic, and Electrical systems, Hydraulic Hopkins system.

03/17 – 12/18	**FDOT District 1 and 7 highway bridge and other structures inspection.** Project manager responsible for inspecting, signing and sealing FDOT/NBI inspection reports for simple and complex bridges, including movable bridges, mechanical and electrical inspection and emergency response inspection, assessment and rehabilitation.
02/17 – 06/18	**Inspection of the Ft. Lauderdale-Hollywood International Airport Terminal** Project engineer, under contract with Keith and Associates, responsibility included oversight of inspection, coordination with clients, and signing and sealing inspection reports.
04/13 – 04/18	**Emergency Management Response, FDOT District 7** Responsibilities include pre- and post-hurricane event planning and catastrophic incident response and corrective action plan development, repair and rehabilitation plans preparation and construction inspection, contractor selection and claims management. Structure inventory included over 1,300 bridges varying in complexity, including over 30 (state & local agency) movable bridges, and hundreds of ancillary structures.
03/15 – 08/17	**NBIS Bridge Inspections, Florida Department of Transportation Districts 1 and 7** Project manager responsible for planning and directing all aspects of field inspection, load rating and structural reports for over 1,200 bridges in nine counties of central and western Florida. These structure types included 12 swing span and 4 double leaf bascule bridges, closed spandrel concrete and stone arches, open spandrel arches, and culverts.
01/13 – 9/15	**Longboat over Lagoon Pond, Sarasota Florida (FDOT) - Bascule Bridge Rehabilitation:** Designed, detailed, and checked bridge rehabilitation construction plans. Duties included repairs to the damage to the abutments and approach concrete slabs, heat straightening of damaged elements, replacement of the steel grid deck on the movable span and design of the structural upgrades to existing pedestrian walkway along the bridge. Developed construction details and plans for the rehabilitation and upgrading of the operator's house. Also, assisted in the design of structural supports for Intelligent Transportation System and sign support for Cantilever overhead signs. Provided construction support and site inspection.

Firm employed by: SDR Engineering Consultants, Inc.					
Name	**James "Greg" Fussell, ME, PE**		Years of relevant experience with this employer	6	
Title	Bridge Engineer		Years of relevant experience with other employer(s)	0	
Degree(s) / Years / Specialization			ME / 2014 / Structural Engineering BS / 2013 / Civil Engineering		
Active registration number / state / expiration date			PE.0043706 / Louisiana / 03-31-2024		
Year registered	2019	Discipline	Civil Engineer		
Contract role(s) / brief description of responsibilities			PM, Design, Analysis, Load Rating, Inspection, Drafting		

Dr. Shahawy is the managing principal of SDR. He has 40 years of experience and has published over 180 papers in the areas of prestressed/reinforced concrete performance, LRFD Code issues related to shear performance, structural testing, evaluation, load testing and load rating of bridges, dynamic behavior of bridges, and bridge rehabilitation. He is a Co-author of the Prestressed Concrete Institute (PCI) Bridge Design Manual. He has led SDR'S team in the development of the **DOTD Bridge Design and Evaluation Manual** and in the development of the **LG Girder Details and Design Standards**. He has been responsible for the design of more than 90 bridges with spans ranging up to 280 feet, the production of conceptual reports for 40 bridges, and design peer reviews of more than 300 bridges for various authorities.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract, *i.e.*, "Bridge Inspection", "condition assessment", "steel and concrete rehabilitation, "Non-destructive Testing", "Project Management".
08/19 – Present	**H.011309: MacArthur Interchange Completion, Phase II, Jefferson Parish, LA** Scope of work is to provide two new on-ramp and off-ramp connections between the eastbound of West Bank Expressway (US 90-Z) and Frontage Road, demolish the existing off-ramp and widen the US 90-Z bridge to accommodate the new ramps. The project consisted of providing all necessary engineering design services (Stage 3) required to construct the two separate ramp structures and the relocation of the Frontage Road. To accommodate the new structures for the two ramps, Frontage Road required relocation along with utilities while maintaining all business access. SDR is the prime consultant and Mr. Fussell's responsibilities are as follows: • Lead the substructure design and plan development • QC of drainage design, 3D modeling, superstructure design, and bridge quantities
02/19-08/19	**H.009859.5: Load Rating of 27 Bridges, Statewide, LA** This project consisted of rating of 27 complex bridges per LADOTD Policies and Guidelines for Bridge Rating and Evaluation. The bridge types comprised cast-in-place slab, prestressed concrete girders, steel plate girders, truss bridges, and swing spans. The superstructures were rated using AASHTOWARE Bridge Rating (BrR) and/or and the substructures were rated using RC-Pier and Mathcad Sheets. In some cases, Midas was used for 3D finite element analysis. Mr. Fussell's responsibilities were as follows:

	• Reviewing the as-built drawings of each bridge to determine the appropriate load rating method and assumptions for the analysis. • Performing load rating of bridges using BrR, RC-Pier, Mathcad, and Midas. Then producing in-depth reports to present load rating overview, results, and schematics. • QC of load rating models and reports for other engineers to ensure accuracy and consistency.
05/16-04/18	**H.011484.5: US 80 Red River Bridge Inspection, Load Rating, and Rehabilitation, Shreveport, LA** The US 80 Texas St. Bridge is a historic truss bridge in Shreveport, LA that has undergone inspection, load rating, and rehabilitation design. The complex structure consists of two 182' anchor spans and one 520' steel cantilever span, six 102'-9" steel deck truss spans, one 81' steel girder span, and 35 reinforced concrete deck girder approach spans of various lengths. Considering the inspection, the load rating was performed using AASHTOWARE Bridge Rating for the approach spans, deck truss spans, main truss spans, truss members, and gusset plates. Mr. Fussell responsibilities were as follows: • In-depth field investigation of the truss and approach spans, as well as the various column bents and piers. The entire structure was inspected by the SDR team to determine current conditions and critical members. • Preparation of the inspection report and organization of the inspection figures and tables. • The load rating was performed using AASHTOWARE Bridge Rating for the approach spans, deck truss spans, main truss spans, truss members, and gusset plates. • Considering the inspection and load rating findings, investigation of repair procedures such as heat straightening and paint containment systems for truss configurations. Extensive drawings were developed using MicroStation for repair procedures of the superstructure and substructure, along with re-producing shop drawings of members to be repaired.
03/15-08/15	**H.009859.5: Load Rating of 18 Bridges, Statewide, LA** The project involved the load rating of 18 existing load-posted bridges consisting of swing spans, concrete box girders, truss spans, and continuous steel plate girders to determine if the posting could be removed. This scope includes collecting and compiling all pertinent information, load rating the bridges using standard analysis, performing an in-depth field investigation, analyzing, and rating deficient structures, and providing a detailed evaluation report. Mr. Fussell's project tasks involved the following: • In-depth field investigation to determine critical members, current structure conditions, and the most efficient load rating procedure. • Extensive modeling of the structures using AASHTOWARE Bridge Rating and Midas for 3D FEM analysis. • Detailed reports were developed for each bridge to summarize the load rating results, along with the posting recommendations based on the results.

Firm employed by: SDR Engineering Consultants, Inc.					
Name	**Ahmed Rageh, PE, PhD**		Years of relevant experience with this employer	2	
Title	Bridge Engineer & Bridge Inspector Team Leader		Years of relevant experience with other employer(s)	10	
Degree(s) / Years / Specialization			PhD / 2020 / Civil Engineering MS / 2018 / Civil Engineering MS / 2012 / Civil Engineering BS /2006 / Civil Engineering FHWA-NHI-13055 Safety Inspection of In-Service Bridges		
Active registration number / state / expiration date			PE. 93229 / Florida – EI. 0034741 / Louisiana		
Year registered	2022 – 2021	Discipline	Civil Engineering-Structures		
Contract role(s) / brief description of responsibilities			Bridge Engineer and Bridge Inspection Team Leader		

Dr. Rageh is a bridge engineer with 10 years of experience in bridge design and evaluation. He has extensive experience and specialization in bridge design with detailed knowledge of complex steel and concrete bridge, as well as bridge load rating, inspection, and full-scale testing. He has extensive experience in operating bridge testing equipment and performing data processing and cleansing. He has extensive experience in performing finite element analyses with various levels of complexity. Dr. Rageh has an extensive experience in performing automated finite element analyses with SAP and MATLAB Open Application Programming Interface to reduce time consumption, increase the accuracy and reduce human errors. He has also completed the FHWA-NHI Bridge Inspection Training and qualified as a bridge inspection manager.

Experience dates (mm/yy–mm/yy)	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).
08/20 – 01/21	**H.009859.5: Load Rating of 176 On-System bridges, Statewide LA** This project consists of the load rating of 176 bridges located in Louisiana State. Most of them are culverts. The culverts were rated using the improved rating method developed by SDR. Dr. Rageh responsibilities includes: • In-depth field inspection in accordance with NIBS standards. • Performing load rating of reinforced concrete box culverts. • Performing QCQA on box culverts rated by other engineers.
06/21– 04/22	**Bridge No. 879092: Pedestrian Truss Bridge Over Florida Turnpike Access Road, Hard Rock Stadium, Miami Gardens, Florida** The bridge is a single span steel prefabricated truss-type bridge with a total as-built length of 206'-7". SDR responsibility was to perform independent peer review of the bridge components and mounted sign structures. Dr. Rageh responsibilities included:

	• Performing 3D finite element and buckling analyses of the truss bridge. • Perform design verification of the truss bridge superstructure elements and connections.
08/15 – 03/20	**Columbus Truss Railway Bridge Evaluation and Damage Detection, Columbus, NE** Scope of work is to develop a damage detection framework to detect Columbus riveted steel truss deficiency through inspection, extensive load testing and finite element analyses. Dr. Rageh responsibilities included: • Field inspection of the bridge spans. • Preparation and supervising the field testing. • Collecting and processing field measurements. • Performing 3d finite element analyses accounting for truss connections effects. • Designing a structural health monitoring system deployed on the bridge. • Developing an automated damage detection framework.
08/18 – 09/19	**Load Testing of Seven Bridges, Statewide, NE** The project involved full-scale testing of seven bridges with SMARTI project to collect measured responses for various type of bridge structures. Tested bridge included multi steel beams, multi precast prestressed girders and slab bridges. Dr. Rageh responsibilities included: • Preparing instrumentation plans and installing sensors. • Performing full-scale load testing, Collecting, and processing field measurements.
07/15 – 05/14	**Egyptian Railway System Riveted Steel Bridges Assessment and Testing, Egypt, Countrywide** The project involved full-scale testing and fatigue assessment of the major riveted steel truss bridges crossing the River Nile in Egypt. Bridges have total lengths between 296 and 1610 ft. with spans up to 295 ft. and height up to 30 ft. Dr. Rageh responsibilities included: • Performing in-depth filed inspection of bridge elements and connections. • Managing the full-scale live load non-destructive field testing. • Performing 3D finite element analyses for the tested bridges. • Performing fatigue assessment for critical bridge elements and connections.
06/08 – 07/10	**El Maryoutya Roadway Steel Bridges, Giza, Egypt** The bridge consists of cast-in-place concrete box and composite steel-twin box girders with span length of 175 ft. Dr. Rageh responsibilities included: • Performing 3D finite element analyses for the steel twin box girders. • Designing the steel elements and connections of box girders. • In-depth inspection of fabricated girders prior to transportation and construction support.

Firm employed by: SDR Engineering Consultants, Inc.					
Name	**Feng Xie, MS, PE**		Years of relevant experience with this employer	7	
Title	Structural Engineer		Years of relevant experience with other employer(s)	1	
Degree(s) / Years / Specialization			MS / 2014 / Civil Engineering BS /2012/ Civil Engineering		
Active registration number / state / expiration date			PE. 43987/ Louisiana/ 03-31-2024		
Year registered	2019	Discipline	Civil Engineer		
Contract role(s) / brief description of responsibilities			Engineer, bridge non-destructive evaluation and analysis		

Mr. Xie is a seasoned structural engineer with over 7 years of experience in structural engineering. His current work is primarily in bridge inspection, non-destructive testing, load testing, bridge design and detailing, load rating, and construction quantity/cost estimate preparation. He has encompassed concrete, prestressed concrete, steel, timber bridges, etc. in his professional career.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract, *i.e.*, "Bridge Inspection", "condition assessment", "steel and concrete rehabilitation, "Non-destructive Testing", "Project Management".
04/22 - Present	**H.012485.1: Load Testing and Evaluation of 19 Bridges, Statewide, LA** The project includes load tests for 19 bridges to evaluate their strength with the aim of avoiding load posting or determining the required strengthening measures. Feng's responsibilities were: • Review of instrumentation plan and load testing schedule • Review of finite element analysis and load test reports
05/21 – 08/21	**H.009730.5: Load Testing and Evaluation of LA 1 over Plaquemine Bridge, Iberville parish, LA** Bridge 054350 crosses Bayou Plaquemine in Iberville Parish was a steel high truss bridge built in 1950. Load tests were conducted to study the capacity of the bridge. Feng's responsibilities were: • Development of instrumentation plan and load testing schedule • Load testing with dump trucks and processing test data
04/21 – 06/21	**H.009859.5: Rehabilitation of LA 3094 Bridge, Shreveport, LA** The LA 3094 Bridge over Kansas City Southern RR is located in Caddo, Bossier City, and was built in 1977. The bridge is in bad condition and needs to be evaluated and repaired. Feng's responsibilities were: • In-depth inspection of the structural members and identification of structural deficiencies • Load testing with dump trucks, processing test data, preparation of the inspection report
09/20 - 02/21	**H.009730.5: Bridge Deck Evaluation using Ground Penetrating Radar, Statewide, LA** This project involves using air-coupled GPR to evaluate the overall deck condition and the deck deficient areas of selected five bridges. Feng's responsibilities were: • Development of the work schedule and management of the work progress

	• Field inspection, GPR field measurement, GPR data processing, and GPR data interpretation • Preparation of comprehensive deck evaluation reports
02/20 - 09/20	**H.009859.5: Reinforced Concrete Box Culverts Testing and Rating Statewide, Statewide, LA** This project aims to develop an advanced load rating methodology for culverts. Load tests were conducted to study the load effects of culverts and verify the proposed rating method. Feng's responsibilities were: • Conducting field inspection, load testing with dump trucks, and processing test data • Review of finite element models, documents, and the proposed load rating guideline of culverts
09/19 - 01/20	**H.009859.5: Load Testing and Evaluation of Five Posted Bridges, Vermilion, Cameron Parish LA** Load tests of five bridges combined with detailed three-dimensional Finite Element Analysis revealed that these bridges can carry higher loads than those estimated by bridge design codes. Feng's responsibilities were: • Development of instrumentation plan, load testing with dump trucks, and processing test data • Review of documents and finite element models for the controlling spans
06/19 - 12/19	**H.009730.5: Load Testing and Evaluation of Two Posted Bridges, Terrebonne Parish, LA** This project includes load testing of two bridges, which are posted for a load lesser than state legal loads. Load tests coupled with detailed three-dimensional Finite Element Analysis were performed to investigate the actual capacity of the bridges. Feng's responsibilities were: • Development of instrumentation plan and load testing of the critical members with dump trucks • Review of the finite element models and preparation of the load rating reports
02/19 - 08/19	**H.011487: LA 182 Berwick Bay Bridge Rehabilitation, Lafayette Parish, LA** This project consisted of the development of a rehabilitation plan for deficient structural components for the Long-Allen Bridge. Load testing using strain gauges and dump trucks was performed to determine the actual carrying capacity of the concrete spans. Feng's responsibilities were: • Load rating of substructures, load testing, and development of the rehabilitation plan
06/16 - 06/17	**H.012302.6: Load Testing and Evaluation of Repaired US61 Ramp over I-10, Ascension Parish, LA** This project consisted of providing construction support for a damaged curved steel bridge, instrumentation, and monitoring the bridge's deformation during rehabilitation. Feng's responsibilities were: • Preparation of inspection equipment and schedule, load testing, and processing test data
11/15 - 05/16	**H.011484: US 80 Texas St. In-Depth Bridge Inspection and Rating, Shreveport, LA** This project consisted of the in-depth inspection, load rating, and rehabilitation of the US 80 Texas Street truss bridge located in Shreveport, Louisiana. Feng's responsibilities were: • Ultrasonic testing of steel members and visual inspection of the structural members • Preparation of the structural evaluation reports

Firm employed by: SDR Engineering Consultants, Inc.					
Name	**Osama Elsaad, ME, P.E.**		Years of relevant experience with this employer	6	
Title	Structural/Bridge Engineer		Years of relevant experience with other employer(s)	0	
Degree(s) / Years / Specialization			ME / 2017 / Civil Engineering (Structural) BS / 2016 / Civil Engineering		
Active registration number / state / expiration date			PE.45668 / Louisiana / 09-30-2023		
Year registered	2021	Discipline	Civil Engineer-Structures		
Contract role(s) / brief description of responsibilities			Structural Bridge Engineer, bridge inspection and testing		

Osama Elsaad has 6 years of experience on bridge inspection, load testing, design, and load rating of steel and concrete bridges. He has led and managed field load testing and field inspection teams as well as instrument bridges. He has a very strong background in bridge testing and analysis, construction, and has hands-on experience on field bridge rehabilitation. He has also completed the FHWA-NHI Bridge Inspection Training.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract, *i.e.*, "Bridge Inspection", "condition assessment", "steel and concrete rehabilitation, "Non-destructive Testing", "Project Management".
07/21 – Present	**Task Order No. 3: Load Testing and Evaluation of 19 Bridges, Statewide, LA** The scope of work is to evaluate nineteen (19) bridges that are posted for a load lesser than the Legal Loads and/or Special Hauling Vehicles. The evaluation was carried out utilizing load rating analysis and load testing coupled with detailed 3-D Finite Element Analysis with the aim of removing current load posting. Osama Elsaad responsibilities were as follows: • Schedule trips and coordinate with dump truck and traffic control companies. • Develop instrumentation and load configuration plans. • Instrument and field test deficient members. • Review analysis, results, and final reports.
08/21-Present	**H.014608: LA1 Over Plaquemine Bridge, Iberville Parish, LA** The bridge consists of a 150' main truss span, and (10) 30' approach steel spans The scope was to perform a load test, in-depth inspection to evaluate the bridge, and develop rehabilitation solutions all deficient steel members of the truss span, approach spans, and substructures. As the lead engineer, Osama Elsaad is responsible for the following tasks: • Lead the in-depth inspection in conformance to AASHTO Manual for Bridge Evaluation, LADOTD bridge inspection manual and the NBIS. • Lead the load test of the bridge. • Review load test results and report.

