Submitted To:
Louisiana Department of Transportation and Development

May 10, 2022

DOTD Form 24-102 Qualification Statement

IDIQ Contracts for Bridge Preservation, Statewide

Contract Nos. 4400023921, 4400023922, 4400023923, 4400024185, 4400024186, 4400024187, 4400024188 and 4400024189

TRC

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May 10, 2022

Department of Transportation and Development
Attn.: Michael Gorbaty
Contract Services Administrator
1201 Capitol Access Road, Room 405-E
Baton Rouge, LA 70802-4438

Re: Professional Engineering and Related Services
Contract Nos. 4400023921, 4400023922, 4400023923, 4400024185, 4400024186
4400024187, 4400024188, and 4400024189
IDIQ Contracts for Bridge Preservation, Statewide

Dear Mr. Gorbaty,

TRC Engineers, Inc. (TRC), in association with a team of respected subconsultant members, is pleased to submit our *Qualifications Statement* on DOTD Form 24-102 for consideration of providing the needed engineering and related services for the above-referenced contracts. In recognition of the LADOTD's requirement to involve Disadvantaged Business Enterprise firms in its program, subconsultants APS Engineering and Testing, LLC, Urban Systems, Inc. and Regis Infrastructure Group, Inc. are certified DBE firms which will allow us to achieve the stated 3% goal of DBE participation.

As demonstrated herein, the TRC team offers a group of highly-qualified professionals with related engineering, design, load rating, analysis, testing and environmental expertise that comes with enthusiasm and a commitment to provide quality-based services. TRC has progressively built a very competent and highly experienced staff in our Baton Rouge office that has had the pleasure of working on challenging and complex projects for the LADOTD over the past 17 years. Leveraging such capabilities, the majority of the design work we will perform as the Prime for this contract will be performed right here in Louisiana. We offer the experience of having provided similar services for several LADOTD retainer contracts as presented herein (including bridge preservation work) and look forward to continuing our successful working relationship with the Department on this extremely important contract as well.

TRC is highly appreciative of your review and consideration of our team's credentials and looks forward to your decision. We welcome having the opportunity to continue our service to the LADOTD and delivering work under an assigned IDIQ contract in a timely, cost-effective, and technically-superior manner as we have done so for other projects as part of Louisiana's capital improvement objectives.

Sincerely,

Durk H. Krone

Durk H. Krone, P.E.
Principal / Project Manager

DOTD FORM: 24-102

PROPOSAL TO PROVIDE CONSULTANT SERVICES

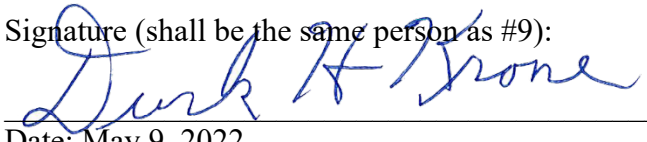
(Revised March 1, 2022)

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 24 can be removed but do not remove Section title and number.

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

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

1. Contract title as shown in the advertisement	**IDIQ Contracts for Bridge Preservation, Statewide**
2. Contract number(s) as shown in the advertisement	4400023921, 4400023922, 4400023923, 4400024185, 4400024186, 4400024187, 4400024188 and 4400024189
3. State Project Number(s), if shown in the advertisement	N/A
4. Prime consultant name (as registered with the Louisiana Secretary of State where such registration is required by law)	TRC Engineers, 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)	License # EF.0003249
6. Prime consultant mailing address	8550 United Plaza Boulevard, Suite 502, Baton Rouge, LA 70809
7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)	See Item 6 above
8. Name, title, phone number, and email address of prime consultant's contract point of contact	Durk Krone, PE, Vice President (225) 216-7483 e-mail: dkrone@trccompanies.com
9. Name, title, phone number, and email address of the official with signing authority for this proposal	Durk Krone, PE, Vice President (225) 216-7483 e-mail: dkrone@trccompanies.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: May 9, 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.	Firm(s): / Firm(s)':%: APS Engineering & Testing, LLC — 3% Urban Systems, Inc. — 2% Regis Infrastructure Group, LLC — 2%

12. Past Performance Evaluation Discipline Table:

Evaluation Discipline(s)	% of Overall Contract	TRC	M&N	USI	BDI	APS	KTA	NTB	Holden	WJE	RIG	Each Discipline must total to 100%
Bridge	84%	78%	5%		2%		2%		1%	10%	2%	100%
Traffic	2%	5%		95%								100%
Road	6%	94%									6%	100%
Geotech	3%	5%				95%						100%
Survey	3%		5%					95%				100%
Environmental	2%	100%										100%
Identify the percentage of work for the **overall contract** to be performed by the prime consultant and each sub-consultant.												
Percent of Contract	100%	73%	4%	2%	2%	3%	2%	3%	1%	8%	2%	------

TRC = TRC Engineers, Inc. | M&N = Moffatt & Nichol, Inc. | USI = Urban Systems, Inc. | BDI = Bridge Diagnostics, Inc. | APS = APS Engineering & Testing, LLC | KTA = KTA-Tator, Inc. | NTB = NTB Associates, Inc. | Holden = Holden Architects | WJE = Wiss, Janney, Elstner Associates, Inc. | RIG = Regis Infrastructure Group, LLC

13. Firm Size:

Firm name	DOTD Job Classification	Number of personnel committed to this contract	Total number of personnel available in this DOTD Job Classification (if needed)
TRC Engineers, Inc.	Principal	1	3
	Supervisor - Eng	5	9
	Supervisor - Other	1	1
	Engineer	10	21
	CADD Technician	3	7
	Administrative	1	4
	Engineer - Other	5	34
	Inspector - Bridge	7	20
	Environmental Pro	3	62
Moffatt & Nichol, Inc.	Accountant	1	10
	CADD Technician	1	75
	Engineer	4	25
	Inspector – Bridge	12	50
	Supervisor – Eng	2	8
	Technician	5	12
Urban Systems, Inc.	Supervisor- Eng	1	2
	Engineer	1	2
	Engineer - Other	1	1
	Engineer Intern	1	2
	CADD Technician	1	1
	Technician	2	4
	Clerical	1	2

13. Firm Size:

Firm name	DOTD Job Classification	Number of personnel committed to this contract	Total number of personnel available in this DOTD Job Classification (if needed)
Bridge Diagnostics, Inc.	Principal	3	3
	Supervisor – Eng	6	6
	Supervisor – Other	14	14
	Engineer – Other	4	4
	Engineer – Intern	7	7
	Senior Technician	13	13
	Technician	4	4
	Computer Analyst	1	1
	Accountant	2	2
	Clerical	3	3
	Professional	6	6
APS Engineering & Testing, LLC	Engineer	5	5
	Driller	8	8
	Technician	12	12
KTA-Tator, Inc.	Supervisor – Other	2	12
NTB Associates, Inc.	Principal	1	1
	Engineer	-	1
	Surveyor	3	6
	Supervisor - Other	1	1
	Senior Technician	1	1
	CADD Technician	2	3
	Technician	2	2
	CADD Drafter	2	4
	Party Chief	9	17
Holden Architects	Architect	4	11
Regis Infrastructure Group, LLC	Engineer	2	4

13. Firm Size:

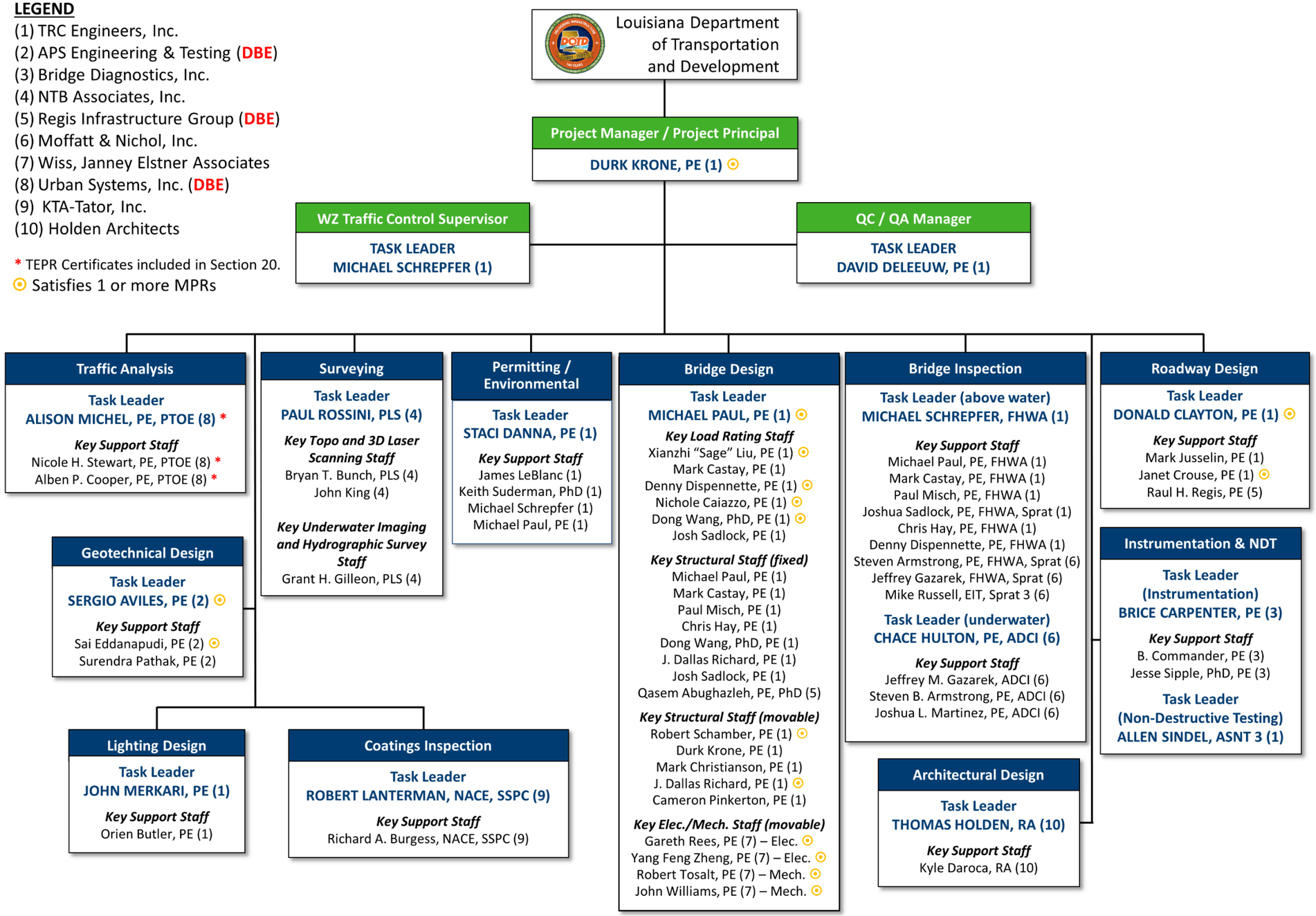
Firm name	DOTD Job Classification	Number of personnel committed to this contract	Total number of personnel available in this DOTD Job Classification (if needed)
Wiss, Janney, Elstner Associates, Inc.	CADD Technician	1	4
	Clerical	2	7
	Engineer	-	3
	Engineer Intern	2	28
	Engineering - Aide	-	1
	Engineer - Other	2	28
	Geologist	-	2
	Principal	4	45
	Professional	4	19
	Senior Technician	1	58
	Supervisor - Arch	-	1
	Supervisor - Eng	1	13
	Supervisor - Other	3	113
	Technician	1	7