	• Develop rehabilitation plans.
09/19-06/21	**H.009859.5: Load Rating of 311 Bridges, Statewide, LA** The scope of work was to analyze and load rate 311 existing off-system bridge structures. The load rating was performed using AASHTOWare Bridge Rating Software. The load rating consisted of concrete slab spans, steel spans, concrete girder spans, pile bents, and hammer head piers. Osama Elsaad responsibilities were as follows: • Perform load rating of simple bridges and precast girder bridges. • Develop load rating reports. • Perform field inspection. • Collect field measurements of bridges with missing plans. • Collect rebar data of concrete structures with missing plans using Ground Penetrating Radar (GPR).
11/19–10/20	**H.009859.5: Evaluation & Load Testing of Substructure of Nine Bridges, Statewide, LA** The scope of work was to evaluate nine (9) substructures to determine the actual settlement of the substructures through proof load testing. The evaluation was carried out utilizing load rating analysis and load testing coupled with detailed 3-D Finite Element Analysis. The settlement of every pile of the critical bent was measured using LVDT displacement devices. Osama Elsaad responsibilities were as follows: • Develop finite element bridge models. • Develop instrumentation and load configuration plans. • Instrument and field test pile members. • Update finite element models based on field data. • Review diagnostic load testing results and final reports.
05/19–01/20	**H.009859.5: Evaluation & Load Testing of Five Posted Bridges, Statewide, LA** The scope of work was to evaluate five (5) bridges, three (3) of which are movable bridges, that are posted for a load lesser than the Legal Loads and/or Special Hauling Vehicles. The evaluation was carried out utilizing load rating analysis and load testing coupled with detailed 3-D Finite Element Analysis with the aim of removing current load posting. Osama Elsaad responsibilities were as follows: • Develop finite element bridge models. • Develop instrumentation and load configuration plans. • Instrument and field test deficient members. • Update finite element model and BrR models with adjustment factors. • Develop final report with field test results with updated load rating.

Firm employed by: SDR Engineering Consultants, Inc.					
Name	**Mahmoud R. Manaa, PhD, PE, PMP, PMI-RMP**		Years of relevant experience with this employer	4	
Title	Structural/Bridge Engineer		Years of relevant experience with other employer(s)	4	
Degree(s) / Years / Specialization			PhD / 2019 / Civil Engineering (Structural) MS / 2014 / Civil Engineering (Structural) BS / 2011/ Civil Engineering		
Active registration number / state / expiration date			PE.144910 / Texas / 03-31-2023		
Year registered	2022	Discipline	Civil Engineering-Structures		
Contract role(s) / brief description of responsibilities			structural engineer, structural design, rehabilitation		

Dr. Manaa is a certified Project Management Professional (PMP)® and certified Risk Management Professional (PMI-RMP) ®. He is an experienced structural/bridge engineer with emphasis on analysis/design of bridges under static and dynamic loading as well as conducting load rating/testing for various bridge systems with especial expertise in load rating/testing of RC-Box and Arch culverts. Dr. Manaa has over than 8 years of experience of design and analysis of concrete/steel structures and bridges.

Experience dates (03/19–09/22)	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).
06/22 – Present	**H.009859.3: Load Testing and Evaluation of LA 19 Bridges, statewide, LA** The project scope is to perform diagnostic load testing of the deficient members for 19 bridges and update the load rating/posting of the bridges. Dr. Manaa's responsibilities include: • Instrument and load test of 11 bridges, including six culverts and 5 timber bents. • Develop detailed Finite Element model of the deficient members. • Perform and prepare a load rating summary based on test results and finite element analysis • QCQA of other engineers' work for other bridges.
03/20 – Present	**H.011309.5: MacArthur Interchange Completion Phase II Final Plans, Jefferson Parish, LA** This project scope is to finish the detailed design and final plans of MacArthur Interchange Ramps 4M and 5M. Dr. Manaa's responsibilities include: • Finite element modeling and analysis of span-pier-span assemblies with soil-structure interactions. • Analyzed, designed, detailed the superstructure for both ramps consist of the prestressed U-girders. • Developed the details of pile bents and straddle bent. • Designed the drill shafts of the piers' columns. • QCQA of the approximate analysis for the substructure. • Develop sections of the computation book.

01/21 – 10/21	**H.009859 TO14: Load Rating of 176 Bridges, statewide, LA** The Project scope was to perform load rating for different types of bridges, in accordance with AASHTO and LADOTD codes. Dr. Manaa's responsibilities included: • Modeling, analysis, and load rating of bridges using multiple software. • QCQA of other engineers' work.
12/19 – 05/21	**H.012485.5: Load Rating of 311 Off-system Bridges, statewide, LA** The Project scope is to perform load rating for different types of bridges, in accordance with AASHTO and LADOTD codes. Dr. Manaa's responsibilities included: • Modeling, analysis, and load rating of bridges using multiple software. • QCQA of other engineers' work.
06/20 – 06/20	**H.009859.5: RC Box Culvert Testing & Rating Phase II, statewide, LA** The project scope was to test the RC box culverts and develop rational and practical guidelines of load rating. Dr. Manaa's responsibilities included: • Develop refined 2D and 3D Models for the RC box culverts. • Conduct diagnostic load testing of 9 concrete box culverts. • Develop load rating methodology for RC box culverts. • Conduct load rating for 25 box culverts with the proposed methodology. • QCQA load rating conducted by other engineers.
06/19 – 11/19	**H.009859.5: Load Testing & Evaluation of Five Posted Bridges, statewide, LA** The project scope was to perform diagnostic load testing for five bridges and update the load rating/posting of the bridges. Dr. Manaa's responsibilities include: • Instrument and load test of 3 bridges • Develop detailed Finite Element model for two composite and non-composite steel I-beam spans. • Perform and prepare a load rating summary based on test results and finite element analysis. • QCQA of other engineers' work for other bridges.
10/19 – 06/20	**H.009859.5: RC Box Culvert Testing & Rating Phase I, statewide, LA** The project scope was to conduct comprehensive literature review of load rating RC box culverts, investigate and classify LADOTD inventory and conduct preliminary analytical investigation to determine the impact of influential parameters on load rating of RC Box Culverts. Dr. Manaa's responsibilities included: • Develop refined 2D and 3D Models for the RC box culverts. • Conduct literature review of load rating of RC box culvert. • Conduct parametric study on the influential parameters of the load rating.

Firm employed by: SDR Engineering Consultants, Inc.					
Name	**Hao Yuan, PhD, PE, SE**		Years of relevant experience with this employer	2.5	
Title	Structural/Bridge Engineer		Years of relevant experience with other employer(s)	2	
Degree(s) / Years / Specialization			PhD / 2018 / Civil Engineering (Structures & Mechanics) MS / 2012 / Civil Engineering (Structures) BS / 2011 / Civil Engineering		
Active registration number / state / expiration date			PE.47145 / Louisiana / 03-31-2023 FHWA-NHI Bridge Inspection Training		
Year registered	2022	Discipline	Civil Engineering, Structural Engineering		
Contract role(s) / brief description of responsibilities			Bridge Engineer / bridge inspection, testing, evaluation		

Dr. Yuan is a seasoned bridge engineer. His current work primarily includes bridge analysis, design, load rating, load testing, and non-destructive evaluation. He has encompassed concrete, prestressed concrete, steel, timber bridges, etc., in his professional career. He has also completed the FHWA-NHI Bridge Inspection Training and qualified as a bridge inspection team leader. He also has a research background on fatigue cracking and corrosion fatigue of bridge details.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract, *i.e.*, "Bridge Inspection", "condition assessment", "steel and concrete rehabilitation, "Non-destructive Testing", "Project Management".
05/22 – Present	**H.012485.1 TO3: Load Testing and Evaluation of 19 Bridges, statewide, LA** The project is to test 19 bridges to verify the current posting and check the possibility of improvement with load rating modified by load test results. The evaluation is carried out utilizing load rating analysis and load testing coupled with detailed 3D Finite Element Analysis. Dr. Yuan's responsibilities included: • Processing test data, conducting finite element analysis, and preparing the load testing report for 3 bridges. • QC/QA of other engineers' work.
04/22 – 08/22	**H.009730.5 TO6: Load Testing and Evaluation of LA 3021 over Southern Railroad, New Orleans, LA** This concrete deck girder bridge with arched frame spans was found to have a low shear capacity in an earlier load rating project. This project consisted of load tests and evaluation for this bridge. Load tests combined with detailed three-dimensional finite element analysis revealed that the bridge can carry higher loads. Dr. Yuan's responsibilities include: • Analysis and load rating of the bridge using the beam-element model and plate-element model. • Develop the load testing and evaluation report.
06/20 – 05/21	**H.009730.5 TO3: Load Testing of Selected Posted Bridges, statewide, LA**

	The project was to test several posted bridges to verify the current posting and check the possibility of improvement with load rating modified by load test results. The evaluation was carried out utilizing load rating analysis and load testing coupled with detailed 3D Finite Element Analysis. Dr. Yuan's responsibilities included: • Inspection, measurement, instrumentation, and load testing data acquisition of the bridge 025050. • Processing test data, conducting finite element analysis, and preparing the load testing report for bridges 025050 and 054350.
11/20 - 12/20	**H.009730.5 TO5: Bridge Deck Evaluation Using Ground Penetrating Radar, statewide, LA** This project was to use non-destructive test methods to evaluate the overall deck condition of five selected bridges: a 23,440' continuous steel plate girder bridge; a 1,470' continuous concrete deck girder bridge; a 465' welded I-Beam with composite concrete deck bridge; a 3,012' steel rolled I-beam suspended bridge; a 12,079' concrete prestressed AASHTO type girder bridge. Dr. Yuan's responsibilities and tasks were: • GPR data interpretation. • Review and revision of comprehensive deck evaluation reports.
06/20 – 09/20	**H.009859.5: Load Testing of 9 Substructures, statewide, LA** The project was to test 9 substructures to check the bearing capacity and possible settlement. The evaluation was carried out utilizing load rating analysis and load testing coupled with detailed 3D Finite Element Analysis. Dr. Yuan's responsibilities included: • Inspection, measurement, instrumentation, and load testing data acquisition of the bridge 024800. • Processing test data, conducting finite element analysis, and preparing the testing report for bridge 108050. • QC/QA of other engineers' work.
06/20 – 07/20	**H.009859.5 TO5: RC Box Culvert Testing & Rating Phase II, statewide, LA** The project was to test the RC box culverts and develop rational and practical guidelines for load rating. The evaluation was carried out utilizing load rating analysis and load testing coupled with detailed 3D Finite Element Analysis. Dr. Yuan's responsibilities included: • Inspection, measurement, instrumentation, and load testing data acquisition of culverts 048410 and 048450. • Processing test data, conducting finite element analysis, and preparing the load testing report.

Firm employed by: SDR Engineering Consultants, Inc.					
Name	**Andres (Andy) Rodriguez, ME, EI**		Years of relevant experience with this employer	3	
Title	Engineer Intern II		Years of relevant experience with other employer(s)	-	
Degree(s) / Years / Specialization			ME / 2020 / Civil Engineering (Structural Focus) BS / 2018 / Civil Engineering		
Active registration number / state / expiration date			EI.0034329 / Louisiana / 3-31-2024		
Year registered	2019	Discipline	Civil Engineer		
Contract role(s) / brief description of responsibilities			Pre-professional Staff Engineer		

Mr. Rodriguez is a pre-professional engineer with 3 years of experience in bridge engineering and in-depth bridge inspection. His current work consists of load rating, bridge detailing and design of ancillary structures, bridge inspection, quantity/cost estimate preparation, conduct Non-Destructive Testing, and evaluation of load testing data. Furthermore, he has successfully completed and obtained certification from the FHWA/NHI Safety Inspection of In-Service Bridges course.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract, *i.e.*, "Bridge Inspection", "condition assessment", "steel and concrete rehabilitation, "Non-destructive Testing".
09/19 – 06/21	**H.009859.5: Load Rating of 311 Bridges, Statewide, LA** The scope of work was to analyze and load rate 653 (342 additional bridges added to the contract) existing off-system bridge structures. The load rating was performed using AASHTOWare Bridge Rating Software. The load rating consisted of concrete slab spans, steel spans, concrete girder spans, pile bents, and hammer head piers. **Role(s):** • Perform load rating of concrete bridges and simply supported and continuous steel bridges. • Perform in-depth field inspection & collect field measurements of bridges with missing plans. • Collect rebar data of concrete structures with missing plans using Ground Penetrating Radar (GPR).
11/19–10/20	**H.009859.5: Evaluation & Load Testing of Substructure of Nine Bridges, Statewide, LA** The scope of work was to evaluate nine (9) substructures to determine the actual settlement of the substructures through proof load testing. The evaluation was carried out utilizing load rating analysis and load testing coupled with detailed 3-D Finite Element Analysis. The settlement of every pile of the critical bent was measured using LVDT displacement devices. **Role(s):** • Develop substructure models using RC-Pier. • Coordinated and procured services relevant to the load test (Traffic Control, etc.). • Processed and interpretated load testing results. Prepared final reports summarizing the findings from the load test(s) and determined the adequacy of the bridge's performance based on the field measurements.