14. Organizational Chart:

LEGEND

(1) TRC Engineers, Inc.
(2) APS Engineering & Testing (**DBE**)
(3) Bridge Diagnostics, Inc.
(4) NTB Associates, Inc.
(5) Regis Infrastructure Group (**DBE**)
(6) Moffatt & Nichol, Inc.
(7) Wiss, Janney Elstner Associates
(8) Urban Systems, Inc. (**DBE**)
(9) KTA-Tator, Inc.
(10) Holden Architects

* TEPR Certificates included in Section 20.
⊙ Satisfies 1 or more MPRs



15. Minimum Personnel Requirements:

MPR No.	Personnel being used to meet the MPR (Individual(s) may not satisfy more than one MPR unless specifically allowed by Attachment B of the advertisement)	Firm employed by	Type of license / certification & number	State of license	License / certification expiration date
1	Durk Krone, PE	TRC Engineers	PE (PE.0031955)	LA	3/31/2024
2	Durk Krone, PE	TRC Engineers	PE (PE.0031955)	LA	3/31/2024
3	Durk Krone, PE Michael Paul, PE	TRC Engineers TRC Engineers	PE (PE.0031955) PE (PE.0032172	LA LA	3/31/2024 3/31/2024
4	Xianzhi “Sage” Liu, PE Nichole Caiazzo, PE Dong Wang, PE Denny Dispennette, PE	TRC Engineers TRC Engineers TRC Engineers TRC Engineers	PE (PE.0034727) PE (PE.0041078) PE (PE.0042845 PE (PE.0044141)	LA LA LA LA	9/30/2023 3/31/2023 3/31/2023 3/21/2024
5	John R. Williams, PE Robert Tosalt, PE	WJE WJE	PE (PE.0044300) PE (P.E.0035750)	LA LA	9/30/2022 3/31/2023
6	Gareth T. Rees, PE Yang Feng Zheng, P.E.	WJE WJE	PE (PE.0040754) PE (PE.0045341	LA LA	9/30/2022 9/30/2023
7	Durk Krone, PE Robert Schamber, PE J. Dallas Richard, PE	TRC Engineers TRC Engineers TRC Engineers	PE (PE.0031955) PE (PE.0038075) PE (PE.0021889)	LA LA LA	3/31/2024 9/30/2023 3/31/2024
8	Donald Clayton, PE Janet Crouse, PE	TRC Engineers TRC Engineers	PE (PE.0019634) PE (PE.0040798)	LA LA	3/31/2023 9/30/2022
9	Sergio Aviles, P.E. Sairam Eddanapudi, M.E., P.E.	APS Engineering & Testing APS Engineering & Testing	PE (PE.0033571) PE (PE.0035129)	LA LA	3/31/2024 3/31/2024
All certifications enclosed in Section 20.					

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Durk Krone, P.E.**	Years of experience with this firm/employer	17
Title	Principal-in-Charge/Sr. Project Manager	Years of experience with other firm(s)/employer(s)	21
Degree(s) / Years / Specialization		M.S. / 1984 / Civil Engineering B.S. / 1982 / Civil Engineering	
Active registration number / state / expiration date		#PE.0031955 / LA / 3-31-24	
Year registered	2005	Discipline	Civil Engineering **Other Pertinent Training / Certifications** LADOTD Maintenance & Rehabilitation of Historic Bridges Training Course, 2016 FHWA / NHI #130055 - Safety Inspection of In-Service Bridges, 1999 FHWA / NHI #130053 – Bridge Inspection Refresher Training, 2021 FHWA / NHI #130078 – Fracture Critical Inspection Techniques for Steel Bridges, 2007 FHWA / NHI #130110 – Tunnel Safety Inspection, 2017 (Refresher 2022)
Contract role(s) / brief description of responsibilities		Principal-in-Charge/Project Manager (**MPRs #1, #2, #3, #7**)	

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).
03/17-present	**S.P. No. 44-17264; H.011965.5, LA 47 over IWGO Rehabilitation, New Orleans, LA (DOTD) -** Project Principal/Project Manager for the structural rehabilitation, cleaning and painting of this historic bridge that consists of 1,248 feet of steel main spans with cantilevered arms and tied-arch (main span); 3,304 feet of welded steel girder approaches; 1,590 feet of prestressed girder approach spans; and 480 feet of concrete slab spans. Preliminary and final plans address the repair and rehabilitation of all substructure and superstructure elements. Served as Team Leader during the performance of a bridge inspection that included bridge cleaning and washing of key areas in advance of the design. Also provided QC/QA reviews of the inspection reports as well as all of the design documents prior to submission. The contract documents included requirements for the application of a high-performance 50-year coating system manufactured by TNEMEC.
09/14-12/14; 01/15-03/15	**Bayou Lafourche Movable Bridge Inspections, Lafourche Parish, LA (off-system bridge inspections) –** Project manager for the special emergency above and underwater inspections of **two pontoon bridges**. He performed oversight of the inspection and **QC/QA** of the inspection reports.
06/14-08/18	**S.P. No. 002562.5 – Bayou LaLoutre Bridge Rehabilitation, St. Bernard Parish, LA (DOTD)** – Project manager for the special rehabilitation inspections and rehabilitation design of this **vertical lift bridge** which included redesign of the bearings, lift tower column base and anchor bolts; steel overhead truss, lift tower, and lift girder repairs; an elevated platform for a new Operator House; and new fender system. He led the construction engineer services, contractor RFIs and submittal.
04/08-05/11	**44-0641 (700-99-0429) / H.005330.5 (701-65-1215) Little Caillou and Bayou LaCarpe Bridges, Houma, LA (DOTD) -** Project Manager for special rehabilitation inspections and rehabilitation designs of **two vertical lift bridges -** Little Caillou Bayou Bridge (LA 24) and Bayou LaCarpe Bridge (LA 661) in Terrebonne Parish. He also led construction engineering services, contractor RFIs and submittal.

10/98–03/05	**Route 175 Chincoteague - Chincoteague, VA -** Deputy Project Manager for the conceptual study, preliminary and final design for a $47 million replacement of the Black Narrows Bridge and the **single-leaf bascule type movable span across the Chincoteague Channel** on Route 175. The alignment contains compound and reverse horizontal curves and crosses open water and wetland areas. Responsibilities included management of subconsultant tasks for roadway, geotechnical, hydraulics, traffic study, utilities, and CADD.
04/16-12/19	**Contract No. 4400004920 (H.009859.5), Complex Load Rating and Inspection, Statewide, LA (DOTD) –** Principal-in-Charge/Project Manager responsible for directing the load ratings and inspections of complex bridges to include trusses and movable (vertical lift, bascule, swing) bridges. Services included: Plan and Document Retrieval and Review; Bridge Inspections; Structural Modeling and Analysis of; Load Rating of each assigned bridge based on present condition, capacity and loading using the load rating provisions in the Current AASHTO *Manual for Bridge Evaluation* and DOTD *Policies and Guidelines for Bridge Rating and Evaluation;* **Peer Review Ratings** and other reviews of ratings performed by sub-consultants.
04/16-02/20	**44-5960 & 44-13321 (H.009730.5 In-depth Bridge Inspection of Complex Structures, Statewide, LA (DOTD) –** Project Manager for the in-depth inspections of 3 complex trusses and 3 vertical lift bridges over major waterways. Performed QA/QC of the Prime's and TRC's in-depth inspections and reports. Services included: Plan and Document Retrieval and Review and Bridge Inspections.
03/20-present	**S.P. No.: H.005121, LA1/LA415 Connector, West Baton Rouge Parish, LA (LADOTD)** – Project Manager for the Stage 3 design of a new connector between LA 1 near LA 988 (Beaulieu Lane) and I-10 at the LA 415 interchange. The project, which is approximately 2.7 miles in length, includes a new four-lane roadway and two (2), two-lane bridges over the Gulf lntracoastal Waterway, with modifications to the access management at LA 1 ramp bridges tie-in at the I-10 ramps at LA 415. Elevated structures will be required for much of the project, including an elevated ramp from Northbound LA 1 to the new connector and an elevated ramp from the new connector to LA1 Southbound. Current conceptual construction cost is $160 million.
12/10-present	**S.P. No.: H.001234, LA 1 Port Allen Canal Bridge Replacement, West Baton Rouge Parish, LA (DOTD)** – **Bridge Study –** Project Manager for the development of a detour bridge study where two different detour alignments were developed. Each consisted of a 2,500' detour bridge over the Intracoastal Waterway where the proprietary Acrow system was considered and where adequate vertical clearance was provided. Conceptual bridge designs were developed for each alignment. **Rehabilitation Study** – Project Manager for the feasibility study that investigated three bridge rehabilitation options and one bridge replacement option for the existing twin bridges that carry LA 1 over the ICWW. The Study included the development of new roadway alignment options, construction phasing, traffic control schematics, investigating rehabilitation options for the existing bridge and preliminary design of a new bridge option. The rehabilitation and replacement options also investigated and proposed the use of Accelerated Bridge Construction techniques. **Preliminary & Final Design** – Project Principal for preliminary and final design and associated plans which included roadway, traffic control, maintenance of traffic, ITS, traffic signal, MSE wall, highway lighting and bridge plans. Coordinated with UPRR, the US Army Corps of Engineers, the USCG, and the Port of Baton Rouge. The project included a 1.5-mile "superstreet" (Access Management Improvements) portion.
03/15-present	**Walter O. Bigby Carriageway, Bossier City, LA (Bossier Parish)** – Project Manager for design of the North Parkway Extension from North of Eatman Street to Benton Highway. The project follows existing roadway for a portion of the alignment, then continues northward on new alignment between the Red River Levee and Union Pacific Railroad, crosses existing tracks with a new bridge structure (1,550' long consisting of a horizontally curved, haunched 4-span (185'-225'-300'-225') steel plate I-girder main span continuous unit with BT-72 prestressed concrete girder approach spans) and connects to Benton Highway at a new signalized intersection.
06/06-10/18	**S.P. No.: H.003886.5, I-49 & I-220 Interchange - Shreveport, Caddo Parish, LA (DOTD) -** Project Manager on this new, multi-lane divided roadway, 4-level interchange project. The project was completed on an accelerated schedule and involved his management of five design teams to complete the work. Mr. Krone was involved with the review of conceptual and structural designs and worked with the roadway design consultant to develop span arrangements, structure depths, pier concepts and roadway geometry for a dual bridge design that included post-tensioned segmental concrete and steel box girder superstructures. The project consists of five new bridges and two bridge widenings.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Michael Paul, P.E.**	Years of experience with this firm/employer	15
Title	Project Manager/Senior Bridge Engineer	Years of experience with other firm(s)/employer(s)	6
Degree(s) / Years / Specialization		M.S. / 2003 / Civil Engineering B.S. / 2000 /Civil Engineering	
Active registration number / state / expiration date		#PE.0032172 / LA / 3-31-2024	
Year registered	2006	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA/NHI #130055 - Safety Inspection of In-Service Bridges, 2007 FHWA/NHI #130078-Fundamentals of LRFR & Applications of LRFR for Superstructures LADOTD Highway Safety Manual Workshop, 2011 FHWA/NHI #130092 - Fracture Critical Techniques for Steel Bridges, 2015 ATSSA – Traffic Control Supervisor ASBI Grouting Training Certificate, 2012 LADOTD Maintenance & Rehabilitation of Historic Bridges Training Course, 2016 FHWA-NHI #132082 – LRFD for Highway Bridge Substructures FHWA-NHI #134006 – Utility Coordination for Highway Projects
Contract role(s) / brief description of responsibilities		Bridge Design Task Leader (**MPR #3**)	