05/21 – Present	**H.009859.5: Load Rating & Rehabilitation of LA 3094 Bridge Over KCS RR, Caddo Parish, LA** The scope of work was to perform an in-depth inspection and evaluation of the steel superstructure deemed to be in critical condition and posted for a weight of 15-25 tons. The findings from the inspection were applied in the evaluation of the continuous superstructure consisting of utilizing load rating analysis and load testing coupled with detailed 3-D Finite Element Analysis. Furthermore, based on the analysis of the load testing SDR was tasked with providing detailed rehabilitation plans to maintain the structural integrity of the bridge for the remainder of its service life. **Role(s):** • Processed and interpretated load testing results. • Develop AASHTOWare model, incorporating section loss and conducted load rating analysis. • Develop Rehabilitation Plans and perform cost estimate/determine quantities. Prepared final reports summarizing the findings from the load test(s) and determined the adequacy of the bridge's performance based on the field measurements.
06/22 – Present	**H.012485.1: Load Testing & Evaluation of 19 Bridges, Statewide, LA** The scope of work includes general inspection and evaluation of 19 bridges with the aim of avoiding load posting by evaluating the strength/load distribution of the bridge not accounted for using the approximate method by means of finite element analysis and load testing. The 19 bridge types vary from box culverts, prestressed channel units, to steel I-beam spans with timber and concrete substructure elements. SDR is tasked with performing the higher-level analysis and providing a comprehensive report detailing the results from the field and suggestions for improved/removal of posting. **Role(s):** • Assist in processing and interpretating load testing results. • Perform in-depth QC of reports finalized by other engineers.
05/22	**Load Test of Emergency Repair of Substructure, I-75 over Hinson Slough, Florida** The work was part of an emergency repair of an intermediate concrete bent impacted by a tractor trailer severely damaging the cap and adjacent piles. SDR was responsible for all elements of the emergency rehabilitation design which included CFRP to strengthen the cap and piles and the design of a steel bracket to support the slab units shifted forward due to the impact damage. Per the FDOT's request, upon the conclusion of the emergency repair a load test was conducted to evaluate the health of the repaired structure. A focus was placed on measuring settlement of the damaged piles and evaluating the demand acting on the damaged portion of the cap. • Develop substructure model using RC-Pier. • Processed and interpretated load testing results. Assisted in the preparation of the final report summarizing the findings from the load test(s) and determined the adequacy of the repaired substructure performance based on the field measurements.

Firm employed by FORTE & TABLADA			
Name	Russell J. "Joey" Coco, Jr., P.E., MBA	Years of relevant experience with this employer	9
Title	President/CEO	Years of relevant experience with other employer(s)	13
Degree(s) / Years / Specialization		BSCE / 2000 / Civil Engineering; MBA / 2006 / Business Administration Coastal Engineering Certificate / 2008 / Old Dominion University	
Active registration number / state / expiration date		31337 / LA / 09/30/2022	
Year registered	2004	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		Principal-in-Charge; Joey, who is a registered civil engineer, will ensure that QA/QC procedures are followed and that the project isdelivered per the contract requirements.	

Experience dates (mm/yy–mm/yy)	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).
10/18-12/18	400010587-Sunshine Bridge Repair-St. James Parish, LA-LADOTD-Principal overseeing topographic surveying and terrestrial LIDAR services for the LA DOTD Sunshine Bridge Emergency Repair project following the severe impact of a barge mounted crane with the lowest horizontal bridge chord.
11/19-11/20	S.P. No. H.012083.5-Calcasieu River Bridge Investigation-Calcasieu Parish, LA-LADOTD-Principal overseeing laser scanning services for the I-10/Lake Calcasieu bridge in Lake Charles, LA.
05/17-10/17	S.P. No. H.013052-LA 442 Tangipahoa River Bridge Replacement-Tangipahoa Parish, LA-LADOTD-Principal overseeing topographic surveying for the LA 442 bridge over the Tangipahoa River. The survey included numerous cross-section surveys upstream and downstream of the bridge, as well as the along the bridge fascia. The work was performed utilizing shallow, flat-bottomed boats as a result of the shallow and sandy river bottom and was provided to engineers for the purpose of hydraulic analysis and bridge preservation and replacement considerations.
08/19-1/20	H.011670-I-10/Loyola Interchange Improvements -Kenner, LA –Principal-in-Charge overseeing Topographic Survey, Right-of- Way Survey, and Drainage Survey. The project stretches from the levee in Kenner to the Williams Blvd. off ramp, as well as Loyola Avenue and portions of Veterans Blvd.
11/18-04/19	H.011684.5-LA 327 Spur: Staring Lane Extension –East Baton Rouge Parish –Principal-in-Charge for comprehensive topographic surveying services and developing a drainage map for the Staring Lane Extension project for LA DOTD. Included in this work was a survey performed utilizing traditional methods and terrestrial laser scanning of roadway surfaces.

09/17-12/19	S.P. No. H.011808.5- Palmetto Co. Canal Bridge - St. Landry Parish, LA - Principal-in-Charge to provide property surveys, title take-offs, and right-of-way map services for the removal and replacement of a timber trestle bridge that spans Bayou Des Glaises, located along La. Hwy. 10 in St. Landry Parish near the town of Palmetto, La.
06/18-12/19	LA 98: Roundabout at Mills St - Lafayette Parish, LA – Principal-in-Charge for right of way surveys for this project that requires construction of new roundabout at the intersection of Mills Street and W. Gloria Switch Road (LA Hwy 98) in Lafayette Parish, Louisiana.
05/17-10/18	H.004791.5-Belle Chasse Bridge and Tunnel Replacement Survey- Plaquemines Parish, LA- Principal-in-charge for comprehensive topographic surveying services for the Belle Chase Bridge and Tunnel Replacement project for LA DOTD. Included in this work was a survey performed utilizing traditional methods, terrestrial laser scanning of roadway surfaces, and multi-beam 3-D hydrographic surveying.
06/17-02/19	Amite River Basin Model- Hydrographic Survey - Livingston Parish, LA- Principal-in-Charge to provide hydrographic surveying of the Amite River and Comite River. Tasks included typical cross-sections of these rivers, as well as detailed 3-D bathymetric data collected with sonar equipment, ground control for LIDAR of the Amite River Basin, and a high- resolution survey of the Amite River Diversion Weir utilizing a variety of techniques including multi-beam sonar and traditional survey methods.
10/18-7/21	East Baton Rouge Stormwater Masterplan - East Baton Rouge Parish, LA- Principal-in-Charge for hydrographic surveying of bayous and creeks located within East Baton Rouge Parish for the EBR Stormwater Masterplan. The work consists of establishing cross-sections and stream bed profiles along their length.
02/17-03/18	H.010753.5 – US 90 / I-310 Interchange – St. Charles Parish, LA – LA DOTD – Principal-in-Charge responsible for topographic surveying and 3-D laser scanning at the intersection of US90 and I-310 in St. Charles Parish. This project will allow improvements for safety and efficiency. The complete topographic survey includes all utilities with depths and all drainage required along with finish floor elevations of all buildings that fall within the survey limits.
08/14-Ongoing	H.004273.5 – I-49 Connector – Lafayette Parish, LA – LA DOTD – Principal-in-Charge responsible for providing topographic surveying services for the I-49 Connector. The project is in a dense urban area and is approximately 5 miles long. Forte and Tablada, Inc. completed laser scanning services for much of the congested corridor as a means to obtaining topographic data without endangering surveyors.
05/13-Ongoing	Old Hammond Highway – Segment 1- East Baton Rouge Parish, LA- Principal-in-Charge for an environmental study and engineering services to design and construct a four-lane boulevard with a raised median and turn lanes and includes several roundabouts. The project will also include traffic signalizations, utility relocations, testing, lighting, landscaping, right-of-ways, and environmental mitigation. This project is part of the Green Light Plan.
01/10-12/12	S.P. No. 450-10-0159- I-10: Siegen Lane to Highland Road Design Build ITR — East Baton Rouge Parish, LA – LA DOTD – Served as leader of Independent Technical Review of all bridge structures.

Firm employed by FORTE & TABLADA			
Name	Joffrey E. Easley, P.E., M.S.	Years of relevant experience with this employer	14
Title	Supervisor Engineer	Years of relevant experience with other employer(s)	3
Degree(s) / Years / Specialization		BSCE / 2000 / Civil Engineering MSCE / 2003 / Civil Engineering	
Active registration number / state / expiration date		31542 / LA / 03/31/2023	
Year registered	2004	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			

Experience dates (mm/yy–mm/yy)	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).
01/16-01/21	Whittington Road Bridge Replacement – Livingston Parish, LA – Design engineer for the replacement of an existing timber bridge over Grays Creek with a new concrete slab span bridge through the LADOTD off-system bridge replacement program.
01/14-01/20	Travis Street and George Mashon Road Bridge Replacement – Livingston Parish, LA – Design engineer for the replacement of two (2) timber bridges with concrete box culverts (Travis Street) and a curved concrete slab span bridge (George Mashon Road) through the LADOTD off-system bridge replacement program.
12/12-01/22	Cook Road Expansion – Designed and produced plans for new bridges over Gray's Creek to provide additional access to the Juban Crossing shopping center by extending Cook Road off of Pete's Highway. Bridge includes special details to accommodate sidewalks for pedestrian use.
01/18-09/17	Holly Drive Bridge Replacement- St. Tammany Parish, LA– Developed plans for the replacement of an existing timber bridge in St. Tammany Parish, Louisiana. Provided a load rating for the new design of the bridge.
01/14-01/20	Buddy Ellis Road Overlay and Bridge Replacement – Livingston Parish, LA – Design engineer for the replacement of the existing timber bridge on Buddy Ellis Road near LA Highway 447 in Livingston Parish.
01/14-01/21	Forrest Delatte Road Improvements and Bridge Replacement – Livingston Parish, LA – Design engineer for the replacement of the existing timber bridge over Grays Creek on Forrest Delatte Road in Livingston Parish.
06/15-06/16	East Baton Rouge Parish Bridge Replacements – Provided design services and load rated multiple slab span bridges that incorporated sidewalks. Design services included determination of pile loads, superstructure and substructure design, and independent technical review of completed plans.
01/13-06/14	Wax Road Bridge over Miller Canal, Livingston Parish, LA – Bridge design engineer for the replacement of the Wax Road bridge over Greys Creek in Livingston Parish.
10/18-05/19	H.000445.1-1- US 190 over UPRR and Little Teche Bayou, St. Landry Parish, LA - Project Engineer for this project that developed a scoping document for the replacement or rehabilitation of the EB and WB US 190 bridges

	over the Union Pacific Railroad (UPRR) near I-49 and over Little Teche Bayou in St. Landy Parish, LA. Based on the findings, a Bridge Evaluation Report outlining the feasibility and preliminary cost estimates for several construction phasing alternatives, as well as a recommended scope of work, was developed.
03/18-Ongoing	LA DOTD Retainer Contract for Off-System Bridge Load Rating – Statewide, LA – Project Manager, Load Rating Engineer, and Team Leader for a retainer contract that includes multiple Task Orders to inspect and load rate off-system bridges and culverts across the state. Task Order 1 – Inspection and load rating of 12 complex off-system bridges, including lift spans, swing spans, bascule spans, ferry landings, and truss bridges; Task Order 2 – Inspection and load rating of approximately 200 off-system bridges, consisting primarily of slab spans; Task Order 4 – Inspection and load rating of approximately 300 off-system bridges, consisting primarily of slab spans, but also including concrete and steel girder spans.
08-19-02/20	LA DOTD Retainer for In-Depth Bridge Inspections – Simmesport, LA – Inspection of the approach spans, consisting of rolled steel and plate girder spans supported by column bents, of the LA 1 bridge over the Atchafalaya River.
01/21-09/21	Retainer for Bridge Preservation – US90Z: Westbank Expressway Rehab, Jefferson Parish, LA- Project Manager to develop plans for the rehabilitation of the nearly 6-mile long Westbank Expressway in Jefferson Parish, LA.
105/1-04/19	LA DOTD Retainer Contract for Bridge Preservation – Atchafalaya Floodway- Project Manager to provide engineering services for the rehabilitation of multiple bridges along I-10 between Baton Rouge and Lafayette. Bridge types included PPC and steel girder spans, steel grid deck, and slab spans. Scope of work included performing a detailed inspection, documenting deficiencies, and preparing rehabilitation plans for all bridges.
05/16-10/19	Retainer Contract for Complex Bridge Rating, Statewide, LA- LA DOTD- Project Manager to perform a load rating for the US 90 West Middle River Bridge near the Louisiana/Mississippi border.
11/14-08/16	Westdale Road over Bayou Pierre Repairs – DeSoto Parish, LA – Inspected, laser scanned, developed plans, and provided construction administration services for the repairs of a timber bridge that had been closed due to its deteriorated condition. Provide a load rating following the completion of the repairs. Repairs allowed the bridge to be re-opened to vehicular traffic.
06/16-04/20	St. Tammany Parish Off-System Bridge Load Ratings, St. Tammany Parish, LA - Project Manager to collect all available bridge files from all available resources, including LADOTD and Parish records, for numerous slab span, girder, and railcar bridges in St. Tammany Parish and perform inspections and load ratings for the bridges.
11/16-10/20	Livingston Parish Off-System Bridge Load Ratings – Livingston Parish, LA – Inspection and load rating of numerous existing slab span bridges and culverts so that Livingston Parish would follow FHWA Metric 13, which requires all Off-System bridges to be load rated.

Firm employed by FORTE & TABLADA					
Name	Levi Yantis, P.E.			Years of relevant experience with this employer	7
Title	Bridge Engineer			Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization			BSCE / 2013 / Civil Engineering		
Active registration number / state / expiration date			42390 / LA / 09/30/2024		
Year registered	2018	Discipline	Civil Engineering		
Contract role(s) / brief description of responsibilities			Bridge Engineer		

Experience dates (mm/yy–mm/yy)	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).
02/22-Ongoing	Ascension Parish Load Ratings – Ascension Parish, LA – Team leader for the inspection of Ascension Parish owned bridges. Also serving as the lead load rating engineer for the bridges after inspection.
01/22-Ongoing	Mall of Louisiana Boulevard Modified Bent Redesign - East Baton Rouge Parish, LA - Redesigning a bent cap that had a pile misdriven during PDA. Pile load checks and a modified bent load rating were performed also.
03/18-Ongoing	LA DOTD Retainer Contract for Off-System Bridge Load Rating – Statewide, LA – TO1 – Led and assisted in 12 complex moveable bridge inspections and load ratings throughout the state. The bridge types included a single leaf bascule span, a vertical lift truss span, several steel vertical lift spans, multiple pontoon bridges, a steel plate girder swing bridge, a small steel truss/cable swing span, and a non-moveable steel truss. Task Order 2 – Led and supervised the load ratings of 200 off-system slab span bridges throughout the state of Louisiana. To avoid posting bridges lower than necessary, bridge inspections were done for several bridges that had severe deterioration noted in their inspection reports to collect additional deterioration measurements to accurately determine the bridge member's load carrying capacity. Task Order 5 – Load testing and refined load rating analysis of slab span bridges and culverts that previously received low or closed load postings.
03/21-10/21	TDOT Complex and Standard Bridge Load Ratings - Statewide, TN - Oversaw a team of load raters performing 35 AASHTOWare BrR load ratings in 4 months and was responsible for the quality control of the model inputs and outputs, troubleshooting bridge models, and assisting in load ratings. The bridge types load rated using AASHTOWare BrR software were prestressed I-beams and box girders, reinforced concrete multi-cell box bridges, reinforced concrete T-beams, continuous steel plate girders, and steel girder-floorbeam-stringer systems.
01/20-10/21	LA DOTD Retainer for Complex In-Depth Bridge Inspections – Statewide, LA – Served as Team Leader for the structural, mechanical and electrical in-depth inspections for multiple movable bridges. Bridge types included vertical lift span bridges and steel swing bridges (through girders and through trusses). Also served as the task manager for preparing the in-depth inspection reports. There was also a task order under this contract to perform emergency repairs on an US 71 Bridge in Shreveport, LA. Led the superstructure design for the emergency repairs.

01/20-10/21	Florida Department of Environmental Protection (FDEP), Palatka Trail Pedestrian Bridge - Served as lead structures designer for a two-span, 210' structure over US-601. The two-span structure includes the design of FIB concrete girders with an intermediate hammerhead pier, pile supported stub abutments and wrap-around MSE retaining walls.
01/20-12/20	TDOT Complex Bridge Load Ratings – Statewide, TN – This project was to load rate a total of 41 complex bridges within a short time period to help the State meet a critical FHWA Deadline. Levi was involved in the quality control process of multiple bridge load ratings.
06/16-04/20	St. Tammany Parish Off-System Bridge Load Ratings, St. Tammany Parish, LA – Led and assisted in bridge inspections and served as the load rating engineer for bridges throughout the parish of St. Tammany. The bridge types include slab spans, prestressed girder spans, and bridges constructed from retired railroad flatcars.
05/16-10/19	Retainer Contract for Complex Bridge Rating, Statewide, LA- LA DOTD – Bridge inspector and load rater for a through truss bridge over a branch of the Pearl River. The bridge consisted of 3 pony truss spans and reinforced concrete T-beams and was load rated utilizing AASHTOWare BrR, Leap Bridge Concrete and Mathcad software.
11/18-12/18	Port of New Orleans, St. Claude Avenue Bridge Permit Load Rating, New Orleans, LA - Performed a permit load rating for an overload vehicle to safely pass the single bascule span on St. Claude Avenue.
03/14-03/17	LA DOTD Load Rating of On-System Bridges – Statewide, LA – LA DOTD – Assisted in load rating of approximately 200 existing bridges across the state of Louisiana. Bridges range from slab span bridges on local roads to elevated curved steel interstate bridges in metropolitan areas.
12/17-Ongoing	Cook Road Expansion – Slab span superstructure and pile bent substructure design. Also assisted in the bridge plan development.
12/13-05/14	Million Dollar Road Bridge Rating - St. Tammany Parish, LA - Assisted in the field inspection of the bridge and carried out the structure's substructure load rating.

Firm employed by FORTE & TABLADA			
Name	Brent M. Campbell	Years of relevant experience with this employer	10
Title	Advanced Measurements and Modeling Technician	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		Bachelor of Science in Construction Management / 2013	
Active registration number / state / expiration date		N/A	
Year registered	N/A	Discipline	Advanced Measurements and Modeling
Contract role(s) / brief description of responsibilities		LIDAR Specialist	

Experience dates (mm/yy–mm/yy)	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).
05/19-09/19	Danziger Bridge Rehabilitation - Orleans Parish, LA- Laser scanning and project technician for survey investigation of Danziger Bridge. Included laser scanning and comparison of actual conditions to original plans.
02/22-08/22	Merryville Aerial LiDAR - Beauregard Parish, LA - Advanced Measurements technician for UAV based aerial LiDAR to quickly capture the site topography. The project included flying approximately 175 acres in Merryville, LA to provide a bare earth model to our engineers. The surface model was used for preliminary site design and drainage flow characteristics.
10/19-10/20	Inspection of Metal Culverts - Statewide, LA - Laser scanning technician to provide inspections and data acquisition for approximately 230 culvert locations statewide. Culvert measurements were acquired with a mixture of 3-D laser scanning, sonar, and LiDAR.
01/13-03/13	I-10 (Highland to LA 73) – East Baton Rouge and Ascension Parishes, LA – LA DOTD – Responsible for laser scanning of several bridges overpassing I-10, and extracting/coding survey coordinates and alignments. Also determined minimum horizontal and vertical clearances.
09/21-10/21	Westbank Closure Complex Multi-Beam Hydrographic Survey - Belle Chasse, LA - Served as Advanced Measurements technician for a comprehensive survey for a global depiction of scour. Scour results were presented in a color ramped elevation map, as well as imagery showing the presence of debris on an intake screen. Survey was performed using a shallow draft vessel equipped with advanced multi-beam equipment.
01/22-04/22	Hat Creek Permit Survey - Bossier Parish, LA - Advanced Measurements technician for UAV based aerial LiDAR and hydrographic surveys to provide plan and profile plans for permitting purposes. The project included flying approximately 200 acres on the Red River to provide a bare earth model to our engineers. This method allowed us to rapidly capture survey grade data versus traditional survey methods. A hydrographic survey of the Red River was performed using a sonarmite mounted on a shallow water vessel due to the low levels of the river. This

	hydrographic survey data was also provided to our engineers where it was integrated with the aerial LiDAR to provide the client with plan and profile plans for permit applications.
02/17-03/18	US 90 / I-310 Interchange – St. Charles Parish, LA – LA DOTD – Project Technician responsible for topographic surveying and 3-D laser scanning at the intersection of US90 and I-310 in St. Charles Parish. This project will allow improvements for safety and efficiency. The complete topographic survey includes all utilities with depths and all drainage required along with finish floor elevations of all buildings that fall within the survey limits.

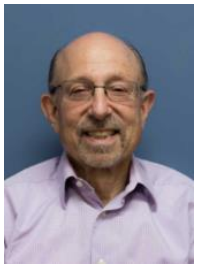
Firm employed by FORTE & TABLADA					
Name	Blake Bonnette			Years of relevant experience with this employer	6
Title	Advanced Measurements and Modeling Senior Technician			Years of relevant experience with other employer(s)	1.5
Degree(s) / Years / Specialization			South Louisiana Community College / Lafayette / 2015		
Active registration number / state / expiration date			N/A		
Year registered	N/A	Discipline	Advanced Measurements and Modeling		
Contract role(s) / brief description of responsibilities			UAV Head Pilot		

Experience dates (mm/yy–mm/yy)	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).
05/19-09/19	Danziger Bridge Rehabilitation - Orleans Parish, LA- Laser scanning and project technician for survey investigation of Danziger Bridge. Included laser scanning and comparison of actual conditions to original plans.
10/19-10/20	Inspection of Metal Culverts - Statewide, LA - Laser scanning technician to provide inspections and data acquisition for approximately 230 culvert locations statewide. Culvert measurements were acquired with a mixture of 3-D laser scanning, sonar, and LiDAR.
01/16-02/18	I-49 Connector – Lafayette, LA – Laser scanning technician to develop the topographic survey of approximately 22 miles of roadway along this interstate to determine the existing conditions before finalizing the connection. Responsible for the data and leading the data extraction efforts using Faro Scene and MicroStation
08/22-09/22	Leonard Road Farm and Cupples Port Aerial Lidar – Shreveport, LA – Project Technician responsible for preforming aerial lidar on 700+ acres and processing the data to produce surfaces and calculate dirt fill amount to alleviate flooding.
10/18-05/19	Sunshine Bridge Emergency Repair – Donaldsonville, LA – Laser Technician to worked with a design team to formulate a practical solution for attaining advanced measurements that were compatible with traditional measuring practices which were required for the structural analysis and repair design for the bridge. My Responsibilities included My major role in this project was creating a set of plans to document the damage on this bridge. These plans contained detailed information on structural strain and inconsistencies from original plans. Additionally, I helped to scan for incremental bridge movement as well as monitoring bridge movement as LADOTD jacked on members to place new beams using Faro Scene and MicroStation.

Firm employed by Infrasense, Inc.					
Name	Adam Carmichael		Years of relevant experience with this employer	15	
Title	President & Operations Manager		Years of relevant experience with other employer(s)	0	
Degree(s) / Years / Specialization			M.B.A., Babson College, 2014 B.S., Civil Engineering, Worcester Polytechnic Institute, 2008		
Active registration number / state / expiration date			N/A		
Year registered	N/A	Discipline	N/A		
Contract role(s) / brief description of responsibilities			Infrasense Project Manager - contract administration and operations management for NDT/E of Structures (GPR, IR, HRV, IE, US, Acoustic)		

Experience dates (mm/yy–mm/yy)	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).
07/22-09/22	Project Manager for North Dakota DOT aerial infrared condition scanning of 89 bridge decks along I-29 and I-94.
05/22-07/22	Project Manager for Montana DOT's bridge deck testing on-call contract. Results of this project included deck condition maps generated with GPR, IR, visual imagery, and acoustic data. Targeted concrete sampling is also performed for chloride concentration testing.
02/22-9/22	Project Manager for West Virginia DOT Engineering Services On-Call Contract for Bridge Deck Surveys and other NDE Services.
07/21-10/21	Project Manager for network-level evaluation of the Elizabeth River Crossings (ERC) roadways, bridge decks, and tunnel. NDE methods included GPR, IR, and HRV.
04/19-05/19	Infrasense Project Manager for NDE of Bay Area bridge decks, including the Richmond-San Rafael and Oakland Bay Bridge (West span). Approximately 12 million square feet of bridge deck was surveyed as part of this data collection.
10/18-9/22	Project Manager for Wisconsin DOT Bridge Deck Survey Inspection Master Contracts.
06/19-06/20	Infrasense Project Manager for LADOTD IDIQ Contractor No. 4400015262 for Nondestructive Evaluation of Structures Statewide. (sub to BDI) where Infrasense completed GPR, IR, and HRV data collection, analysis, and report for the Vicksburg, Lake City, and Grand Ecore bridge decks.

06/18-08/18	Infrasense Project Manager for condition assessment of the Blatnik Bridge deck in Duluth, Minnesota using NDE methods including ground penetrating radar (GPR), infrared thermography (IR), and high resolution visual (HRV).
05/18-08/18	Infrasense Project Manager for condition assessment of the Delaware Memorial Bridge deck using NDE methods including GPR, IR, and HRV.
03/18-04/18	Project Manager for the evaluation of five (5) bridge decks in Dallas, Texas using NDE methods including IR and HRV. Results included quantities and maps of delamination, spalling, and patching.
11/17-12/17	Infrasense Project Manager for condition assessment of seven (7) bridge decks in Post Falls, Idaho using NDE methods including infrared thermography (IR) and high resolution visual (HRV).
04/17-12/17	Project Manager for the evaluation of the Hampton Roads Tunnel in Norfolk, VA using 3D-GPR, IR, HRV, and impact-echo (IE) testing to map subsurface delaminations, moisture intrusion, corrosion activity, and voids.
11/16-01/17	Infrasense Project Manager for condition assessment of the Blue Creek Bay Bridge deck in Coeur d'Alene, Idaho using NDE methods including GPR, IR, and HRV.
03/16-07/16	Project Manager for the evaluation of fourteen (14) bridge decks using NDE methods including GPR, IR, HRV, and IE.
03/15-12/15	Project Manager for Downtown Las Vegas Viaduct deck evaluation using GPR, IR, HRV, and impact-echo (IE) testing to quantify and map delamination, spalling, corrosion activity, and rebar cover.
06/15-12/15	Project Manager for I-80 Corridor deck evaluations in Wyoming, which included NDE scanning methods such as GPR, IR, and HRV to map delamination, spalling, corrosion activity, and rebar cover.
2007-2018	Responsible for data collection and analysis using various NDE methods on over 800 bridge decks and a number of other concrete structures including tunnels, parking facilities, and buildings.

Firm employed by Infrasense, Inc.					
Name	Ken Maser		Years of relevant experience with this employer	34	
Title	Senior Principal		Years of relevant experience with other employer(s)	17	
Degree(s) / Years / Specialization			B.S., Civil Engineering, The Cooper Union, 1966		
Active registration number / state / expiration date			PE #31834, Massachusetts		
Year registered	1984	Discipline	Structural		
Contract role(s) / brief description of responsibilities			Technical Oversight, Quality assurance of NDE deliverables, and quality control for NDE data collection and analysis efforts.		

Experience dates (mm/yy–mm/yy)	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).
3/22-4/22	Technical Oversight and QA of deliverables for Church Street Viaduct condition evaluation on US-29 in Greenville, SC.
9/21-1/22	Technical Oversight and QA of deliverables for aerial infrared survey of 199 bridge decks throughout Rhode Island.
10/19-12/19	Technical Oversight and QA of deliverables for Bennett and Wallace Bridges in Idaho (sub to BDI).
10/18-9/22	Technical Oversight and QA of deliverables for Wisconsin DOT Bridge Deck Survey Inspection Master Contracts.
07/20-09/20	Technical Oversight and QA of deliverables for Verrazzano Narrows Bridge in New York.
04/19-05/19	Infrasense Technical Oversight/ QA Review for NDE of Bay Area bridge decks, including the Richmond-San Rafael and Oakland Bay Bridge (West span). Approximately 12 million square feet of bridge deck was surveyed as part of this data collection.
01/07 – 10/18	Project Manager for Wisconsin DOT Bridge Deck Survey Inspection Master Contracts.
01/09 – 12/13	Served as a consultant to Northeastern University under the NIST VOTERS project to develop advanced automated systems for evaluation the condition of bridge decks. The work involved using a wide range of test methods, including GPR, impact-echo, half-cell potential, and chloride concentrations. The project led to the development of more a more advanced method for bridge deck evaluation, and the paper describing this work was given the "ASNT Outstanding Paper Award"
08/13 – 01/16	Project Manager for Montana Department of Transportation's Bridge Deck Delamination Mapping Term Contract.

04/10 – 10/18	Project Manager on three multi-year bridge deck condition evaluation projects with the Ohio DOT District 1.
08/10 – 09/10	Project Manager for Chesapeake Bay Bridge Tunnel roadway evaluation. Responsible for GPR condition survey of the roadway decks of two tunnels, each approximately 5000 feet long. Work also included surface visual maps of the roadway surface.
05/09 – 09/11	Project Manager for condition evaluation of 181 bridge decks in Minnesota. Dr. Maser worked directly with MnDOT, carrying out GPR and infrared condition surveys in very high-volume traffic condition, mostly in the Metro twin cities areas. A condition report was provided for each bridge, including summary of deterioration quantities and maps of deterioration and rebar depth.
1984-2018	Responsible for nondestructive evaluation of over 1500 bridge decks and a number of other concrete structures including tunnels, parking facilities, and buildings. Dr. Maser is an internationally recognized authority in the field of nondestructive evaluation of structures and construction materials. He has developed and put into practice techniques for bridge and pavement evaluation and is the holder of two U.S. patents. Throughout his career he has managed numerous programs, with budgets ranging from $20,000 to $2,000,000.

Firm employed by Infrasense, Inc.					
Name	Evan Guarino		Years of relevant experience with this employer	11	
Title	Senior Project Engineer		Years of relevant experience with other employer(s)	11	
Degree(s) / Years / Specialization			M.S., Civil Engineering, Worcester Polytechnic Institute, 2010 B.S., Civil Engineering, Worcester Polytechnic Institute, 2011		
Active registration number / state / expiration date			PE #57489, Massachusetts		
Year registered	2022	Discipline	Transportation		
Contract role(s) / brief description of responsibilities			NDE Data Collection and Analysis		

Experience dates (mm/yy–mm/yy)	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).
05/22-07/22	Data Analysis for Montana DOT's bridge deck testing contract. Results of this project included deck condition maps generated with GPR, IR, visual imagery, and acoustic data.
04/21-06/21	Project manager for NDE condition testing of major highway interchange in Connecticut using ground penetrating radar (GPR). Bridge decks were evaluated for deteriorated concrete, and pavements were evaluated for potential moisture ingress, voids, and stripping.
06/20-11/20	Data Analysis for aerial infrared and visual surveys of over 650 bridge decks across the state of Wisconsin. IR and HRV data was collected from a fixed-wing aircraft at an altitude of 1000 feet, and imagery was processed and analyzed to quantify delamination quickly and efficiently.
05/20-07/20	Data collection and analysis lead for NDE testing of the Verrazzano Narrows lower deck using ground penetrating radar (GPR) and high resolution visual (HRV) testing methods. Initial results were used to direct confirmative coring and Half Cell Potential (HCP) testing.
04/19-05/19	Data collection lead of NDE condition testing of Bay Area bridge decks, including the Richmond-San Rafael and Oakland Bay Bridge (West span). Approximately 12 million square feet of bridge deck was surveyed as part of this data collection.
09/19-11/19	Data collection and analysis lead of NDE condition testing of the Clark Fork bridge on I-90 outside of Missoula, Montana. Delaminated and deteriorated concrete was mapped using GPR and IR data collected at normal highway speeds.

08/18-11/18	Data collection and analysis lead of NDE condition testing of a Main Street bridge deck in Deadwood, South Dakota. The project consisted of two phases: the first phase included vehicle-based GPR and IR testing, and the second phase included targeted chloride ion concentration and resistivity testing.
04/17-05/17	Data collection lead of tunnel condition analysis of the Hampton Roads Tunnel. High speed 3D radar was deployed to evaluate the tunnel deck, and vehicle-mounted IR and HRV systems were used to evaluate tunnel walls.
05/15-08/15	Data collection lead for Wisconsin DOT bridge deck testing using vehicle based NDE (GPR, IR) and targeted confirmative testing using sounding and ultrasonic Impact Echo testing. Testing was performed on over 100 decks.
01/14	Data collection and analysis of Impact Echo ultrasonic testing to identify debonding of frozen asphalt overlay of the Leo Frigo bridge deck. Work was performed during a bridge closure for pier repairs, and subzero temperatures created unique conditions for using ultrasonic testing on asphalt.
2011-2022	Responsible for nondestructive data collection, analysis, or project management of over 3000 bridge decks representing over 38 million square feet. Mr. Guarino has also collected and analyzed NDE data on a number of other concrete structures including tunnels, parking facilities, and buildings.