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).
12/20-present	**S.P. No. 44-17264; H.011965.5, LA 47 over IWGO Rehabilitation, New Orleans, LA (DOTD)** – Deputy Project Manager for the structural rehabilitation, cleaning and painting of this historic bridge that consists of 1,248 feet of steel main spans with cantilevered arms and tied-arch (main span); 3,304 feet of welded steel girder approaches; 1,590 feet of prestressed girder approach spans; and 480 feet of concrete slab spans. Final plans address the repair and rehabilitation of all substructure and superstructure elements. Participated in the bridge inspection that included bridge cleaning and washing of key areas in advance of the design. Also served as team leader for the development of the rehabilitation plans. The contract documents included requirements for the application of a high-performance 50-year coating system manufactured by TNEMEC.
05/16-02/18	**Contract No. 4400004920 (H.009859.5), Complex Load Rating and Inspection, Statewide, LA (DOTD)** – Engineer responsible for the load rating of structures under this retainer contract. For the Bayou Teche **swing bridge**, he performed AASHTOWare BrR model and load rating of the main span girders. He used Midas and hand calculations to analyze the pivot girder.
08/12-06/13	**S.P. No.: H.002562, Bayou La Loutre Bridge Rehabilitation, St. Bernard Parish, LA (DOTD) –** Bridge engineer for the design and conceptual development of the fender and pier protection system for this **vertical lift bridge**.
01/2010-03/2011	**S.P. Nos.: 008-02-0034 & 008-03-00600, Bridge Over Bayou Grosse Tete Left-Turn Lanes at LA 77 & LA 78/411, Pointe Coupee Parish, LA –** Bridge Task Leader for the Stage 3 preliminary and final bridge design, as well as provided engineering support services during the construction phase of this bridge replacement project. This project consisted of replacing the existing 64-foot-wide bridge with a **new 285-foot-long, 86-foot-wide, 3-span continuous prestressed concrete girder bridge on prestressed concrete pile bents**. As part of the design, evaluated the existing non-redundant deck girder bridge and developed phased construction schematics for the roadway to remain open to traffic during demolition of the existing bridge and construction of the new bridge.
08/07-02/09	**S.P. No.: 450-09-0026, I-10 Mississippi River Bridge at Baton Rouge Rehabilitation (DOTD) -** Developed the design documents and plans for floor beam and floor beam connection distortional crack retrofit repairs.

12/10-present	**S.P. No.: H.001234.5, LA 1 Port Allen Canal Bridge Replacement, Port Allen, LA (DOTD) - <u>Detour Bridge Study</u>** – Lead engineer for the development of a detour bridge study where two different detour alignments were developed. Each consisted of a 2,500' detour bridge over the Intracoastal Waterway where the proprietary Acrow system was considered and where adequate vertical clearance was provided. Conceptual bridge designs were developed for each alignment. **<u>Rehabilitation Study</u>** - Lead engineer in conducting a **Stage 0 Feasibility Study** that investigated three different bridge rehabilitation options and one bridge replacement option for the existing twin bridges that carry LA 1 over the Intracoastal Waterway. As part of the study, Mr. Paul was involved with the development of new roadway alignment options, construction phasing, traffic control schematics, investigating rehabilitation options for the existing bridge and preliminary design of a new bridge option. The rehabilitation and replacement options also investigated and proposed the use of Accelerated Bridge Construction techniques. **<u>Preliminary & Final Design</u>** – Project Manager in developing the Stage 3 preliminary (bridge and roadway) and final design (roadway only) and associated plans which included roadway, traffic control, maintenance of traffic, ITS, traffic signal, MSE wall, highway lighting and bridge plans. Coordinated with UPRR, the US Army Corps of Engineers, the USCG, and the Port of Baton Rouge. A traffic analysis was conducted with the submittal of a Level 3 Transportation Management Plan. The project included a 1.5-mile "superstreet" portion that consists of signalized and un-signalized J-turns. The proposed LA 1 SB and LA 1 NB bridges are 2,680' and 2,700', respectively, and consist of PPC girder approach spans and 3 span continuous steel I-girder spans over the Intracoastal Waterway.
07/06-10/19	**S.P. No.: H.003886.5, I-49 & I-220 Interchange, Shreveport, Caddo Parish, LA (DOTD) -** Deputy Project Manager, Design Coordinator and Baton Rouge Team Leader on this new, multi-lane divided roadway, 4-level interchange project. Mr. Paul served as conceptual and structural designer and worked with the roadway design consultant in developing span arrangements, structure depths, pier concepts and roadway geometry for a dual bridge design that includes post-tensioned segmental concrete and steel box girder superstructures. Mr. Paul was also involved with the development of the Project Design Criteria, development and implementation of the Project Quality Control Management plan and working with the team architect to develop aesthetic bridge design schemes. The project consisted of 5 new bridges (Ramp EN 3,070', Ramp SE 3,300', Ramp WN 700', I-49 NB and SB over MLK Dr. 462' each) and 2 bridge widenings (I-220 over Russell Rd. 322.5' each). The Ramp EN, SE and WN bridges consist of a dual design with precast segmental post-tensioned concrete and steel trapezoidal box girder superstructure alternates.
06/15-present	**Walter O. Bigby Carriageway, Bossier City, LA -** Bridge Task Leader for the design of a new bridge that will be 1,520' long and consist of a horizontally curved, haunched 4-span (185'-225'-300'-225') steel plate I-girder main span continuous unit over the Union Pacific Railroad and BT-72 prestressed concrete girder approach spans. The bridge will consist of 4-12' travel lanes, a 4' left shoulder, and a 9'-8" right shoulder, and have an out-to-out width of 66'-2" for the majority of the bridge length. The northern portion of the bridge will flare out to a total width of 70' to accommodate a turning lane. The bridge substructures will consist of reinforced concrete piers and deep prestressed precast concrete pile foundations. As the bridge is located adjacent to the Bossier Levee, Mr. Paul also took the lead in working with the US Army Corps of Engineers to develop the 408 permit request.
03/20-present	**S.P. No.: H.005121.5, LA 1/LA 415 Connector, West Baton Rouge Parish, LA (DOTD) -** Deputy Project Manager for development of preliminary plans for new 2.7 mile corridor between LA 1 near LA 988 (Beaulie Lane) and I-10 at the 415 interchange. The project includes a four-lane roadway, bridges over the Gulf Intracoastal Waterway and flyover ramps at the LA 1 connection. Mr. Paul served as conceptual structural designer and developed the Evaluation of Single Versus Dual Bridge Options Over GIWW report. Mr. Paul worked with stakeholders for development and selection of conceptual alternate alignment when it was determined the Environmental Assessment Report alignment was no longer feasible due to recent development. Mr. Paul worked with the Traffic Engineering subconsultant and Roadway Geometric Designers for development of lane configuration and geometry at LA 1 and LA 415 tie-in areas and modification of LA 1 superstreet layout. Mr. Paul developed the Project QA/QC Plan, Design Criteria and Project Schedule.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Xianzhi ("Sage") Liu, P.E.**	Years of experience with this firm/employer	10
Title	Structural Engineer	Years of experience with other firm(s)/employer(s)	5
Degree(s) / Years / Specialization	M.S. / 2003 / Civil Engineering M.S. / 1999 / Coastal Engineering B.S. / 1996 / Civil Engineering		
Active registration number / state / expiration date	#PE.0034727 / LA / 9-30-2023		
Year registered	2009	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities	Bridge Engineer / Load Rating Task Leader (**MPR #4**)		

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).
02/21	**Broadmore Bridge Inspection and Special Haul Load Rating, Lake Arthur, LA (Private Client)** - Technical lead responsible for QC/QA of the load ratings involving a concrete slab bridge for special hauling vehicles. He used current AASHTO BrR and MBE.
04/16-03/20	**Contract No.: 4400004920 (H.009859.5), Complex Load Rating, Statewide, LA (DOTD) –** Served as the lead engineer for superstructure and substructure **load rating for multiple complex bridges**, including LA1 truss bridge over Atchafalaya river, LA47 IWGO tied arch truss bridge, US 90B Riverbound Expressway deck truss bridge and the following movable bridges: Intracoastal Waterway Bridge at Ellenders (**vertical lift**), LA 654 over Bayou LaFourche (**vertical lift**), LA 657 over Bayou LaFourche (**vertical lift**), LA 319 Intracoastal Canal Bridge (**bascule**), LA 83 over Patout Bayou (**swing**), Local Road over Bayou Terrebonne (**swing**), Bridge over Bayou Teche at Adeline (**swing**). He performed inspections, load ratings, and developed load rating reports. He also led the efforts to analyze several bridges with unique configurations and high complexities. During his performance of the work, he has utilized several structural analysis software packages including LUSAS, MIDAS Civil and AASHTOWare BrR for structural analysis, validations, and load ratings. Load rating work was performed in accordance with provisions in the current AASHTO *Manual for Bridge Evaluation* and the DOTD *Policies and Guidelines for Bridge Rating and Evaluation*.
10/16-11/17	**3rd Street Movable Bridge Load Rating and Rehabilitation, San Francisco, CA (City of San Francisco) –** Served as the lead for superstructure load rating of this Strauss Bascule truss bridge. Using LUSAS software, he performed a detailed 3-D Finite Element analysis of the bridge which has unique configurations of traffic lanes and sidewalks. He also performed structural analysis and generated governing load cases for truss member, floor beam, stringers and gusset plate ratings.
09/14-03/15	**Bayou Lafourche Movable Bridge Inspections, Lafourche Parish, LA (off-system bridge inspections)** – Served as Bridge Engineer for the special emergency inspections of two pontoon off-system bridges. He led the inspection teams, reviewed as-built plans, performed inspections, and developed repair recommendation and cost estimates based on the bridge conditions.
09/15-11/15	**S.P. No. H.002562 -- Bayou Lafourche Movable Bridge Rehabilitation, St Bernard Parish, LA** – Bridge Engineer for the design of the new operator's house as part of the vertical lift bridge rehabilitation. He designed the elevated operator's house foundation slab supported on battered piles with consideration of hurricane surge related load conditions.
05/07-08/07	**MLK Jr. Bridge over Maumee River Rehabilitation, Toledo, OH -** Performed Finite Element analysis on the MLK Jr. bascule bridge using in house Finite Element software during the post-design phase. Analyzed the structural panel for the reduced counter-weight load cases to ensure the current structure meeting temporary operation requirements.
01/19-05/20	**Walter O. Bigby Carriageway, Bossier City, LA –** Served as the lead engineer for superstructure design of the main steel girder spans. He has performed design modeling, analysis and plan development for the main continuous steel girder spans with maximum span length of 300'. He has utilized several structural analysis software packages including LUSAS, MDX for structural analysis.