Firm employed by Infrasense, Inc.					
Name	Keith Sorota		Years of relevant experience with this employer	7	
Title	Project Engineer		Years of relevant experience with other employer(s)	8	
Degree(s) / Years / Specialization			B.S., Geoscience, University of Massachusetts: Lowell, 2007		
Active registration number / state / expiration date			N/A		
Year registered	N/A	Discipline	N/A		
Contract role(s) / brief description of responsibilities			NDE Data Collection & Analysis		

Experience dates (mm/yy–mm/yy)	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).
03/22 – 04/22	Project Manager, data collection, and analysis for a multi-frequency GPR project in Clinton, MA. Project scope included the condition assessment of concrete floor slabs, including reinforcement spacing, and also map bedrock depth below the basement floor. The large warehouse was to be repurposed and the results of our survey provided important structural information for the design phase.
01/22 – 02/22	Project Manager, data collection, and analysis for a comprehensive concrete condition assessment at Madison Square Garden in NY. The GPR survey included staging and delivery areas adjacent to the main Garden floor.
1/22-1/22	Data collection and analysis to locate and map the rebar (i.e., spacing and depth) and estimate the concrete compressive strength in the deck, beams, and abutments for bridge in Butler County, PA. Results were used for load rating.
12/21 – 01/22	Project Manager for a retaining wall survey in Fairfield, CT. Multi frequency GPR in combination with Impact Echo was used to determine the thickness and condition of retaining walls prior to removal of an integrated building wall section.
10/21 – 11/21	Project Manager, data collection, and analysis for multi-site SUE survey to identify utilities and buried obstructions prior to renovations of 4 ventilation buildings for the Callahan and Sumner Tunnels in Boston, MA
04/21 – 04/21	Project Manager and data analysis for an emergency void location survey where renovations were halted when equipment breached the surface into a void created by tidal flow along a seawall in Portsmouth, VA
9/20-3/21	Data collection and analysis for comprehensive testing of Roosevelt Bridge deck and box beams using infrared thermography (IR), impact-echo (IR), ground penetrating radar (GPR), and acoustic methods in Stuart, FL.
01/20 – 03/20	Data collection and analysis for structural investigation into the thickness of lower flange of box girders of three large bridges in Rhode Island to confirm proper specifications were adhered too during construction after multiple faulty boxes were found

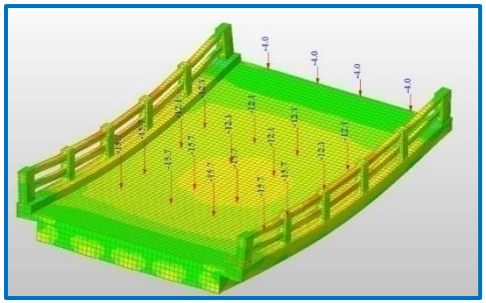
7/19 – 10/19	Data collection and analysis lead for ground penetrating radar (GPR) data collection, quality assurance, and analysis for geophysical site investigation 22+ acres of concrete apron adjacent to the international terminal at the San Francisco International Airport. The primary goal was to located buried structures, and changes in the pavement construction from years of rehabilitation and expansion work.
09/18 –12/18	HRV data collection and analysis for 136 Michigan DOT bridge decks (sub to BDI).
09/18 – 10/18	Analysis and reporting to evaluate the condition of a bridge deck in Norfolk, Virginia using GPR, half-cell potential (HCP), chloride ion concentration measurements, and core samples.
07/18 – 09/18	Data collection and analysis lead for ground penetrating radar (GPR) data collection, quality assurance, and analysis for geophysical site investigation of the 4 Main runways, two primary taxiways and large apron area at the San Francisco International Airport.
07/18 – 08/18	Data analysis lead for geophysical investigation to assess load ratings for a concrete box beam bridge structure in Fond du lac, Wisconsin
03/18 – 05/18	Analysis lead for geophysical investigation to assess condition and load ratings for a historical stone archway bridge structure in Kentucky.
01/18 – 02/18	Analysis lead of ground penetrating radar (GPR) stratigraphy mapping for the installation of a 2-mile pipeline to assess the depth to bedrock and obstructions along the route
04/17 - 01/18	Analysis lead for 3-D ground penetrating radar (3D-Radar) and impact-echo (IE) data collection to identify areas of moisture intrusion, delamination, and voiding in Hampton Roads Tunnel walls in Norfolk, VA
11/17 – 04/18	Project Manager for ground penetrating radar (GPR) structural analysis of approximately 70 lane miles of interstate 64 in Norfolk, VA
02/17 – 11/17	Data collection and analysis lead to map deterioration, areas of corrosion activity, and rebar depth in Florida DOT bridge decks.
Project Highlights (2015-2016)	GPR data collection of 52 bridges and 500 miles of pavement in northeastern Idaho. GPR void detection survey under runway at the Andrew AFB in Maryland. Infrared thermography (IR) and high-resolution visual (HRV) analysis lead, phase 2 detailed ground penetration radar collection and analysis of over 1.3 million square feet of the I-947 Complex is Las Vegas, Nevada. Infrared thermography (IR) and high-resolution visual (HRV) analysis lead, phase 2 detailed ground penetration radar collection and analysis of over 1.3 million square feet of the I-947 Complex is Las Vegas, Nevada.

17. Firm Experience:

Firm name	SDR Engineering Consultants, Inc.			Past Performance Evaluation Discipline(s)	Bridge
Project name	**Long-Allen Bridge (LA 182 over Atchafalaya River-Berwick Bay)**			Firm responsibility (prime or sub?)	Prime
Project number	H.011487	Owner's name	LADOTD		
Project location	Lafayette Parish, LA		Owner's Project Manager	Chris Guidry, PE	
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, (225) 379-1329, Chris.Guidry@LA.GOV				
Services commenced by this firm (mm/yy)	10/2018	Total consultant contract cost ($1,000's)		$946	
Services completed by this firm (mm/yy)	12/2020	Cost of consultant services provided by this firm ($1,000's)		$946	

The Long-Allen Bridge, built in 1933, consists of 47 spans with a total length of 3,746 feet. The approach spans consist of two reinforced concrete slab spans, 40 reinforced concrete T-beam spans, and 2 deck truss spans. The main spans consist of 3 identical through truss spans with span length of 608 feet. The substructure is comprised of concrete pile bents, two-column concrete bents, and concrete piers. The scope of work includes:

- Review of existing documents.
- Inspection of superstructure.
- Load rating of main truss, deck truss, and approach spans.
- NDT Evaluation of superstructure and substructure to determine scope of rehabilitation.
- Diagnostic load test of approach spans using strain gauges and calibration trucks.
- Design rehabilitation, and develop construction plans and cost estimate.
- Develop temporary traffic control plans.

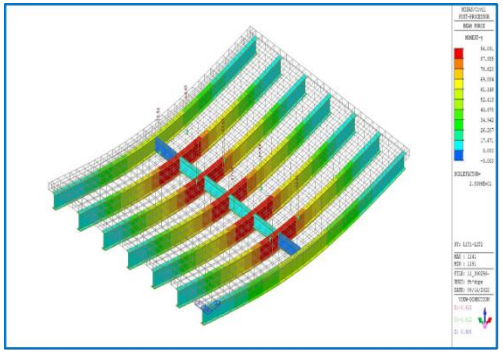


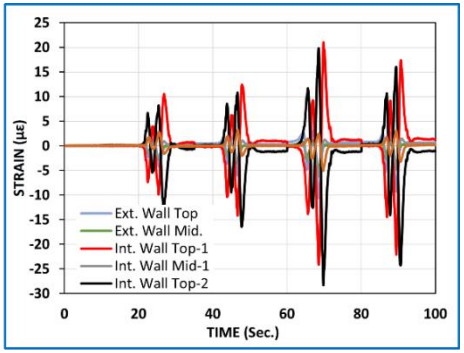
Bridge rehabilitation includes, cleaning and painting of all steel members, CFRP strengthening of approach slab spans, replacing concrete deck of deck truss spans, heat-straightening of selected truss members, jacking the deck truss and repair of the rocker bearings, replace finger joints and supporting beams, clean and seal of expansion joints, repair of concrete railing, applying epoxy-urethane overlay system on roadway, and applying methyl methacrylate concrete sealer on sidewalks.

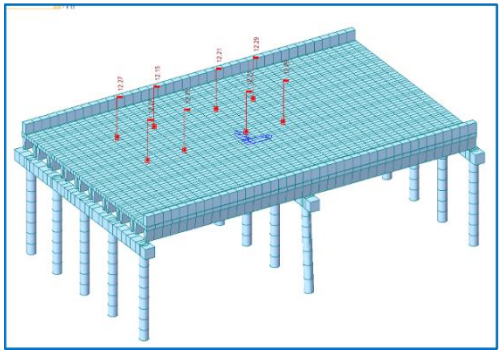
Team: **Osama Elsaad, PE; James Fussell, PE; Zhiyong Liang, PhD, PE; Adnan El-Saad, PE; Feng Xie, PE; Mohsen Shahawy PhD, PE.**

Firm name	SDR Engineering Consultants, Inc.			Past Performance Evaluation Discipline(s)	Bridge
Project name	**Load Testing and Evaluation of 19 Bridges**			Firm responsibility (prime or sub?)	Prime
Project number	H.012485.1	Owner's name	LADOTD		
Project location	Statewide, LA			Owner's Project Manager	Corey Bourgeois, P.E.
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, (225) 379-1027, Corey.Bourgeois@LA.GOV				
Services commenced by this firm (mm/yy)	04/2022	Total consultant contract cost ($1,000's)			$1,190
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)			$1,190

The scope of this project (currently ongoing) is to perform load testing coupled with finite element analysis of the controlling member(s) dictating the posting of the bridge. The objectives of this project is to accomplish the following: 1) Through load testing and refined analysis, to maintain current posting in the case where current load rating indicates lower posting based on conventional analysis 2) Remove the posting entirely based on higher analysis accounting for actual live load distribution and/or strength characteristics not accounted for in conventional analysis. The bridge types tested include culverts, prestressed channel/slab units, steel I-beams and include timber and concrete substructure elements. The detailed scope of work includes:





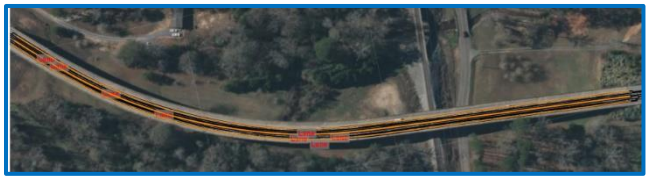


- Development of 3-D FE modeling to predict strains in the field and for refined analysis.
- Instrumentation and diagnostic load testing of bridges currently posted.
- Preparation of comprehensive report giving the details of the Finite Element Analysis and compiled load test results of each bridge in conjunction with strengthening suggestions, if applicable.
- Provide Stage 5 Part I & II construction support.

Staff: **Osama Elsaad, PE; James Fussell, PE; Zhiyong Liang, PhD, PE; Mahmoud Manaa, PhD, PE; Mohsen Shahawy, PhD, PE; Jose "Pepe" Garcia, MS, PE; Feng Xie, PE; Adnan El-Saad, PE; Hao Yuan, PhD, PE, SE; Andres (Andy) Rodriguez, ME, EI.**

Firm name	SDR Engineering Consultants, Inc.			Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Bridge Deck Evaluation using Ground Penetrating Radar**			Firm responsibility (prime or sub?)	Prime
Project number	H.009730.5	Owner's name	LADOTD		
Project location	Statewide, LA			Owner's Project Manager	Haylye Brown, PE
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, (225) 379-1500, Haylye.Brown@LA,GOV				
Services commenced by this firm (mm/yy)	05/20	Total consultant contract cost ($1,000's)			$146
Services completed by this firm (mm/yy)	01/21	Cost of consultant services provided by this firm ($1,000's)			$146

The scope of the project is to use air-launched Ground Penetrating Radar (GPR) to evaluate the overall deck condition of five (5) bridges.



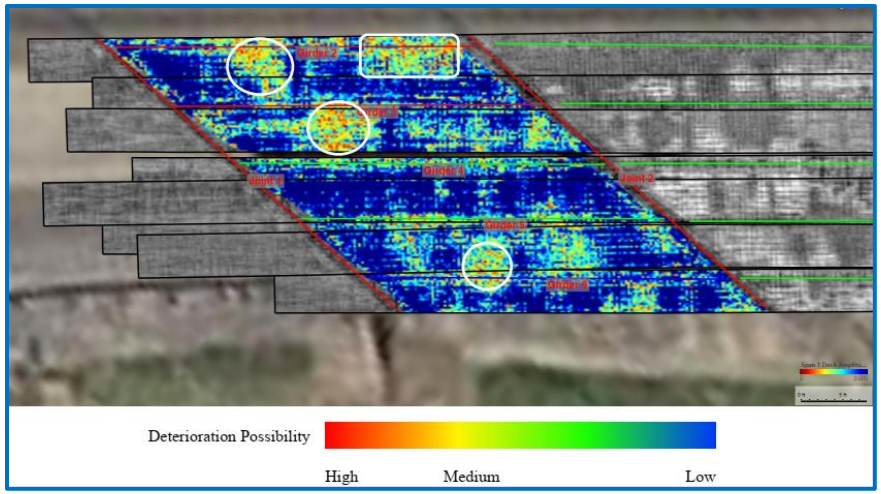
Bridge	Recall No.	Location	Bridge Length	No. of Spans	ADT
I-10 over Atchafalaya Floodway	300240	Lafayette	4.4 miles	322	28,300
LA 546 over ICG RR	050090	Monroe	0.3 miles	21	2,200
LA 594 over I-20	025190	Monroe	0.1 miles	6	12,220
Us 90 over Bayou Beouf	610211	Baton Rouge	2.3 miles	179	12,650
I-55 over Pass Manchac	062080	Hammond	0.6 miles	51	2,400

The tasks included:

- Plans and records review.
- Deck evaluation plans.
- Field evaluation using GPR.
- Data analysis and reporting

The collected GPR data was analyzed and presetned as contour maps to determine cracking; deteoriration (spalling and/or exposed reinforcement); cover depth; voids; steel corrosion; and concrete quality. Based on findings an overall deck condition was established along with the recommended level of inpseciton.

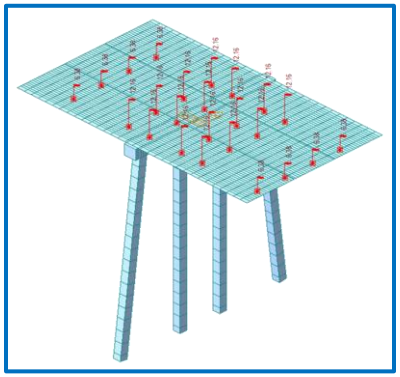
Team: **Osama Elsaad, PE; James Fussell, PE; Zhiyong Liang, PhD, PE; Mahmoud Manaa, PhD, PE; Feng Xie, PE; Hao Yuan, PhD, PE, SE.**

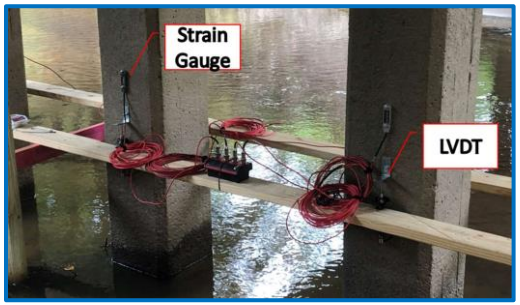


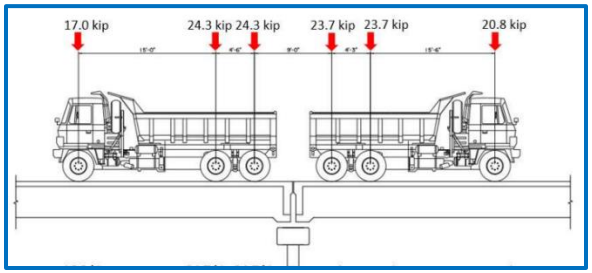
Firm name	SDR Engineering Consultants, Inc.			Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Load Testing and Evaluation of Substructures of Nine Bridges**			Firm responsibility (prime or sub?)	Prime
Project number	H.009730.5	Owner's name	LADOTD		
Project location	Statewide, LA			Owner's Project Manager	Stephanie Doolittle, PE
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, (225) 379-1329, Stephanie.Doolittle@LA.GOV				
Services commenced by this firm (mm/yy)	07/19	Total consultant contract cost ($1,000's)			$420.00
Services completed by this firm (mm/yy)	10/20	Cost of consultant services provided by this firm ($1,000's)			$420.00

the scope was to perform proof load testing coupled with Finite Element (FE) Analysis for the critical substructure bent(s) of nine (9) bridges, which have poor NBI condition ratings. The objective was to evaluate the bents structural capacity and measure the pile settlement to establish the actual geotechnical load-carrying capacity and/or determine the required strengthening. The detailed scope of work includes:

- Review bridge records.
- Instrumentation and proof load testing of the controlling bents using strain gages and displacement sensors.
- Develop 3-D FE model of the bent including adjacent spans and calibrate the FE model based on load test results. Compare results from AASHTO analysis, finite element model, and load test.
- Determine whether the bridge can safely carry the legal loads or not.
- Prepare final report summarizing work efforts and findings.