01/13-07/14 05/17-12/17	**S.P. No. 003905 – I-49 North (I-220 to MLK Drive), Caddo Parish, LA (DOTD) –** Served as the lead engineer for superstructure design of the segmental bridge alternative. He developed calculations and final plans for the ramp EN bridge which is a 15-span, precast post-tensioned segmental bridge with total length of 3,030 ft. He also developed the complete as-designed and as-built load rating reports for the superstructure of the ramp EN bridge.
03/11-01/12	**S.P. No. 700-24-0031 – US 190 Mississippi River Bridge Rehabilitation, Baton Rouge, LA (DOTD) -** Performed structure analysis for the purpose of rehabilitating this major truss bridge. Functioned as an inspector performing a special condition inspection of the main truss. Performed at an accelerated pace, Mr. Liu reviewed existing plans and drawings, inspected and assessed deteriorated structures and developed plans for repair locations, repair schemes and details, which include repair/replacement of main truss members, lateral bracings and expansion bearings, and adding new safety cable system. He also reviewed load rating reports for the both the super-truss and the approach span steel bent towers, evaluated the bridge conditions and prioritized the bridge repair items. Mr. Liu reviewed the submitted shop drawings for structural repair and answered RFIs from the contractor during construction.
11/19-10/20	**Contract No.: 4400004920 (H.012485.1), Off-system Bridge Load Rating (DOTD)** - Technical lead for the load rating of more than 400 **off-system bridges**. He performed load rating, QC/QA of the load rating for superstructure and substructures, develop load rating reports, and propose repair options for bridges with posting drop.
10/14-12/14	**Department of Energy, Bayou Choctaw Off-system Bridge Inspections, Iberville Parish, LA. -** Performed load rating analysis and load rating calculations, and developed loading rating reports for this Double-Double Bailey Bridge (steel truss). He also performed quality control for the load rating of a concrete girder bridge which carries vehicle loads and heavy industrial pipe racks.
11/07-08/08	**S.P. No. 006-01-0018 - Huey P. Long Mississippi River Bridge Widening, Jefferson Parish, LA (DOTD)** – Performed structure modeling of both the existing and widened truss; reviewed existing shop drawings; assisted with determining the existing truss geometry and performed camber analysis for fabrication of the widening truss. Led the truss monitoring task during the truss erection. Worked closely with bridge monitoring teams, and predicted truss member stresses under calibration loads, dead loads and erection loads for various construction stages.
08/10-05/14	**Phill G. McDonald Bridge of I-64 over Glade Creek, Raleigh County, WV (WVDOH) -** Served as the structural lead for the truss analysis, gusset plate rating, and bridge monitoring for this structure which is one of the highest deck truss bridges in the world (560'-784'-560' spans). He performed a detailed 3-D Finite Element analysis of the bridge using LUSAS software, generated governing load cases for gusset plate ratings, developed a rating spreadsheet in accordance with FHWA publications for gusset plate rating, and quality controlled the final rating report. He also led efforts to develop bridge monitoring schemes, deploy sensors, and perform data analysis and interpretation for the purpose of diagnosing and rehabilitating abnormal bridge expansion and racking. He performed quality control reviews of the final plans for rehabilitation design.
07/10-11/10; 03/14-06/14	**Kanawha Falls Steel Truss Bridge Rating, Kanawha Falls, WV (WVDOH) –** Assisted in the rehabilitation study for this 985' steel truss bridge and 55' steel plate girder span. He quality-controlled the load rating analysis using STAAD and RISA, including the review of existing inspection reports, rating calculations for one truss span and one girder span based on the latest Manual for Bridge Evaluation. He also led the 3-D Finite Element analysis for final design of the truss rehabilitation. He performed detailed analysis for truss forces under dead loads, live loads and wind loads. He also performed concurrent live load analysis for gusset plate rating of the truss.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Nichole Caiazzo, P.E.**	Years of relevant experience with this employer	7
Title	Bridge Engineer	Years of relevant experience with other employer(s)	7
Degree(s) / Years / Specialization		B.S. / 2008 / Civil Engineering	
Active registration number / state / expiration date		#PE.0041078 / LA / 3-31-2023	
Year registered	2016	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA-NHI-130092 - Fundamentals of LRFR for Bridge, 2016 FHWA-NHI-132082 - LRFD for Highway Bridge Substructures, 2018 FHWA-NHI-132010B - LRFD for Foundation Design, 2018
Contract role(s) / brief description of responsibilities		Load Rating Engineer (**MPR #4**)	

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).
11/19-12/20	**Contract No. 4400004920 (H.012485.1), Complex Off-system Bridge Rating and Evaluation, Statewide, LA (DOTD) –** Load rating engineer during the inspection and load rating of 346 off-system bridges (COSLAB, COPCSS). Performed load rating analysis u of the superstructures and substructures (timber and concrete piles) using AASHTOWare BrR.
04/16-06/19	**Contract No. 4400004920 (H.009859.5) On-system Complex Load Rating, Statewide, LA (DOTD) –** Bridge Engineer for the load rating of movable and complex truss bridges using AASHTOWare BrR in accordance with the AASHTO Manual for Bridge Evaluation (MBE) using the Load Resistance Factor Rating (LRFR) method, and the DOTD Policies and Guidelines for Bridge Rating and Evaluation. She load rated reinforced concrete slab approach spans and open steel grid decks along the portion of the main span, stringers and floorbeams in the main span, and reinforced concrete bent caps. She used CONSYS software and Mathcad hand calculations to load rate the open steel grid deck and concrete bent caps.
05/19-12/20	**South Carolina Department of Transportation, Bridge Load Rating and Evaluation Services (District 4), SC -** Engineer-of-Record, load rater and reviewer responsible for reviewing as-built plans and recent inspection reports, along with the completion of load capacity ratings and related tasks for 24 bridges. Structures consisted of steel plate girder, prestressed cored slab, reinforced concrete flat slab and reinforced concrete precast panel superstructures. Load rating was performed using AASHTOWare BrR in accordance with the SCDOT Load Rating Guidance Document and AASHTO Manual for Bridge Evaluation (MBE) using the Load Resistance Factor Rating (LRFR) and Load Factor Rating (LFR) methods. Led the load rating QA process.
06/19-09/19	**Greenville Garlington, LLC, Honbarrier Drive over Rocky Creek Bridge Assessment and Load Rating** – Engineer responsible for a load capacity rating of the prestressed concrete channel beam superstructure of this existing 3-span bridge built in 1977 that had been closed to traffic. Provided the load rating report and recommendations for keeping the bridge in service. Load rating was performed using AASHTOWare BrR in accordance with the SCDOT Load Rating Guidance Document and AASHTO Manual for Bridge Evaluation (MBE) using the Load Resistance Factor Rating (LRFR) and Load Factor Rating (LFR) methods.
04/19-12/20	**South Carolina Department of Transportation, SCDOT Bridge Inspection and Evaluation Services** – Engineer-of-Record and load rater responsible for reviewing as-built plans and recent inspection reports, and completing load capacity ratings and related tasks for 6 bridges. Structures consisted of prestressed concrete beam, reinforced concrete tee beam and steel plate girder superstructures. Load rating was performed using AASHTOWare BrR in accordance with the SCDOT Load Rating Guidance Document and AASHTO Manual for Bridge Evaluation (MBE) using the Load Resistance Factor Rating (LRFR) and Load Factor Rating (LFR) methods.
05/18-07/18	**West Virginia Department of Transportation-Division of Highways, Henrietta Bridge Renovations, Calhoun County, WV** - Bridge engineer responsible for reviewing the load rating of a 3-span superstructure replacement consisting of continuous steel beams

	superstructure on repaired substructure. The load rating was performed using MDX in accordance with the AASHTO Manual for Bridge Evaluation (MBE) using the Load Resistance Factor Rating (LRFR) method and the WVDOH Bridge Design Manual.
11/17-02/18	**Office of State Aid Road Construction, Off-system Bridge Inspections and Load Ratings, Amite, Lincoln and Pike Counties, MS** - Bridge engineer responsible for analyzing all superstructure components of over 100 existing concrete and timber bridges on an expedited schedule using AASHTOWare BrR in accordance with the AASHTO Manual for Bridge Evaluation (MBE), MDOT Bridge Safety Inspection Policy and Procedure Manual, and MOSARC National Bridge Inspection Program Local System Manual. Precast concrete Choctaw on concrete and timber pile caps were analyzed using the Load Factor Rating (LFR) method, while timber bridges on timber pile caps were analyzed using the Allowable Stress Rating (ASR) method. She developed load rating reports, completed load rating summary sheets and posting schedules for signage, determined superstructure repairs necessary to achieve required load carrying capacity established by MOSARC, and updated load rating analysis and documentation with ongoing superstructure repairs.
03/17-11/18	**West Virginia Department of Transportation-Division of Highways, Rock Creek Development, Boone County, WV** - Bridge engineer responsible for load rating this new 5-span prestressed concrete I-beam superstructure with concrete integral abutments on steel piles and concrete multi-column piers with drilled caissons. She developed detailed load rating sheets for the design plans as required by the WVDOH. The load rating was performed using AASHTOWare BrR in accordance with the AASHTO Manual for Bridge Evaluation (MBE) using the Load Resistance Factor Rating (LRFR) method and the WVDOH Bridge Design Manual.
06/12 – 12/15	**Virginia Department of Transportation, Limited Services Statewide (VA) Design Term Contract -** Bridge Engineer responsible for the preparation of calculations and models for the design and analysis of prestressed concrete bulb-tee, prestressed concrete voided slab and steel plate girder superstructures, as well as reinforced concrete abutments, wingwalls, piers and pile bents with prestressed concrete and steel piles. She also generated and detailed preliminary, as-built and revision plans; calculated quantities and prepared the engineer's cost estimate; and reviewed shop drawings and RFI's. Projects under this contract were designed in accordance with AASHTO LRFD Specifications, VDOT Structure and Bridge Manuals and VDOT Guides and Instructional and Informational Memoranda. Load ratings were performed using Virtis in accordance with the AASHTO Manual for Bridge Evaluation (MBE) using the Load Resistance Factor Rating (LRFR) method.
02/09-12/12	**Virginia Department of Transportation, Bridge Load Rating - Statewide, VA** - Bridge engineer assigned to perform the load rating of over 200 existing bridges using Virtis in accordance with the AASHTO Manual for Bridge Evaluation (MBE) using the Load Resistance Factor Rating (LRFR) method and Load Factor Rating (LFR) method as specified by VDOT Guides and Instructional and Informational Memoranda. The bridge types included steel rolled beam and girder, prestressed box and I-beam, prestressed slab, reinforced concrete slab and tee beam, and timber superstructures. Developed the Virtis Software training and load rating instruction, references, project setup and procedures for VDOT load rating. (2009 – 2012
02/09-12/12	**Virginia Department of Transportation, NOVA Limited Services Maintenance and Repair Contract, Northern, VA** - Bridge engineer during the performance of load ratings for 27 bridges with steel beam superstructures and concrete substructures using Virtis in accordance with the AASHTO Manual for Bridge Evaluation (MBE) using the Load Resistance Factor Rating (LRFR) method.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Dong Wang, Ph.D., S.E., P.E.**	Years of experience with this firm/employer	7
Title	Civil/Structural Engineer	Years of experience with other firm(s)/employer(s)	0
Degree(s) / Years / Specialization		Ph.D. / 2014 / Civil Engineering M.S. / 2009 / Structural Engineering B.S. / 2007 / Engineering Mechanics	
Active registration number / state / expiration date		#PE.0042845 / LA / 03-31-23	
Year registered	2018 (PE of LA) 2020 (SE of LA)	Discipline	Civil Engineering / Structural Engineering **Other Pertinent Training / Certifications** FHWA-NHI-130092-Fundamentals of LRFR and Applications of LRFR for Bridge Superstructures, 2015 LADOTD AASHTOWare Bridge Rating Fundamentals Training
Contract role(s) / brief description of responsibilities		Bridge Engineer / Load Rating (**MPR #4**)	

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).
06/21-12/21	**Contract No. 4400020156 (H.011965.5), LA 47 IWGO Bridge Rehabilitation, New Orleans, LA (DOTD) -** Bridge engineer responsible for an inspection of the bridge and rehabilitation design for the steel plate girder spans. Generated plan sheets for the rehabilitation of various bridge components of the steel plate girder spans, including concrete barrier, drainage trough, stiffener, cross-frame, lateral bracing, and girder splice.
02/21	**Broadmore Bridge Inspection and Special Haul Load Rating, Lake Arthur, LA (Private Client)** - Load rating engineer responsible for the load rating of a concrete slab bridge for the special hauling vehicles. He used AASHTO BrR for the concrete superstructure, load rated the timber piles and concrete caps, and issued posting recommendations.
07/18-10/20	**Walter O. Bigby Carriageway Bridge – Bossier City, LA (City of Bossier City) -** Bridge engineer responsible for designing and detailing bridge deck overhang, bearing pads, pile bents and abutments. Checked modeling and design of steel girder spans. Performed stability analysis of steel girder spans. Prepared quantities and design calculation books. Performed load ratings of steel girder spans and prepared the load rating report. Checked load rating of one pile bent.
04/19-09/20	**Contract No. H.012485.1, Load Rating of 426 Off-System Bridges, Statewide, LA (LADOTD) –** Load rating engineer responsible for the load rating of 346 off-system bridges (COSLAB, COPCSS, concrete and steel girders). He performed the load rating analyses using AASHTOWare BrR and other software for the superstructures and substructures (timber and concrete piles). He developed influence lines and models for the ap and pile elements. He performed the quality control for the load rating calculations and analysis models rated by fellow engineers.
06/16-08/19	**Contract No. 4400004920 (H.009859.5), Complex Load Rating and Inspection, Statewide, LA (DOTD)** – Bridge engineer responsible for completing the complex load rating of the superstructure elements of the LA 47 IWGO Bridge (tied arch), the LA1 over Atchafalaya River Bridge (truss), the LA 27 over ICWW Bridge (**vertical lift**), the LA 654 Bayou Lafourche Bridge (**vertical lift**), the LA 83 Patout Bayou Bridge (**swing**), the LA 319 Intracoastal Bridge (**bascule**), the St. Ann Bridge over Bayou Terrebonne (**swing**) and US 90 Riverbound Expressway Bridge (deck truss). Work was completed using the load rating provisions in the current AASHTO Manual for Bridge Evaluation and the DOTD Policies and Guidelines for Bridge Rating and Evaluation. Developed the AASHTOWare BrR (Virtis) load rating, MIDAS Civil modeling, and Excel/MathCAD data processing. He wrote portions of the load rating reports for the bridges.

04/15-10/15	**S.P. No.: H00256.5, Bayou LaLoutre Bridge Rehabilitation, St. Bernard Parish, LA (DOTD) –** Design engineer responsible for performing the design and quantity calculations for the lower platform design of this **vertical lift bridge**.
07/19	**BEL-70-2684C Bridge Load Rating, Ohio Department of Transportation, Statewide, OH -** Load rating engineer responsible for load rating of the BEL-70-2684C bridge. He used AASHTO BrR for the superstructures and provided posting recommendations.
05/19-06/19	**Off-system Bridge Load Rating, South Carolina Department of Transportation, Statewide, SC -** Load rating engineer responsible for the load rating of several off-system bridges in South Carolina. He used AASHTO BrR for the concrete superstructures, load rated the substructure elements, and issued posting recommendations.
10/17-02/18	**Mississippi Department of Transportation, Office of State Aid, Bridge Inspection and Off-system Load Rating Contract, Statewide, MS -** Load rating engineer for the **load ratings** of concrete and timber superstructure elements and substructure elements in accordance with the National Bridge Inspection Standards (NBIS) and AASHTO MBE. He used AASHTOWare BrR and MIDAS Civil for the analysis of the superstructure elements.
07/15-03/16	**Contract No. 4400002791, (H.009859.5), LA 1 Port Allen Canal Bridge, West Baton Rouge Parish, LA (DOTD) –** Bridge engineer responsible for preliminary design of steel girder spans, PCC girder spans, and column bents. Performed quantity calculations, CAD drawings for GP&E sheets, typical sections, framing plan and foundation plan. Performed the QC for vertical clearance calculations.
02/15-06/15	**Admiral T.J. Lopez Bridge - Kanawha County, WV (WVDOH) -** Bridge engineer responsible for developing and performing the LUSAS modeling and the Excel data processing for the truss gusset plate load rating.
05/15-11/15	**Contract No. 4400002791 (H.003495 & H.011111), I-49 & I-220 Interchange, Caddo Parish, LA (DOTD)** – Bridge engineer responsible for developing and performing the AASHTOWare BrR load rating for the I-49 over MLK Bridge, including writing of the load rating report.
02/18-02/18	**MDOT Non-Standard Choctaw Bridge Load Rating - Statewide, MS (MDOT) -** Bridge engineer responsible for load rating of eleven non-standard Choctaw bridges.
08/17	**Private Industrial Facility Bridge Seabrook, NH –** Performed load rating in conjunction with an In-Depth Routine Inspection to determine the deficiencies of the steel superstructure and concrete substructure, as well as the condition of the bridge, and prepare an engineering report. He performed the load ratings using LFD rating for HS20-44 loads and modeling to determine loads on the bridge of a Terex RT 670 crane as well as a Goldhofer PST/H6.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Denny Dispennette, PE**	Years of relevant experience with this employer	5
Title	Bridge Engineer	Years of relevant experience with other employer(s)	5
Degree(s) / Years / Specialization		M.S./ 2012 / Civil Engineering B.S. / 2010 / Civil Engineering	
Active registration number / state / expiration date		#PE.0044141 / LA / 3-31-2024	
Year registered	2017	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FWHA/NHI - 130053 Bridge Inspection Refresher Training, 2021 FWHA/NHI – 130055 Safety Inspection of In-Service Bridges, 2014 NHI - LRFR for Bridge Superstructures, 2014 NHI - Fracture Critical Inspection Techniques for Steel Bridges, 2021 FHWA – Introduction to Element Level Bridge Inspection, 2016
Contract role(s) / brief description of responsibilities		Load Rating Engineer / Bridge Inspection (**MPR #4**)	

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).
11/21 – 12/21	**Contract No. 44-13321; Retainer Contract for In-depth Bridge Inspections (On-System), Statewide (DOTD) -** Team Leader responsible for the routine and element level inspection of the I-10 over Calcasieu River truss bridge. Aspects of the structure that he inspected included the deck, steel superstructure (girders, floor beams, stringers, bearings), and steel substructure (bent caps, columns, diagonal bracing, gusset plates) while using aerial access equipment. He also wrote the inspection report defect list and updated the drawings for the defects.
12/19-12/20	**Contract No. H.012485.1 Off-system Load Rating, Statewide, LA (DOTD) –** Load rating engineer during the load rating of 300 off-system bridges (COSLAB, COPCSS, steel and concrete girders, culverts). He rated the concrete panel and slab superstructures using AASHTO BrR software and timber pile substructure units using Excel and STAAD. He was the responsible engineer for over 50 bridge load rating reports. The load ratings were performed using the current AASHTO *Manual for Bridge Evaluation* and DOTD *Policies and Guidelines for Bridge Rating and Evaluation.* The project was completed on an accelerated schedule.
10/19-03/20	**Off-system Bridge Load Rating, South Carolina Department of Transportation, Statewide, SC -** Load rating engineer responsible for the load rating of several off-system bridges in South Carolina. He used **AASHTO BrR** for the concrete superstructures, load rated the substructure elements, issued posting recommendations, and updated NBI data.
10/17-02/18	**Office of State Aid and Construction, Bridge Inspection and Off-system Load Rating Contract, Statewide, MS** - Load rating engineer during the performance of load rating analyses on the timber substructure elements of 160 bridges in Lincoln, Pike, and Amite counties. He analyzed timber and concrete substructure components in compliance with the AASHTO MBE. This load rating effort was completed on an accelerated schedule.
04/18-12/19	**Contract No. 4400004920 (H.009859.5) Complex Load Rating and Inspection, Statewide, LA (DOTD) –** Load rating engineer during the performance of load ratings and inspections of complex bridges that included complex trusses and movables (vertical lift, bascule, swing). Services included: Plan and Document Retrieval and Review; Bridge Inspections; Structural Modeling and Analysis; and Load Rating of each assigned bridge based on present condition, capacity and loading using the load rating provisions in the Current AASHTO *Manual for Bridge Evaluation* and DOTD *Policies and Guidelines for Bridge Rating and Evaluation*.