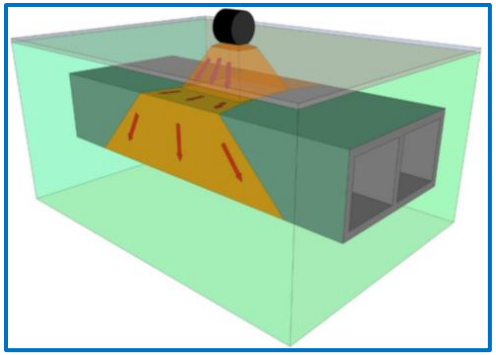
Team: **Osama Elsaad, PE; James Fussell, PE; Travis Honore, EI; Zhiyong Liang, PhD, PE; Mahmoud Manaa, PhD, PE; Mohsen Shahawy, PhD, PE Jose "Pepe" Garcia, MS, PE; Feng Xie, PE; Hao Yuan, PhD, PE, SE; Andres (Andy) Rodriguez, ME, EI**

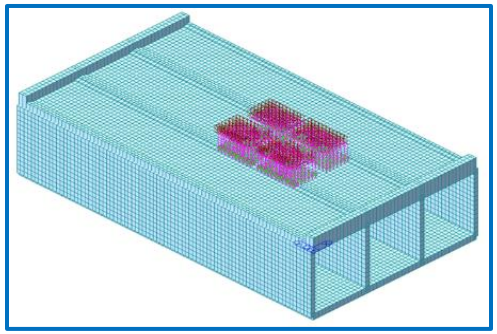
Firm name	SDR Engineering Consultants, Inc.			Past Performance Evaluation Discipline(s)*	Bridge
Project name	**RC Box Culverts Testing and Rating**			Firm responsibility (prime or sub?)	Prime
Project number	H.009730.5	Owner's name	LADOTD		
Project location	Statewide, LA		Owner's Project Manager	Dana Feng, PhD, PE	
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, (225) 379-1060, Dana.Feng@LA.GOV				
Services commenced by this firm (mm/yy)	05/18	Total consultant contract cost ($1,000's)		$640	
Services completed by this firm (mm/yy)	07/20	Cost of consultant services provided by this firm ($1,000's)		$640	

The scope was to assess the load rating of representative CIP-RC box culverts from the Louisiana DOTD inventory and to develop a load rating procedure representative of the actual field performance.

The project was carried out in two phases. Phase I comprised literature review of published standards and reports; preliminary analytical study using 2-D frame element models to investigate the influential parameters, and examination of LADOTD culvert inventory.

Phase II comprised performing diagnostic load testing of 12 culverts with different configurations representative of LADOT inventory and conducting a parametric study that included development of 120 3-D finite element models for culverts with different configurations (fill heights, span lengths and culvert lengths) and the corresponding 2D frame element models. The purpose of the parametric study was to develop correction factors to correlate internal forces obtained from 3-D analysis with those obtained from 2-D analysis.





Team: **Osama Elsaad, PE; James Fussell, PE; Travis Honore, EI; Zhiyong Liang, PhD, PE; Jose "Pepe" Garcia, MS, PE; Mahmoud Manaa, PhD, PE; Mohsen Shahawy, PhD, PE; Feng Xie, PE, Hao Yuan, PhD, PE, SE**.

Firm name	FORTE & TABLADA		Past Performance Evaluation Discipline(s)*	Bridge	
Project name	IWGO Bridge Rehabilitation – Drone Flyover		Firm responsibility (prime or sub?)	Prime	
Project number	H.011965.6	Owner's name	LADOTD		
Project location	Orleans Parish		Owner's Project Manager	Hamed Babaizadeh	
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802, 225-379-1331				
Services commenced by this firm (mm/yy)	07/22	Total consultant contract cost ($1,000's)		$55.2	
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)		$55.2	

Forte & Tablada was tasked by Louisiana DOTD to conduct drone video and still photography for in-phase inspection during rehabilitation and painting of the Paris Rd bridge over the Intracoastal Waterway Gulf Outlet (IWGO), aka the "Green Bridge". Forte & Tablada is conducting pre-planned flight paths using state-of-the-art UAV within 3m accuracy of the agreed-upon flight path, the collection of photos and videos throughout the project, and processing of content for final production use.

Project Team:

Russell "Joey" Coco, Jr., P.E.
Brent Campbell
Blake Bonnette

Firm name	FORTE & TABLADA		Past Performance Evaluation Discipline(s)*	Bridge	
Project name	Sunshine Bridge Emergency Repair		Firm responsibility (prime or sub?)	Sub	
Project number	4400010587	Owner's name	LADOTD		
Project location	St. James Parish, LA		Owner's Project Manager	Stanley Ard	
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802, 225-379-1292, Stanley.Ard@la.gov				
Services commenced by this firm (mm/yy)	10/18	Total consultant contract cost ($1,000's)		$618	
Services completed by this firm (mm/yy)	12/18	Cost of consultant services provided by this firm ($1,000's)		$618	

Forte and Tablada provided topographic surveying and terrestrial LIDAR services for the LA DOTD Sunshine Bridge Emergency Repair project following the severe impact of a barge mounted crane with the lowest horizontal bridge chord. The severity of the structural damage forced the closure of the bridge resulting in disruption and re-routing of a large volume of industrial and general population motorists. Due to the elimination of this major corridor for commerce and its consequences, an expeditious and time efficient rehabilitation was paramount. Forte and Tablada worked with a design team to formulate a practical solution for obtaining advanced measurements that were unachievable with traditional measuring practices which were required for the structural analysis and repair design for the bridge. Forte and Tablada surmounted the challenges of the repair effort through the use of LIDAR techniques employing innovative applications to provide the necessary data for the bridge repair analysis and inventive construction of an apparatus needed to apply these techniques.

Laser Scan of Sunshine Bridge in Donaldsonville, LA

Project Team:

Russell "Joey" Coco, Jr., P.E., Principal-in-Charge
Wilfred Fontenot, P.L.S. , Surveyor
Jonathan Coco, Adv. Measurements Dept. Leader
Ross Wilson, P.L.S., Surveyor
Brent Campbell, Senior Technician
Blake Bonnette, Senior Technician

Firm name	FORTE & TABLADA		Past Performance Evaluation Discipline(s)*	Bridge	
Project name	St. Claude Bridge Pin Alignment		Firm responsibility (prime or sub?)	Sub	
Project number		Owner's name	Port of New Orleans		
Project location	New Orleans, LA		Owner's Project Manager		
Owner's address, phone, email	1350 Port of New Orleans PI, New Orleans, LA 70130, 504-522-4156				
Services commenced by this firm (mm/yy)		7/19	Total consultant contract cost ($1,000's)		Unknown
Services completed by this firm (mm/yy)		9/19	Cost of consultant services provided by this firm ($1,000's)		$26

Forte and Tablada was contracted to perform both 3D terrestrial laser scans and laser tracker measurements to analyze key parts of the St. Claude bascule lift bridge. The main goal of the project was to determine the collinearity of the main trunnion, first and second link, and the counterweight pin pairs as well as the collinearity of the pairs to each other. A FARO Laser Tracker was used to locate each pin face utilizing the existing exposed geometry. This required multiple set up locations for the laser tracker in order to gain line of sight to all the pin faces. The pin trajectories were provided to HNTB for further analysis.

In addition to the above, Forte and Tablada terrestrially laser scanned the St. Claude Bridge at its down and lifted positions and provided a centerline model of the main truss members in the down and lifted positions. The purpose of this exercise was to compare the down position extracted centerline model to the lifted position extracted centerline model.

Project Team:

Russell "Joey" Coco, Jr., P.E., Principal-in-Charge
Jonathan Coco, Project Manager
Brent Campbell
Blake Bonnette
Megan Averett

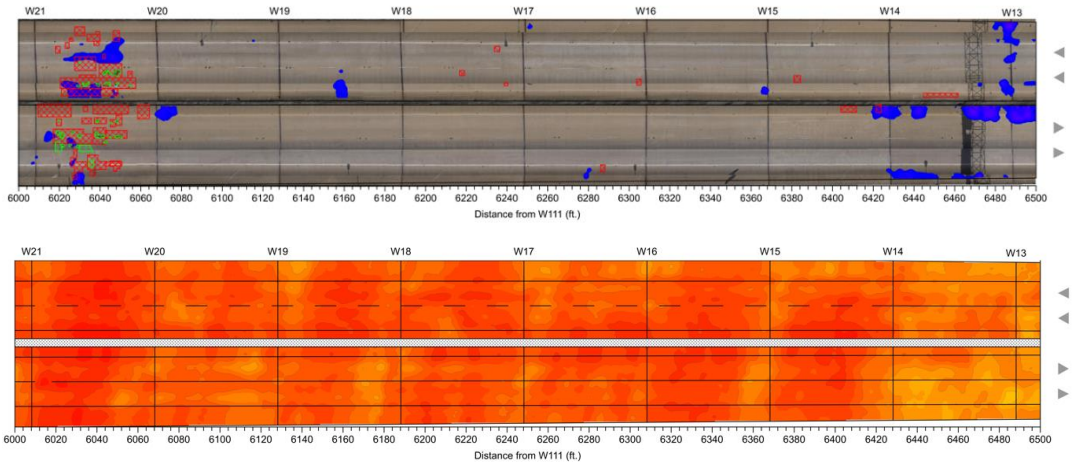
Firm name	Infrasense, Inc.		Past Performance Evaluation Discipline(s)*	Bridge	
Project name	IDIQ for Nondestructive Evaluation of Structures Statewide		Firm responsibility (prime or sub?)	sub	
Project number	4400017163	Owner's name	LADOTD		
Project location	Louisiana (Statewide)		Owner's Project Manager	Haylye Brown	
Owner's address, phone, email	Baton Rouge, LA, 225-379-1500, Haylye.Brown@LA.GOV				
Services commenced by this firm (mm/yy)	06/19	Total consultant contract cost ($1,000's)	unknown		
Services completed by this firm (mm/yy)	06/20	Cost of consultant services provided by this firm ($1,000's)	$105		

Infrasense as a sub to BDI, completed NDE deck condition scanning of the Vicksburg, Lake City, and Grand Ecore Bridges. The following table provides the details for each evaluation including the methods used.

Structure Name	**Feature On/Over**	**Total Deck Area (sq. ft.)**	**Methods Used by Infrasense**
Vicksburg Bridge	I-20 over Mississippi River	888,975	IR, HRV, GPR
Lake City Bridges	I-10 over City Park Lake	70,960	IR, HRV, GPR
Grand Ecore Bridge	US-6 over the Red River	51,109	GPR

The resulting deliverables included some combination of quantities and maps of deterioration, delamination, spalling, patching, rebar cover, and deck thickness, as well as supporting high-resolution visual imagery.

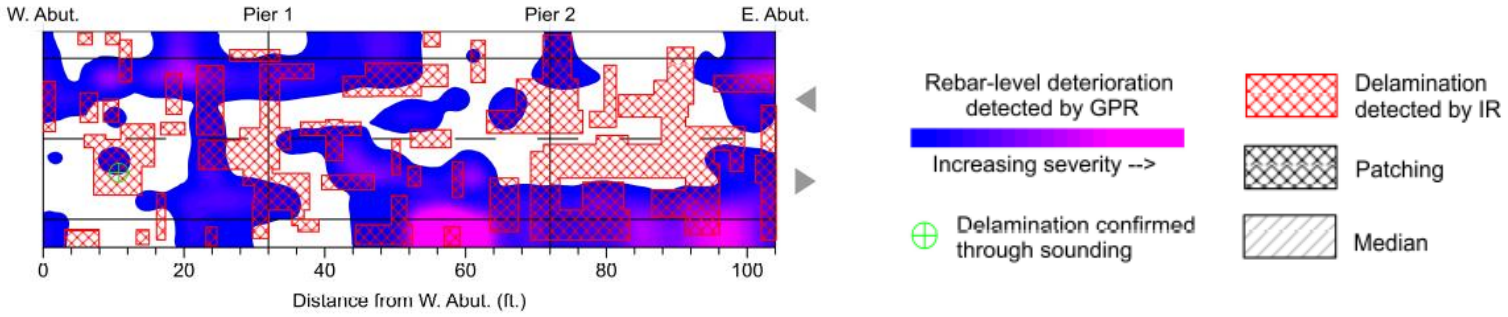
Key Personnel Involved: Adam Carmichael (Infrasense PM), Ken Maser (Technical Oversight, QA), Evan Guarino (Data Collection and Analysis), and Keith Sorota (Data Analysis)



Firm name	Infrasense, Inc.		Past Performance Evaluation Discipline(s)*	Bridge	
Project name	Wisconsin DOT Bridge Deck Survey Inspection Master Contract		Firm responsibility (prime or sub?)	prime	
Project number	6350-52-01, 0695-51-17, 0695-51-34, 0697-10-23, 0697-10-44, 0697-10-78	Owner's name	Wisconsin Department of Transportation		
Project location	Wisconsin (Statewide)		Owner's Project Manager	Philip Meinel	
Owner's address, phone, email	4822 Madison Yards Way, Madison, WI 53705, 608-261-2590, Philip.Meinel@dot.wi.gov				
Services commenced by this firm (mm/yy)	07/07	Total consultant contract cost ($1,000's)	$3,864		
Services completed by this firm (mm/yy)	09/22	Cost of consultant services provided by this firm ($1,000's)	$3,864		

Infrasense, through multiple work orders, has conducted Infrared Thermography (IR, per ASTM D4788-03) and Ground Penetrating Radar (GPR, per ASTM D 6087–08) surveys on 3016 bridge decks representing over 32 million sq. ft. in Wisconsin's SW, NC, NW, NE, and SE regions. All GPR data collection has been carried out at driving speed without lane closures, while the IR data has been collected at rolling speed with rolling closures, driving speed without lane closures, and via a fixed wing airplane (Aerial-IR). During the rolling speed IR data collection, select areas have been sounded (via hammer) to confirm the presence of delaminations. Infrasense has handled all arrangements for the rolling closure, including subcontracting for traffic control and setup and input of closure information into the WisDOT LCS. Level 1 evaluations have been carried out for each deck, including determination of estimated deterioration quantities and depths to reinforcement. Tabular summaries of these results have been provided for each work order project. Decks showing significant deterioration levels have been selected for a more detailed Level 2 evaluation, which resulted in maps showing a plan view of delaminated and deterioration deck areas. In select cases, data from underside visual inspections has been incorporated into each deck's evaluation, as well as targeted ultrasonic Impact Echo testing (per ASTM C1383-04). Level 2 maps are used to quantify and map Type 1, Type 2, and full-depth repair areas, in accordance with the WisDOT contract bid prep items.

Key Personnel Involved: Adam Carmichael (Project Manager (2018-2022), Data Collection and Analysis (2008-2018)), Ken Maser (Technical Oversight, QA (2018-2022), Project Manager (2007-2018)), Evan Guarino (Data Collection and Analysis), and Keith Sorota (Data Analysis)

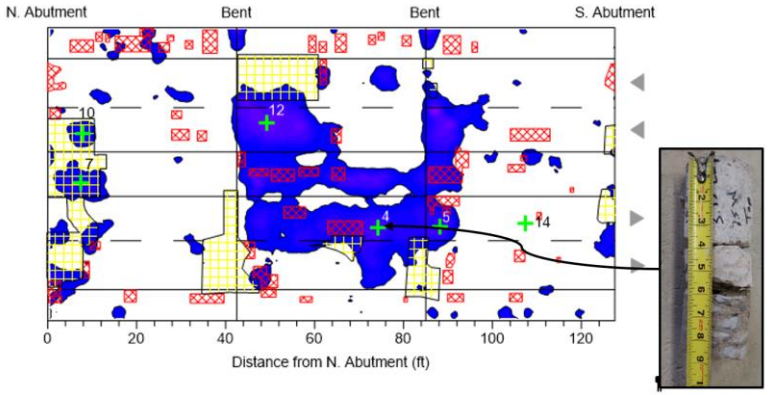


Firm name	Infrasense, Inc.		Past Performance Evaluation Discipline(s)*	Bridge	
Project name	MoDOT Bridge Deck Surveys		Firm responsibility (prime or sub?)	prime	
Project number	2017-06-34973 & 2020-04-57098	Owner's name	Missouri Department of Transportation		
Project location	Missouri (Statewide)		Owner's Project Manager	Joe Alderson	
Owner's address, phone, email	105 W. Capitol Ave., PO Box 270, Jefferson City, MO 65102, 573-522-8722, Joseph.Alderson@modot.mo.gov				
Services commenced by this firm (mm/yy)	06/17	Total consultant contract cost ($1,000's)	$215		
Services completed by this firm (mm/yy)	12/21	Cost of consultant services provided by this firm ($1,000's)	$215		

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

Infrasense has completed nondestructive condition scanning of 30 bridge decks as part of multiple task orders utilizing ground penetrating radar (GPR), infrared thermography (IR), high-resolution visual (HRV), sounding, and targeted coring. The scanning results include areas of delamination identified by IR and sounding, deterioration and rebar cover detected by GPR, and spalling and patching detected by HRV. Coring was carried out on one of the decks per the request of MoDOT. The conditions of the 6 extracted cores showed a 100% correlation with the scanning results.

Key Personnel Involved: Adam Carmichael (Infrasense PM), Ken Maser (Technical Oversight, QA), Evan Guarino (Data Collection and Analysis), and Keith Sorota (Data Analysis)



18. Approach and Methodology:

ABOUT THE TEAM:

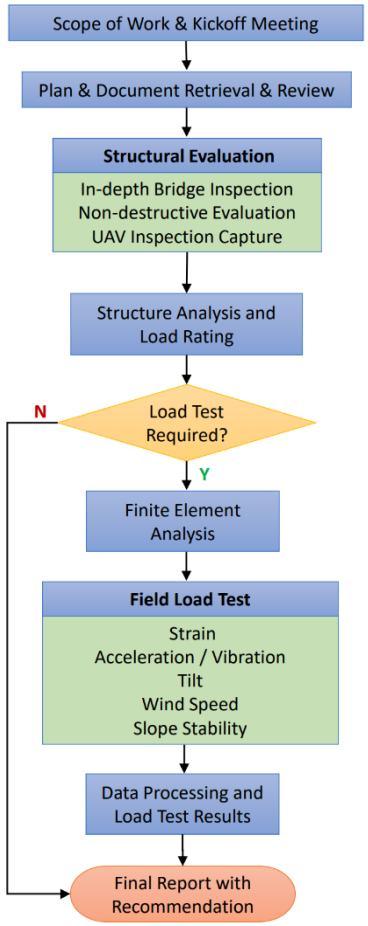
SDR Engineering Consultants, Inc. **(SDR)** has been serving DOTD as a prime contractor on multiple IDIQ contracts over the past 15 years in addition to developing the DOTD Bridge Design and Evaluation Manual and the LG prestressed girder design standards. Under previous IDIQ contracts, SDR performed significant number of bridge instrumentation, testing and evaluation of timber, concrete, and steel bridges for both super and substructure elements. Many of these tests helped increase or remove existing posting load limits. SDR's staff has extensive experience in utilizing non-destructive tests methods such as Magnetic Particle, Liquid Penetrant, Radiographic, Ultrasonic, Electromagnetic Infra-red as well as Visual and Optical Testing. Furthermore, SDR has extensive experience in remote monitoring as well as data acquisition. For evaluation and load testing of bridges, SDR utilizes detailed three-dimensional (3-D) finite element analysis, which is a comprehensive and rigorous structural analysis tool, along with our in-house unique analysis tools. Our engineers have been trained in programs including AASHTOWare Bridge Rating (VIRTIS), Smartbridge, LUSAS, MIDAS, LARSA 4D, SAP, STAAD, RC-PIER and MDX. These advanced analysis capabilities are necessary for assessing test data and evaluating the actual performance of bridges to establish a safe load carrying capacity. SDR has successfully provided a range of inspection, instrumentation, static/dynamic load testing, non-destructive testing, and rehab design services to many DOTs, cities, counties, and contractors under similar IDIQ contracts.

Team Composition:

SDR will be assisted by **Infrasense, Inc.** (35 years' experience) for performing NDT and evaluating bridge decks, pavements, and other highway structures utilizing Ground Penetrating Radar (GPR), infrared thermography (IR), high-resolution video (HRV), acoustic testing, sonic impact-echo (IE), and more traditional methods, where appropriate, including chain-drag, coring, chloride testing, and compressive strength testing.

Forte and Tablada (F&T) will provide inspection and survey using Unmanned Aerial Vehicle (UAV) to develop a virtual model or "digital twin" of the bridge directly from laser scan data. The F&T team has significant experience in developing bridge models for LADOTD for projects such as the Sunshine Bridge Repair, the Danziger Bridge Investigation, the Magnolia Pedestrian Bridge, and the Calcasieu River Bridge. F&T currently has 4 UAVs, 5 FAA Part 107 UAV pilots, a DJI Matric 600 Pro UAV, and a Riegl VUX LiDAR sensor that can take localized measurements. F&T's Mavic 2 Enterprise UAV is ideal for close ranged and detailed inspections and can be used with VR goggles.

APPROACH TO SCOPE OF SERVICES:



The process for a typical task in this contract is shown on the adjacent process chart. Our approach to delivering each service for this project is summarized in the following sections in the sequence as shown in the flow chart:

Scope of Work: An IDIQ contract consists of various task orders with specific work scope, budget, and schedule. The main scope of each task is specific and varies based on the type of service required by DOTD. For each task order, the first step is to listen to the project PM's needs in terms of objectives, schedule, emergency, availability of records and any operation limitations that need to be considered. Developing a clear and concise work scope is the first step towards successful task completion.

Upon receiving task order, SDR's team will review available data and determine test type, required staffing, test equipment, MOT requirements and any other conditions that could accelerate the testing and delivery to DOTD. A tentative schedule will be developed optimizing labor and expenses. If railroad permits and/or TTC scheduling are required, obtaining these permits will begin immediately with NTP in-hand.

Kickoff Meeting

Prior to the kickoff meeting: 1) coordinate with DOTD PM on date, time and required attendees, 2) request for review all available and relevant bridge data including prior bridge inspection/load rating reports, 3) investigate maintenance of traffic requirements, 4) prepare tentative work plan and schedule, 5) prepare Quality Control Plan for the task, 6) prepare an agenda for the kickoff meeting and submit all relevant information to DOTD PM for review and distribution to attendees for discussion during the kickoff meeting.

The kickoff meeting will be used to: 1) establish clear understanding of the project goals and discuss any DOTD and Parish concerns to be addressed in terms of location, access, and MOT, if required, 2) determine the frequency for coordination progress meetings and develop line of communication, 3) discuss and finalize proposed work plan, QC plan and work schedule.

Based on the comments from the kickoff meeting, a refined work plan, task schedule and QC/QA process plan will be submitted to DOTD PM for approval.

Plan & Document Retrieval & Review: Prior to mobilization to the project site, SDR shall collect pertinent background information and review existing project documents, damage reports (if applicable), available load rating and inspection reports, as-built construction plans and historical information. This information will be used to determine NDT methods, instrumentation plan, best testing approach, safety requirements, traffic management, access equipment, testing requirements, site coordination, and other specific needs for each task.

Depending on the quality of available information, an initial site visit and close inspection by one of SDR's professional engineers, proficient in evaluating the extent of defect, deterioration, or damage is performed. The purpose of the site visit/inspection is to assess the possible risks and the best possible access for instrumentation and to meet with the LADOTD district personnel to discuss the planned instrumentation/ testing and preferred traffic management activities.

Inspection: Our team will review the bridge-specific inspection procedures for opportunities to improve efficiency and reduce traffic impacts. Access methods and associated equipment for achieving arms-length reach of all components shall be identified and utilized. Updates will be discussed with LADOTD and, if necessary, an updated inspection procedure document will be submitted for DOTD's approval.

Prior to field inspection, arrangements shall be made to have the bridge thoroughly cleaned to remove dirt and debris that would inhibit visual observations and measurements. All inspections shall be conducted under the direct supervision of the Inspection Team Leader, who is also responsible for performing quality assurance. Our inspection team leaders have extensive experience utilizing climbing techniques which could minimize/eliminate the need for costly mechanical access and/or traffic control. Should critical findings be identified, they will be immediately brought to the attention of appropriate LADOTD personnel. These will be discussed in thorough detail prior to any final decisions being made prior to leaving the site.

Our fully digital project process streamlines all inspection activities and reporting. Field documentation/observation are entered on customized iPads throughout the inspection process ensuring smooth, efficient, and accurate high-quality reports.

Non-Destructive Test/Evaluation: SDR's team has the technical expertise & staff capacity necessary to provide all the equipment & labor required to perform Non-Destructive Test/Evaluation as follows:

Timber- Utilized Ultrasonic, Vibration, Boring, Drilling, Moisture Content and Probing.

Concrete- Utilized Sonic/Ultrasonic Velocity Measurements, Electrical Methods (to evaluate the corrosion activity of embedded steel reinforcement), Pulse Velocity, Impact-Echo, Infrared Thermography, Neutron Probe for Detection of Chlorides, Endoscopes and Videoscopes, Chloride testing.

Steel- SDR's team is experienced in NDT conducting ultrasonic testing of steel pins, Acoustic Emission, Smart Coatings (for detecting fatigue cracks), Dye Penetrant, Magnetic Particle, Ultrasonic Testing, and Eddy Current.

Ground-Penetrating Radar (GPR): used to measure concrete cover and to locate the position and approximate size of embedded steel reinforcement. Our team has used this method on various LADOTD projects to map, determine concrete cover and reinforcement details, and to create new plans for bridges with missing as-built plans. Generally, this test method is coupled with probing to remove the concrete cover on target areas and to verify the exact size of steel (bar or prestressing strand), generating the most accurate model for future use.

High Speed GPR: used to detect delaminated concrete decks caused by reinforcement corrosion. A survey of the bridge deck is performed while travelling over the structure at normal highway speed, without interrupting the traffic, to detect concrete cover thickness, reinforcement, and delaminated concrete areas. Our team has used this method successfully on previous LADOTD projects.

Recently, SDR evaluated the concrete deck of five bridges using the GPR system, including a 4.4-mile-long I-10 Bridge (RC#300240) and a 2.3-mile-long US-90 bridge (Contract No. 4400017310). Air-launched GPR was mounted on a vehicle traveling at highway speed while scanning the deck, which allowed for bridge deck inspection without closing traffic. The collected data was then processed to generate contour maps showing the location and severity of deficiencies on the deck surface as well as inside the deck. These unique capabilities could be utilized on this project if needed.

UAV Inspections -UAVs could be in the condition inspection of high-level bridges reducing the need for costly special access equipment. A variety of different UAVs may be necessary for inspection depending on the circumstances and access. Smaller UAVs are more suitable for an up-close inspection of the bridge and require special cameras and intense lighting to render high resolution images. Larger UAVs can carry a heavier payload such as more powerful cameras, video equipment, as well as aerial LiDAR sensors. Importantly, each circumstance requires evaluation for safety of the public, or lane closures, when the UAV is being put into challenging places, for example, an overhead truss. Forte and Tablada's Enterprise UAV is ideal for close ranged and detailed inspections and can be used with VR goggles to assist bridge engineers with an eyes-on like experience that couples the view of a registered UAV pilot with that of a passenger bridge engineer.

3D Digital Twin- For complex structures, developing a virtual 3D model or "digital twin" of the bridge directly from laser scan data could provide valuable information when it is coupled with instrumentation and testing. The digital twin 3-D model can

be used in concert with testing and instrumentation to provide accurate representation of member deformations, deflection or camber, positioning, alignment, size, and shape. The digital twin data can be compared to the results obtained from instrumented bridge elements to aid with complex and long-duration instrumentation projects, a digital twin can also be used as a physical backdrop for a visual providing the location of various sensors as well as real-time data.

NDT/E Equipment and Methods: The SDR team has worked with its clients to recommend the most appropriate technology (or combination thereof) based on the agency's needs, structure type, material, dimensions/geometry, time of year, etc. All data collection is carried out according to industry standards including but not limited to ASTM D6087, ASTM D-4788, ASTM 1383-15, ASTM D5882-00, and ASTM C876-15. Our team has access to the following equipment required to carry out the prescribed testing methods as listed below.

- Three (3) driving speed GPR data collection systems manufactured by GSSI of Nashua, NH; including (2)-SIR-30 and (1)-SIR-20 data acquisition systems; (2)-Model 4108, 1GHz and (2)- Model 420000S, 2GHz frequency horn antennas.
- Three (3) ground-coupled GPR data collection systems manufactured by GSSI; including a portable SIR-4000 data acquisition system and various ground-coupled antennas with a range of frequencies including Model 5100, 1500MHz, Model 3101D, 900 MHz, and Model 5400, 400MHz frequency.
- Four (4) driving speed Infrared data collection systems including vehicle mountings and (4) FLIR IR cameras, namely two (2) model A6701sc high speed "Sterling cooled" IR cameras and two (2) Model A-655SC electronically cooled IR cameras.
- An Aerial-IR system with a FLIR Model FLIR X8500sc high resolution IR camera that has been modified with a telephoto lens for bridge deck imaging.
- Acoustic Delamination Scanner (ADS). System includes up to 16 channels with MEMS microphones for recording acoustic data from corresponding ball-chains.
- Olson Instruments CTG-2 Sonic Impact Echo (IE) System
- Olson Instruments NDE-360 DAQ with instrumented hammer, transducer/solenoid testing head, and geophones.
- Schmidt Rebound Hammer
- James Instruments Cor-Map HCP System
- Five (5) Enterprise-level UAV drones with video and laser scan

The following table provides the detection capabilities, modes of deployment, and applications for major nondestructive testing methods offered by our team.

NDT/E Method	Detection Capabilities
Infrared Thermography (IR)	Overlay debonding, rebar-level delamination, voids
High Resolution Video (HRV)	Spalling and patching
Ground Penetrating Radar (GPR)	Deterioration, corrosion activity, moisture, overlay thickness, rebar cover, locations of members (spacing, depth), dimensions of members (thickness, size)
Impact-Echo (IE), Sonic Echo (SE)	Delamination, voids, honeycomb, dimensions of members (thickness)
Acoustic Scanning	Delamination, honeycomb, and voids
Rebound Hammer (RH)	Stiffness/ compressive strength
Half Cell Potential (HCP)	Corrosion potential
Ultrasonic Testing	Steel crack, weld flaws
Unmanned Aerial Vehicle (UAV)	3D digital twin, crack detection,

Structural Analysis and Load Rating: Bridge ratings will be performed by SDR engineers considering inspection and NDT findings. SDR has rated more than 1,000 bridges for DOTD in the past years and have tremendous experience in the analysis of all different bridge types including timber, concrete, and steel bridges, as well as complex bridges such as truss, cable-stayed, pontoon, segmental, and movable bridges.

Finite Element Analysis Post-testing Calibration: FE analysis is often used in conjunction with load testing. The results from the FEM model are used to determine the anticipated stress in critical elements that controls the bridge load rating and the type and number of sensors needed to collect the field data for post-testing evaluation. The instrumentation plan is generally designed to provide the actual performance of the entire bridge under target applied loads with additional emphasis on critical elements. The level of applied loads and test sequence is modeled to obtain the magnitude of anticipated calculated stresses for comparison with measured stresses during the field testing to ensure the safety of the bridge and test personnel during testing. The test loads (vehicles) are incrementally applied at predetermined locations and the stresses are recorded and compared at each step to those obtained from the 3-D FEM model before proceeding to the next loading step. Bridge boundary conditions greatly affect load distribution and the results from the test are used to calibrate the FEM analysis resulting in a model that accurately reflects the actual behavior of the bridge. The calibrated model is then used in the refined load rating of the bridge.

SDR's engineers are experts in both refined analysis techniques and condition assessment with proven records of performing complex FE analysis on numerous DOTD IDIQ load rating contracts for removing or raising the load posting of deficient bridges.

Coordination with LADOTD District and Scheduling of Field Testing: The testing plan, test duration, anticipated intermittent bridge closure, traffic management methods, sequence of testing, access methods (aerial lifts and under-bridge equipment, etc.), are discussed with the district prior to testing. Input or limitations from the district are addressed in the final plan, including the test dates and coordination procedure. The final work proposal/schedule is then submitted to the Project Manager for review and approval prior to starting work.