10/12-09/17	**West Virginia Division of Highways, Charleston, WV -** Responsibilities included the load rating of trusses, steel deck girders, steel box beams and simple span bridges. Performed the QC/QA of load ratings, developed the load rating policy for the State's load rating program, reviewed consultant load rating reports, and taught classes on load rating to State bridge engineers. He was also the inspection team leader for multiple complex girder and truss bridges.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Robert Schamber, P.E.**	Years of experience with this firm/employer	40
Title	Senior Advisor	Years of experience with other firm(s)/employer(s)	1
Degree(s) / Years / Specialization		M.S. / 1980 / Civil Engineering B.S. / 1978 / Civil Engineering	
Active registration number / state / expiration date		#PE.00038075 / LA / 9-30-21	
Year registered	2013	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		QA/QC Manager (**MPR #7**)	

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).
05/16-02/20	**San Francisco Public Works, Third Street Bridge Rehabilitation, San Francisco, CA** - Serves as Senior Advisor for the design, environmental documentation and construction support services for this rehabilitation project. The historic Third Street Bridge over Mission Channel, commonly known as the Lefty O'Doul Bridge, **is a single leaf, heel trunnion type bascule span bridge**. A team of structural, bridge and environmental engineers was used to inspect and assess the condition of the bridge, then prepare rehabilitation plans which allowed the City to bid the project. The project included repairing and replacing damaged steel members, welds, concrete counterweights, support piles, bridge fenders, and portions of the bridge deck, as well as spot removal of rust and associated priming and recoating. TRC also helped plan and coordinate the work of underwater divers and barge and raft crews installing temporary barriers and containment curtains. TRC also supported the City during the construction process.
04/18-05/18	**County of Alameda, Moveable Bridge Inspection – Alameda, CA** - Served as TRC Quality Control Reviewer for the in-depth inspection project of Park Street, High Street and Miller Sweeney **moveable bascule span bridges** over the Alameda Tidal Basin. Areas of inspection included the floor system, truss members, gussets plate, and upper lateral system of Park and High Street Bridge. Inspections were done from a bucket boat that had a basket with 62' reach capable of reaching all locations of the floor system and the upper truss gussets from the water as well as a boom truck to inspect the upper lateral system and sway braces. Areas of inspection on Miller Sweeney included the steel box girder spans, orthotropic steel deck, pre-cast concrete girders spans and concrete piers. A report was prepared and submitted to the Prime consultant.
03/11-09/11	**S.P. No.: 700-24-0031, US-190 Mississippi River Bridge, Cleaning, Painting and Repair Phase I, Baton Rouge, LA (DOTD)** - Served as QA/QC Reviewer for the TRC Baton Rouge office during the following Phase I rehabilitation of splice plate repairs on the upper and lower chords, and selected portal frames and upper laterals. Developed conceptual repair details and prepared plan drawings.
12/12-03/14	**S.P. No. H.003886.5, I-49 North – Segment K (I-220 to MLK Drive), Caddo Parish, LA (DOTD)** - Lead Designer for the preparation of bridge plans and specifications for the I-49/I-220 interchange ramp bridges under an accelerated project schedule. Two design alternatives were prepared for the project: a segmental concrete box girder and a steel box girder. The design was in accordance with the AASHTO LRFD Bridge Design Specifications (5th Edition) and LA DOTD standards. Served as Lead Designer for the steel box girders on the SE and WN Ramp designs, including the overall coordination of staff and review of the plans and specifications in accordance with AASHTO LRFD standards. He also provided guidance for the seismic design criteria used on the project as well as provided QC/QA and peer reviews of the designs.

05/99-06/07	**San Francisco Public Works, Fourth Street Bascule Bridge Rehabilitation, San Francisco, CA** - Served as Project Manager and Engineer of Record for the seismic retrofit and rehabilitation of this **historic bascule bridge**. The structure is one-of-a kind in California and consists of two, slender, steel-laced towers which support a massive overhead counterweight weighing 1400 kips. The project included a seismic retrofit strategy, PS&E development and construction support. The mechanical and electrical components were completely replaced with a new system. Mr. Schamber performed inspections on the bridge and managed 10 subconsultants along with TRC's own engineering staff.
09/96-09/99	**San Francisco Public Works, Third Street Bascule Bridge, San Francisco, CA -** Served as the Engineer of Record for a $10 million seismic retrofit and rehabilitation of this **historic movable structure**. The PS&E design plans included structural rehabilitation and seismic retrofit, along with refurbishing of the mechanical and electrical components. Construction support services were also provided.
01/02-03/03	**Alameda County, Fruitvale Avenue Movable Bridge, Phase I, Alameda County, CA** - Served as Project Manager for a feasibility study to consider a "lifeline" structure to provide critical transportation between the cities of Alameda (an island) and Oakland. The objective of the study was to conduct a preliminary screening of **six movable bridges** and two tunnels to determine the most feasible lifeline access structure to service the City of Alameda. A Feasibility Lifeline Study and Project Study Report were prepared. Mr. Schamber managed six subconsultants along with TRC's engineering staff.
03/03-09/04	**Alameda County, Fruitvale Avenue Vertical Lift Railroad Bridge and Miller Sweeny Bascule Bridge, Phase II, Alameda County, CA** - Served as Project Manager for a seismic vulnerability study of this "lifeline" **vertical lift** structure. Phase II consisted of a seismic vulnerability evaluation, environmental studies, geotechnical studies, traffic impact studies, underwater investigations, utility relocation, and a hydraulics study. Mr. Schamber managed six (6) subconsultants along with TRC's engineering staff. He also coordinated the work between two agencies, Alameda County and the City of Alameda.
11/18-12/19	**West Virginia Division of Highways, I-70 Bridge Rehabilitations, Ohio County, WV** - QA/QC Reviewer for the Rancho Cordova office where he oversaw the work of design engineers for the rehabilitation of two bridges on this fast-paced project. The total project included 27 bridges designed by three firms in offices across the U.S. Work began in November of 2018 and 2700 final plan sheets, specifications and construction cost estimates were completed in June of 2019. Mr. Schamber provided QA/QC reviews of all submittals.
05/07-06/12	**Interstate 40 Mississippi River Bridge Seismic Retrofit, Ramps and Group I2, Shelby County, TN (TDOT)** - Served as Project Manager for the $43 million seismic retrofit of steel I-girder structures for the ramps and Group I-2. The retrofit work included abutment, footing, column, bent cap, cross frame replacement, and bearing retrofit. Large modular joints were installed at a few locations in the deck. Mr. Schamber also performed intermittent inspections on the bridge.
01/07-10/11	**Tennessee Department of Transportation, Interstate 40 Mississippi River Bridge, Project 6, Shelby County, TN** - Served as Project Manager for a $16 million seismic retrofit of the I-40 main line superstructure which included cross frame replacement, bearing replacement with isolation bearings and joint replacement with large modular joints. A PS&E package was prepared and construction support is being provided. Mr. Schamber also performed intermittent inspections on the bridge.
03/06-08/09	**Tennessee Department of Transportation, Interstate 40 Mississippi River Relief Bridges, Groups A & B Structures, Crittenden County, AR** - Served as Project Manager for the $52 million seismic retrofit of a 901-foot prestressed I-girder relief bridge referred to as Group A and the replacement of a 2,536 foot bridge with a new steel I-girder relief bridge, referred to as Group B. Both the retrofitted structure and the new structure were designed to higher seismic standards than normally required by AASHTO Standard Specifications for Highway Bridges. A PS&E package was prepared and construction support was provided. Mr. Schamber coordinated the work between two state agencies, the Tennessee Department of Transportation (TDOT) and the Arkansas Highway and Transportation Department (AHTD). Mr. Schamber also performed intermittent inspections on the bridge.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**J. Dallas Richard, P.E.**	Years of experience with this firm/employer	17
Title	Senior Structural Engineer	Years of experience with other firm(s)/employer(s)	29
Degree(s) / Years / Specialization		M.S. / 1976 / Civil Engineering B.S. / 1974 / General Studies/Social Sciences	
Active registration number / state / expiration date		#PE.0021899 / LA / 3-31-24	
Year registered	1985	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA-NHI-130092-Fundamentals of LRFR and Applications of LRFR for Bridge Superstructures, 2015 LADOTD Maintenance & Rehabilitation of Historic Bridges Training Course, 2016 LADOTD AASHTOWare Bridge Rating Fundamentals Training, 2017 ATSSA – Traffic Control Supervisor and Technician
Contract role(s) / brief description of responsibilities		Sr. Bridge Engineer (**MPR #7**)	

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).
04/16-12/19	**Contract 4400004920 (H.009859.5), Retainer Contract for Complex Bridge Rating (On-System Trusses and Other Complex Bridges), Statewide (DOTD) –** Responsible for the supervision and application of AASHTOWare BrR software for load rating of the complex, LA47 Gulf Outlet Canal Bridge (tied arch truss) consisting of continuous steel plate girders, slab spans, and pile caps; the LA 1 at Atchafalaya River bridge (cantilever truss bridge) consisting of continuous steel plate girders; the US90 Riverbound Bridge (truss bridge) consisting of continuous steel plate girders; and the Bayou Teche Bridge at Adeline (**swing span bridge**).
04/08-08/17	**S.P. No.: 700-99-0429, Retainer Contract for Bridge Preservation (On-System), Statewide (DOTD)** – Task Manager and Senior Project Engineer responsible for providing engineering and related services under a retainer contract that involved the repair and/or rehabilitation of bridge structures throughout the State of Louisiana. Responsibilities under this contract included: Preparation of final plans and cost estimate for the I-10 Mississippi River Bridge rehabilitation; Quality Assurance/Quality Control of the preliminary plans; preparation of final rehabilitation plans for the painting and structural rehabilitation of **two vertical lift bridges**, including a redesign of the bridge bearings for the Little Caillou Bayou Bridge (Route LA 24) and Bayou LaCarpe Bridge (Route LA 661) in Terrebonne Parish.; and preparation of final rehabilitation plans the painting and structural rehabilitation of a **vertical lift bridge** including redesign of the bridge bearings, lift tower column base and anchor bolts; steel overhead truss, lift tower, and lift girder repairs; an elevated platform for a new Operator House; and new fender system (Bayou La Loutre Bridge, St. Bernard Parish).
01/99-12/03	**Greater New Orleans Expressway Commission, Pontchartrain Causeway Bridge – Jefferson and St. Tammany Parishes, LA (Project Engineer) -** Performed the routine inspection of prestressed concrete spans and **steel bascule spans** of the 24-mile-long causeway. He performed structural rehabilitation designs for the connections of center lock mechanisms due to failures.
01/97-12/00	**LA Department of Transportation and Development, Intracoastal Waterway Bridge at Louisa (LA 310) Approach Spans – St. Mary Parish, LA -** Senior Project Engineer providing project structural management and final design for the approaches to a high-rise bascule bridge in a coastal environment, including superstructure, column bents, and pile foundations.
03/17-08/20	**H.011965.5 LA 47: IWGO Bridge Rehabilitation, Orleans Parish (DOTD)** – Project Manager and Senior Design Engineer for a design and construction services contract involving the structural rehabilitation, cleaning and painting of the LA47 IWGO Bridge. The bridge consists of 1,248 feet steel main spans with cantilevered arms and tied-arch truss; 3,304 feet of welded steel girder approaches, 1,590 feet of prestressed girder approach spans, and 480 feet of concrete slab spans. In responsible charge of the preparation of

	preliminary plans that included the repair and rehabilitation of all substructure and superstructure elements including location, quantities, lists of repairs, and cost estimates. Detailed plans for typical steel repair plans were provided which included a preliminary jacking scheme for tied-arch chord repairs. Mr. Richard also served as the Project Manager in responsible charge of coordination and management for Task Order No. H.011965.5-2, State Project No. 44-2184 which was a testing and evaluation program of 20 paint systems to identify at least one product that demonstrated the potential for a 50-year maintenance free service life.
07/10-02/18	**S.P. No.: H.004266 (700-24-0031), Route US 190 Rehabilitation over Mississippi River – East and West Baton Rouge Parishes, LA (DOTD)** – Project Manager for preliminary engineer, final design and construction services involving major structural rehabilitation, cleaning and painting of a critical railroad/highway bridge across the Mississippi River. The bridge consists of 8,884 feet of railroad approach spans, 2,552 feet of highway approach spans, and 3,326 feet of cantilever steel truss main spans. Rehabilitation included complete cleaning and painting, and general structural rehabilitation of various bridge members including: cross frame chord members and connection angles, top lateral bracing members, replacement of the main truss vertical and diagonal lacing bars, deteriorated interior stiffeners of the main truss verticals, deteriorated diagonals at portals, anchor bolt and column rehabilitation for approach bents, bearing pins and corroded bearings, rehabilitation of false chord expansion devices, replacement of cracked gusset plates, and patching of concrete spalls at bearings and retaining walls. Schemes for jacking and temporary support of members during rehabilitation and structural analysis for traffic reduction during phases of construction were included. Traffic control and phasing for maintenance of traffic was also provided.
09/15-09/16	**S.P. No.: H.001234, Port Allen Canal Bridge, West Baton Rouge Parish, LA (DOTD)** – Senior Project Engineer in responsible charge of the Stage 3 preliminary structural design of continuous curved steel girder spans (300'- 380'-300') for two bridges (northbound and southbound) over the Intracoastal Waterway to replace an existing bridge. The design was complicated by horizontal curvature and by vertical clearance restrictions which required haunched girders of shallow depth. MDX software was used for preliminary design.
06/06-04/07; 08/10-08/17	**S.P. No.: H.003495 & H.011111, I-49 & I-220 Interchange, Caddo Parish, LA (DOTD)** – Senior Project Engineer in responsible charge of the Stage 3 preliminary design for 6,768 feet of high-level curved steel girder interchange between I-220 and I-49, and bulb-tee prestressed girder interstate bridges for I-49 over Martin Luther King, Jr. Drive. Mr. Richard provided Quality Control for the final project design of 7,070 feet of precast segmental post-tensioned concrete box girder and steel trapezoidal curved box girder superstructure alternates, including load rating of the design.
01/07-04/11	**S.P. No.: 700-99-0406, Retainer Contract for Crescent City Connection Bridges and Facilities Trust Indenture Services - Orleans, Jefferson and St. Bernard Parishes (DOTD)** – Task Manager and Supervisory Engineer responsible for providing engineering and related services under a retainer contract that involved the repair and/or rehabilitation of bridge and facility structures owned and operated by the CCCD. Relevant rehabilitation responsibilities under this contract included: 1) replacement of armored and sliding plate bridge expansion joints with high strength polymer concrete and preformed silicone joint seals on the main span of CCC Bridge No. 2 and elevated portions of the expressway; 2) plans for the redesign and replacement of hinged bridge bearings for six steel thru-girder leveling ramp bridges and four steel truss pedestrian leveling ramp bridges; 3) modifications to existing roadway barriers and transitions (2,280 feet); 4) emergency response and repair plans and specifications for heat-straightening and splice plates for repair of the cracked bottom flange of the Riverbound Ponchartrain Causeway Span 30, including allowable jacking loads to the S. Claibourne Ave. Bridge immediately under the damaged span; and 5) repair of the bridge fender system damage from a boat collision for the CCC Bridge No. 2 over the Mississippi River.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.				
Name	**Donald Clayton, P.E.**		Years of experience with this firm/employer	17	
Title	Project Manager/Senior Roadway Engineer		Years of experience with other firm(s)/employer(s)	32	
Degree(s) / Years / Specialization			B.S. / 1973 / Civil Engineering		
Active registration number / state / expiration date			#PE.0019634 / LA / 3-31-2023		
Year registered	1981	Discipline	Civil Engineering **Other Pertinent Training / Certifications** ATSSA - Traffic Control Supervisor and Technician		
Contract role(s) / brief description of responsibilities			Roadway Design Lead / Traffic Control Plans (**MPR #8**)		

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc.
03/20-present	**S.P. No.: H.005121, LA1/LA415 Connector, West Baton Rouge Parish, LA (LADOTD) –** Roadway Design Manager/Sr. Roadway Engineer for the design of a new connector between LA 1 near LA 988 (Beaulieu Lane) and I-10 at the LA 415 interchange. The project, which is approximately 2.7 miles in length, includes a new four-lane roadway and bridge(s) over the Gulf lntracoastal Waterway, with modifications to the LA 1 Southbound turning movement and modifications of the I-10 ramps at LA 415. Current conceptual construction cost is $160 million. Responsibilities include horizontal and vertical alignments for roadways and ramps; intersection design; drainage design; typical sections; sequence of construction; maintenance of traffic; quantity computation.
02/16-12/19	**44-4920 (H.009859.5 Complex Load Rating and Inspection, Statewide, LA (DOTD) –** Task Leader responsible for the design of maintenance of traffic plans for bridge inspections completed for LA 47 over IWGO, US 90 Riverbound Expressway, Intracoastal Waterway Bridge at Ellenders (**vertical lift**), LA 654 over Bayou LaFourche (**vertical lift**), LA 657 over Bayou LaFourche (**vertical lift**), LA 319 Intracoastal Canal Bridge (**bascule**), LA 83 over Patout Bayou (**swing**), Local Road over Bayou Terrebonne (**swing**), and Bridge over Bayou Teche at Adeline (**swing**).
03/16-12/18	**Contract Nos. 4400005960 and H.013321 Complex Bridge Inspections (DOTD) –** Task Leader for design of the maintenance of traffic plans for the bridge inspections complete for US 90 over IHNC, Danziger Bridge (**vertical lift**), LA 1 over Company Canal (**vertical lift**), LA 23 over ICCW (**vertical lift**), and LA 39 Claiborne over IHNC (**vertical lift through truss**).
12/12-04/13	**S.P. No. 002562.5 – Bayou LaLoutre Bridge Rehabilitation, St. Bernard Parish, LA (DOTD) –** Task Leader responsible for design of the maintenance of traffic plans for the inspection of this **vertical lift bridge**.
08/09-11/09	**44-0641 (700-99-0429) / H.005330.5 (701-65-1215) Little Caillou and Bayou LaCarpe Bridges, Houma, LA (DOTD) –** Task Leader designed the maintenance of traffic plans for the **special rehabilitation inspections of two vertical lift bridges**.
01/12-9/20	**S.P. No.: H.001234 - Port Allen Canal Bridge, LA 1, West Baton Rouge Parish, LA (DOTD)** – Roadway Task Manager responsible for **preliminary and final design for 2.26 miles of LA 1** over the Intracoastal Waterway in Port Allen, LA. Project features 1.27 miles of "Super Street" improvements to LA 1, including the removal of eight median openings, four new signalized "J-Turns" and left-turn storage; 0.98 miles of new four lane roadway for LA 1 on new alignment including a separate exit ramp for I-10 EB traffic; coordination with the design of new 2700' twin bridges over the Intracoastal Waterway; and the reconstruction of existing frontage road and a railroad at-grade crossing for Ernest Wilson Road. **Maintenance of Traffic plans** were developed to maintain four lanes of traffic for LA 1 at all times with connections to the I-10 ramps. The project also included drainage design, geometric details, striping, joint layout, sequence of construction, cross sections and quantities.

11/16-present	**Walter O. Bigby Carriageway, Bossier City, LA** – Roadway Task Manager during design of the Walter O. Bigby Carriageway extension from north of Eatman Street to Benton Highway. Walter O. Bigby follows existing roadway for a portion of the alignment and then continues northward on new alignment between the Red River Levee and Union Pacific Railroad, crossing existing Union Pacific Railroad tracks with a bridge structure, and connecting to Benton Highway at a new signalized intersection. Work includes the design of two roundabouts at the intersections of Hamilton Road and Shed Road, and the reconstruction of three side roads to tie-in to the new roadway. Design work also includes the widening of Hamilton Road from south of US 80 to the new roundabout, and the addition of a left-turn lane and driveway reconfigurations along Benton Highway. Total project length includes approximately 5,300 feet of reconstructed city streets and 3,600 feet of new four-lane streets which includes a 1,470-foot bridge structure. Mr. Clayton's tasks include typical section development, geometric design, subsurface drainage design, pavement striping plans, detailed Maintenance of Traffic plans, joint layout design, quantities and cross sections. Work adhered to the LADOTD Roadway Design Procedures and Details Manual.
03/17-03/18	**H.011965.5 LA 47: IWGO Bridge Rehabilitation, Orleans Parish, LA (DOTD)** – Roadway Task Leader responsible for the design of preliminary maintenance of traffic plans and detours for the rehabilitation construction of this historic complex bridge.
12/09-10/13	**Old Hammond Highway, Phase 2, East Baton Rouge, LA** - Project involved the design for reconstructing a two-lane highway to a four-lane divided highway under the City's Green Light Program. Included the development of typical sections, new vertical alignments, a new subsurface drainage system to replace existing roadside ditches, maintenance of traffic plans and quantities. Served as Project Engineer and designed the vertical alignments, designed a portion of the sub-surface drainage system, designed the maintenance of traffic plans including traffic design management, and assisted in the quantity computations. Work adhered to the LADOTD Roadway Design Procedures and Details Manual.
12/12-11/14	**S.P. No.: 4400002184 – Retainer Contract for Bridge Preventative Maintenance, Statewide (DOTD)** – Senior Engineer responsible for providing engineering and related services under a retainer contract that involved the repair and/or preventative maintenance of bridge structures throughout the State of Louisiana. Task Order 1 involved bridges in East Baton Rouge, West Baton Rouge, East Feliciana and West Feliciana Parishes and included bridges on I-10, I-110, LA-1 and LA-67 crossing local roads and creeks. Responsible for preparing Maintenance of Traffic plans for 10 bridge sites as well as preparing the general plan sheets, quantity sheets and other miscellaneous sheets.
08/06-12/12	**S.P. No.: 700-99-0429, Retainer Contract for Bridge Preservation (On-System), Statewide (DOTD)** – Senior Engineer responsible for providing engineering and related services under a retainer contract that involved the repair and/or rehabilitation of bridge structures throughout the State of Louisiana. Prepared **Maintenance of Traffic plans** for work during the completion of construction work on the I-10 Bridge over the Mississippi. Responsible for the development of approach roadway alignment alternatives for the LA 1 Port Allen Bridge Rehabilitation/Replacement Study. Also involved with the development and QA/QC of roadway and bridge designs for LA 705 and LA 557.
09/10-09/11	**S.P. No.: 700-24-0031, US 190, Mississippi River Bridge Cleaning and Painting, (DOTD)** – Senior Engineer responsible for providing engineering and related services for this 12,200-foot long steel truss bridge over the Mississippi River in Baton Rouge, LA. Specific work included guardrail replacement at various locations and development of preliminary and final Maintenance of Traffic Plans for the project.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Janet Crouse, P.E.**	Years of experience with this firm/employer	9
Title	Roadway Engineer	Years of experience with other firm(s)/employer(s)	9
Degree(s) / Years / Specialization		B.S. / 2003 / Civil Engineering	
Active registration number / state / expiration date		#PE.0040798 / LA / 9-30-2022	
Year registered	2016	Discipline	Civil Engineering **Other Pertinent Training / Certifications** ATSSA – Traffic Control Design Specialist ATSSA – Traffic Control Technician
Contract role(s) / brief description of responsibilities		Roadway Engineer / MOT Plans (**MPR #8**)	