Field Load Testing: SDR has extensive experience in load testing of bridges, instrumentation, and remote monitoring as well as data acquisition for short- and long-term monitoring of bridge performance, as shown in the project sampling in Section 17. SDR has successfully completed over 50 bridge instrumentations, testing/evaluation of timber, concrete, and steel bridges for LADOTD over the past years. The results from these projects helped in removing posting and improving load rating. In addition, the results have been used to optimize necessary rehabilitation of deficient bridges. Our team utilizes state-of-the-art wireless strain, vibration, displacement, tilt, acceleration sensors, based on the objective of the test and whether short or long-term monitoring is required.

The bridge testing team leader oversees the testing team and is responsible for planning, preparing, performing, and documenting the overall bridge load testing. All field activities shall be conducted under the supervision of the team leader, who is also responsible for performing quality assurance to verify that all key elements of the established testing procedure are followed. Calibration of sensors and data acquisition are performed in-house prior to mobilization to test site. At the bridge site, wireless sensors are installed according to the approved test proposal and data acquisition is setup and programmed. Quality control measures are carried out prior to testing to ensure reliability of data collection. Reliable evaluation is the first step before testing can commence. Once all checks are completed, testing is carried out according to the approved plan. Written documentation of all test steps, test loads, test locations, instrumentation calibration, and any problems or encountered delays are evaluated for further verification against established test procedures.

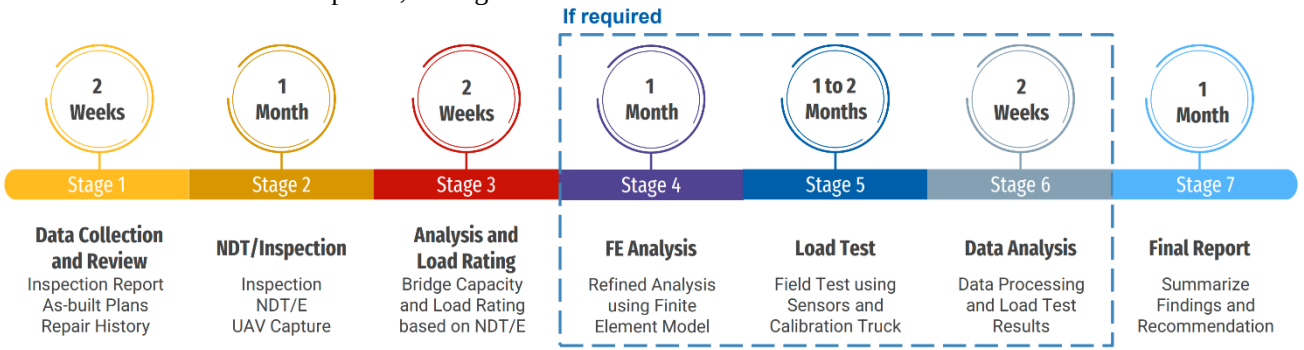
Final Evaluation Report & Recommendations: A comprehensive report summarizing results from inspection, NTD, load test etc. and repair/strengthening recommendation (if required) is submitted to PM for review and comments. Also, a BrD model utilizing the modified distribution factors is submitted to be used if a future load rating is required. All submittals are performed through ProjectWise.

Quality Control/Quality Assurance: SDR has established quality control procedures to ensure quality and adherence to established testing policies, procedures, standards, and guidelines in the preparation and review of all documents. The QC/QA panel will consist of the Key team members. The QC/QA team will ensure that all project aspects and reports produced are of the highest quality, free of errors and omissions.

Emergency Response: SDR has an established emergency response plan for inspection/testing and structural damage assessment of bridges that has been used and refined over twenty years for rapid assessment of bridges. Customized in-house software programs installed on laptops are used for on-the-fly structural analysis and assessment of existing damage due to impact, flooding, and any other unforeseen circumstances.

Electronic Deliverables: SDR's team is experienced in electronic plan delivery in conformance with DOTD Software and Deliverable Standards. All work shall be performed in accordance with all applicable DOTD policies, procedures, and manuals. Design criteria shall be developed and submitted to the Bridge Task Manger for review and approval prior to proceeding with design.

Project Schedule: A sample schedule of a typical task in this project is shown in the figure below. SDR PM Dr. Dr. Liang, has proven records of serving efficiently as a project manager on multiple IDIQ contracts over the past 15 years. He will ensure consistent and clear communication to keep DOTD abreast of any schedule changes and timely overall project progress.



19. Workload:

Firm(s)	Past Performance Evaluation Discipline(s)	State project number	Project name	Remaining unpaid balance**
SDR Engineering Consultants, Inc.	Bridge	H.014608.5	IDIQ Contract 4400021595, Task Order # 1	$5,500
		H.012485.5	IDIQ Contract 4400021595, Task Order # 3	$190,800
		H.009859.5	IDIQ Contract 4400021595, Task Order # 5	$1,321,900
Forte & Tablada, Inc.	Bridge	H.012485.1	IDIQ Contract 4400010099, Task Order No. 4 Off System Bridge Load Rating, Statewide	$169,378
		H.012485.1	IDIQ Contract 4400010099, Task Order No. 5 Bridge and Culvert Load testing	$181,695
Infrasense, Inc.	Bridge	N/A	N/A	N/A

20. Certifications/Licenses:

If the advertisement requires submission of licenses and/or certificates, include them here. Otherwise, leave this section blank.

Zhiyong Liang PhD, PE

James "Greg" Fussell, PE

U.S. Department of Transportation
Federal Highway Administration

National Highway Institute

Certificate of Training

NHI NATIONAL HIGHWAY INSTITUTE

GREG FUSSELL

has participated in

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

hosted by

LA DOTD/LTRC

Date: *December 4-15, 2017*
Location: *Baton Rouge, LA*

Hours of Instruction: 67

Guy R Lang PE
Instructor

Allison H. Landry
Local Coordinator

Paul Maitena, PE
Instructor

Valerie Briggs
Valerie Briggs, Director
National Highway Institute

Osama ElSaad, PE

U.S. Department of Transportation
Federal Highway Administration

National Highway Institute

national highway institute

Certificate of Training

OSAMA ELSAAD

has participated in

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

hosted by

LA DOTD/LTRC

Date: *October 11-15, 2021*
Location: *Baton Rouge, LA*

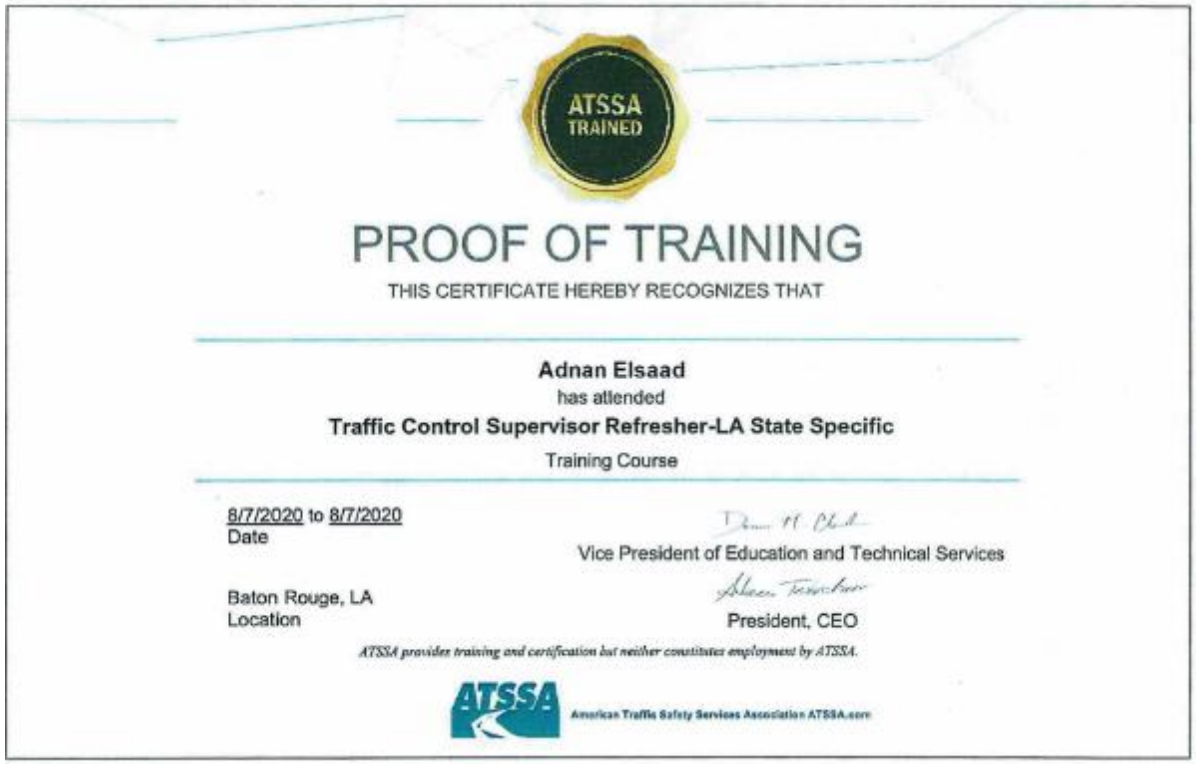
Hours of Instruction: 34

Instructor

Allison H. Landry
Local Coordinator

Instructor

Thomas Harman
Thomas Harman, Director
National Highway Institute



ATSSA TRAINED

PROOF OF TRAINING

THIS CERTIFICATE HEREBY RECOGNIZES THAT

Adnan Elsaad
has attended
Traffic Control Supervisor Refresher-LA State Specific
Training Course

8/7/2020 to 8/7/2020
Date

Vice President of Education and Technical Services

Baton Rouge, LA
Location

President, CEO

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

ATSSA American Traffic Safety Services Association ATSSA.com

U.S. Department of Transportation
Federal Highway Administration

National Highway Institute

national highway institute

Certificate of Training

Hao Yuan

has Successfully Completed

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

hosted by

Office of State Aid Road Construction

Date: *August 22-26, 2022*
Location: *Ridgeland, MS*

Hours of Instruction: 34

Instructor

Instructor

Local Coordinator

Thomas Harman

Thomas Harman, Director
National Highway Institute

U.S. Department of Transportation
Federal Highway Administration

National Highway Institute

national highway institute

Certificate of Training

Ahmed Rageh

has Successfully Completed

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

hosted by

SDR Engineering Consultants

Date: *January 10-21, 2022*
Location: *Tallahassee, FL*

Hours of Instruction: 67

Instructor

Instructor

Local Coordinator

Thomas Harman

Thomas Harman, Director
National Highway Institute

U.S. Department of Transportation
Federal Highway Administration

National Highway Institute

national highway institute

Certificate of Training

Andres Rodriguez

has Successfully Completed

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

hosted by

SDR Engineering Consultants

Date: *January 10-21, 2022*
Location: *Tallahassee, FL*

Hours of Instruction: 67

Instructor

Instructor

Local Coordinator

Thomas Harman

Thomas Harman, Director
National Highway Institute

National Highway Institute

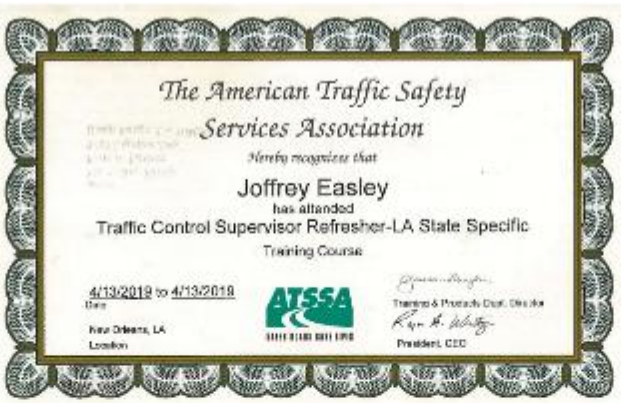
Certificate of Training

Joffrey Easley

FHWA - NHI Course No. 130078

Fracture Critical Inspection Techniques for Steel Bridges (3.5 Days)

LA DOTD/LTRC



The American Traffic Safety Services Association

Hereby recognizes that

Joffrey Easley

has attended

Traffic Control Supervisor Refresher-LA State Specific

Training Course

4/13/2019 to 4/13/2019

Date

New Orleans, LA

Location

ATSSA

Training & Products Dept. Director

President, CEO

ATSSA

SAFER ROADS SAVE LIVES

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:

AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION

Joffrey Easley

CERTIFIED FLAGGER

American Traffic Safety Services Association

National Highway Institute

Certificate of Training

Joffrey Easley

NHI Course No. 130055 -

Safety Inspection of In-Service Bridges

LA DOTD/LTRC

The American Traffic Safety Services Association

Hereby recognizes that

Joffrey Easley

has attended

Traffic Control Supervisor-LA State Spe

Training Course

04/30/2015

Date

Baton Rouge, LA

Location

ATSSA

Training & Products Dept. Director

President, CEO

Levi Yantis, PE FORTE & TABLADA

National Highway Institute

Certificate of Training

LEVI YANTIS

FHWA-NHI-130053

Bridge Inspection Refresher Training

LA DOTD/LTRC

National Highway Institute

Certificate of Training

LEVI YANTIS

FHWA-NHI-130055

Safety Inspection of In-Service Bridges

LA DOTD/LTRC

Date: December 4-15, 2017 Hours of Instruction: 67

Location: Baton Rouge, LA

SOCIETY OF PROFESSIONAL ROPE ACCESS TECHNICIANS

SPRAT

Acknowledges that

LEVI YANTIS

has demonstrated through practical and written examination, attainment of SPRAT's Certification Requirements for Rope Access Work, and is therefore

CERTIFIED

Level 1 Rope Access Technician

SPRAT #2200328

AWARDED: February 26, 2021

Expires: February 26, 2024

National Highway Institute

Certificate of Training

LEVI YANTIS

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

LA DOTD/LTRC

Date: February 26 – March 1, 2019 Hours of Instruction: 25

Location: Baton Rouge, LA

National Highway Institute

Certificate of Training

Levi Yantis

has participated in

NHI Course No. FHWA-NHI-130107C

Maintenance of Movable Bridges

hosted by

National Highway Institute

Location: Web-Based Course *Hours of Instruction: 4 hours*

Date: 2/15/2020

SDR


I UNITED STATES OF AMERICA XI
DEPARTMENT OF TRANSPORTATION ▪ FEDERAL AVIATION ADMINISTRATION
IV NAME
BRENT MICHAEL CAMPBELL
V ADDRESS 4811 JUNIPER PARK DR
BATON ROUGE LA 70816-4866
VI NATIONALITY USA
IVa D.O.B. 4 JUN 1990
SEX HEIGHT WEIGHT HAIR EYES
M 70 175 BROWN BROWN
IX HAS BEEN FOUND TO BE PROPERLY QUALIFIED TO EXERCISE THE PRIVILEGES OF
II REMOTE PILOT
III CERTIFICATE NUMBER 3956975
X DATE OF ISSUE 16 JAN 2017
XIV
VIII ADMINISTRATOR
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UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION ▪ FEDERAL AVIATION ADMINISTRATION
IV NAME
BLAKE MICHAEL BONNETTE
V ADDRESS 2424 DRUSILLA LN APT 119
BATON ROUGE LA 70809-1408
VI NATIONALITY USA
IVa D.O.B. 14 APR 1994
SEX HEIGHT WEIGHT HAIR EYES
M 69 135 BROWN HAZEL
IX HAS BEEN FOUND TO BE PROPERLY QUALIFIED TO EXERCISE THE PRIVILEGES OF
II REMOTE PILOT
III CERTIFICATE NUMBER 4077681
X DATE OF ISSUE 11 DEC 2017
XIV
VIII ACTING ADMINISTRATOR
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21. QA/QC Plan and/or Work Plan:

If the advertisement requires submission of a QA/QC plan or Work plan, include them here. Otherwise, leave this section blank. See QC/QA Plan after Section 23.

QA/QC PLAN WAS DELETED - NOT REQUIRED TO BE SUBMITTED WITH PROPOSAL (PER CCS 10/08/22).

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
Fort & Tablada, Inc.	FORTE & TABLADA	9107 Interline Avenue Baton Rouge, LA 70809	Russell Coco, Jr., PE jcoco@forteandtablada.com	(225) 927-9321
Infrasense, Inc.	INFRASENSE	21-G Olympia Ave, Suite 45 Woburn, MA 01801	Adam Carmichael acarmichael@infrasense.com	(781) 281-1686

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.