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).
03/20-present	**LA1/LA415 Connector, West Baton Rouge Parish, LA (LADOTD) –** Roadway Design Engineer for the preliminary design of approximately 2.7 miles of new four-lane roadway and bridge(s) over the Gulf Intracoastal Waterway, with modifications to the LA 1 Southbound turning movement and modifications of the I-10 ramps at LA 415. Project includes the design of an elevated ramp from Northbound LA 1 to the new connector and an elevated ramp from the new connector to LA 1 Southbound and the realignment/extension of the I-10 Frontage Road and S. Westport Drive.
11/14-present	**SPN# H.001234, Port Allen Canal Bridge, LA 1, West Baton Rouge Parish, LA (DOTD)** – Roadway Design Engineer for the preliminary and final design of 2.26 miles of LA 1 over the Intracoastal Waterway. Project features 1.27 miles of "Super Street" improvements to LA 1 including the removal of eight median openings, four new signalized "J-Turns" and left-turn storage; 0.98 miles of new four lane roadway for LA 1 on new alignment including a separate exit ramp for I-10 EB traffic; coordination with design of new 2,700' twin bridges over the Intracoastal Waterway; reconstruction of an existing frontage road; and a railroad at-grade crossing for Ernest Wilson Road. Developed MOT plans that were required to maintain four lanes of traffic for LA 1 at all times with connections to the I-10 ramps. Project also included her involvement with drainage design, geometric details, striping, joint layout, sequence of construction, cross sections and quantities.
08/15-01/21	**Walter O. Bigby Carriageway, Bossier City, LA** - Project Engineer for the design of North Parkway Extension roadway from North of Eatman Street to Benton Highway. Work includes the design of two roundabouts at the intersections of Hamilton Road and Shed road, and the reconstruction of three side roads to tie in to the new North Parkway Extension. Design also includes the widening of Hamilton Road from South of US 80 to the new roundabout and the addition of a left-turn lane and driveway reconfigurations along Benton Highway. Total project length includes approximately 5300 feet of reconstructed city streets and 3600 feet of new four lane streets, which includes a 1,470 foot bridge structure. Tasks include the geometric design of the new alignment and roundabouts, the development of plan and profile sheets, geometric detail sheets, joint layout sheets, cross sections, quantities and assistance with the storm drainage design.
10/12-09/14	**SPN# H.011111, I-49 North – Preliminary & Final Bridge Plans, Caddo Parish, LA** – Project Designer for engineering and related services for the bridge design and rating for the I-49/I-220 interchange bridges, specifically directional ramps EN, SE and WN, and the widening of existing I-220 bridges. Areas of responsibility included the design and plan sheet preparation for median barrier and barrier rail layout, bridge deck drainage, and quantity sheets, and design coordination with roadway design team and other team members.
08/12-10/13	**Old Hammond Highway Improvements, Segment 2, Baton Rouge, LA (East Baton Rouge Parish)** – Project Designer during the design of reconstruction work along Old Hammond Highway as part of the City's Green Light Plan. Work consisted of the design for a new four-lane divided highway, intersection layout, roadway profiles, sub-surface drainage, sequence of construction drawings, and

	utility relocation including new 8" gravity sewer, a lift station and a force main. Task involvement included plan revisions and the development of drainage plans.
01/13-11/14	**SPN# 44-2184, Louisiana Department of Transportation, Retainer Contract for Bridge Preventative Maintenance - Statewide -** Responsible for providing engineering and related services under a retainer contract that involved the repair and/or preventative maintenance of bridge structures throughout the State of Louisiana. Task Order 1 involved bridges in East Baton Rouge, West Baton Rouge, East Feliciana and West Feliciana Parishes and included bridges on I-10, I-110, LA-1 and LA-67 crossing local roads and creeks. Areas of responsibility included preparing traffic control plans for several bridge sites as well as assisting in the preparation of general plan sheets, quantity sheets and other miscellaneous sheets.
10/08-05/11	**US 441/SR 15 Widening from Clayton County Limits to North Carolina State Line, Rabun County, GA (GDOT)** - Project Designer for the conceptual and preliminary design associated with widening over 7 miles of roadway between the northern city limits of Clayton to the North Carolina State line. The project included both urban and rural typical sections for widening to a four lane divided facility. Retaining walls were required to limit right-of-way impacts due to the steep terrain. Context sensitive design solutions were utilized to reduce the property and socio-economic impacts in the municipalities of Mountain City and Dillard. Tasks included on this project were geometric design, roadway drainage design, hydraulic design of major culverts, design of bicycle and pedestrian facilities, preparation of stage construction and maintenance of traffic plans and preparation of erosion and sediment control plans.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Michael Schrepfer**	Years of experience with this firm/employer	15
Title	Inspection Team Leader / Practice Safety Leader	Years of experience with other firm(s)/employer(s)	15
Degree(s) / Years / Specialization		M.E. / 1998 / Coastal Engineering; B.S. / 1990 / Ocean Engineering	
Active registration number / state / expiration date		N/A	
Year registered	N/A	Discipline	**Other Pertinent Training / Certifications** FHWA / NHI #130055 - Safety Inspection of In-Service Bridges, 1994 FHWA / NHI #130053 – Bridge Inspection Refresher Training, 2019 FHWA / NHI #130078 – Fracture Critical Inspection Techniques for Steel Bridges, 2009 FHWA / NHI #130092 – Fundamentals of LRFR for Bridge Superstructures, 2012 FHWA / NHI #130110 – Tunnel Safety Inspection, 2017 (Refresher 2021) LA DOTD Movable Bridge Inspection Workshop, 2012 LA DOTD Maint. and Rehab. of Historic Bridges, 2016 ATSSA - Traffic Control Supervisor, 2020
Contract role(s) / brief description of responsibilities		Inspection Task Leader / Team Leader /Permitting (Coast Guard)	

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).
11/21-01/22	**S.P. No. 44-17264; H.011965.5, LA 47 over IWGO, Bridge Rehabilitation, New Orleans, LA (DOTD) –** Senior team leader performing the bridge cleaning/washing inspection for the rehabilitation design of this tied arch/deck truss bridge. He led the cleaning operations and subs with use of manlift, platform truck, snooper truck, and safety boat. He supervised traffic control, safety operations, and wrote the inspection and cleaning reports.
02/16-12/19	**44-4920 (H.009859.5), Complex Load Rating and Inspection, Statewide, LA (DOTD) –** Senior team leader for the load rating inspections of **15 complex truss and movable bridges** over major waterways. The bridges included the steel tied arch truss bridge LA 47 over IWGO, riveted plate girder and deck truss Riverbound Expressway (US 90B), and **5 movable bridges:** Intracoastal Waterway Bridge at Ellenders (vertical lift), LA 654 over Bayou LaFourche (vertical lift), LA 657 over Bayou LaFourche (vertical lift), LA 319 Intracoastal Canal Bridge (bascule), LA 83 over Patout Bayou (swing), Local Road over Bayou Terrebonne (swing), Bridge over Bayou Teche at Adeline (swing). He planned, coordinated with state and local agencies (DOTD, USCG, LSP) and managed traffic control, special aerial access, and rope access teams; developed the safety plans, and led the inspection teams. The inspections involved the use of special access equipment such as manlifts, snoopers, boats, confined space entry, as well as coordination for bridge openings with marine traffic during the inspections. He directed the document search and collection of as-built plans, bridge inspection reports, and other historical documents in hard copy and electronic format. He managed the project accounting and subcontractors. He performed **QA/QC** of the inspection reports.
03/16 - 12/21	**Contract Nos. 4400005960 and H.013321 Complex Bridge Inspections (DOTD) –** Senior team Leader for the in-depth inspections of complex bridges that included **trusses and movable bridges**. These bridges included: I-10 Mississippi River and I-10 Calcasieu River bridges (cantilever and deck truss), I-310 Luling (cable stayed/box girder) and US 90 over IHNC, Danziger Bridge (**vertical lift**), LA 1 over Company Canal (**vertical lift**), LA 23 over ICCW (**vertical lift**), LA 39 Claiborne over IHNC (**vertical lift through truss**). He led inspection teams during the inspections and operated various equipment including a bucket truck, manlifts, bucket boat and snooper. He wrote the inspection reports in DOTD AssetWise format, developed element level quantities and condition states, and SI&A data. He searched for bridge plans and inspection reports from the DOTD Plans and Microfilm Rooms, DOTD AssetWise system, and in person at DOTD Bridge Maintenance. He developed project safety plans and inspection schedules for multiple inspection teams. He coordinated and worked directly with 8th Coast Guard District to obtain permits and notice to mariners for multiple bridge inspection throughout

	southern Louisiana. Performed all traffic control coordination, reviewed and submitted traffic control plans, and worked directly with DOTD Districts to obtain permits and provide notice to the traveling public for bridge inspections under multiple task orders.
09/14-12/14; 01/15-03/15	**Movable Bridge Inspections, LaFourche Parish, LA –** Senior team leader for the special above and underwater inspections of two **pontoon bridges** to develop repair and maintenance plans and documents. He planned the logistics, scheduling, and inspection operations. He led the field inspections and performed the diving, inspection report writing and repair recommendations.
12/12-04/13	**S.P. No. 002562.5 – Bayou LaLoutre Bridge Rehabilitation, St. Bernard Parish, LA (DOTD)** – Senior Team Leader for the **special rehabilitation inspection** of this **vertical lift bridge**. He planned, coordinated with state and local agencies and subcontractors (including traffic control), and led the inspection team. The inspection involved the use of special access equipment such as manlifts and coordination for bridge openings with marine traffic during the inspection. He performed ultrasonic NDT of the primary steel members and thermal imaging of the concrete deck. He directed the search and collection of as-built plans, bridge inspection reports, and other historical documents in electronic format located at DOTD, Section 51 Bridge Maintenance office, and DOTD General Files. Performed coordination and worked directly with the 8th Coast Guard District to provide notice to mariners. Performed all traffic control coordination, reviewed and submitted traffic control plans, and worked directly with DOTD to provide notice to the traveling public for bridge inspections under multiple task orders. Inspected and corrected traffic control patterns and operations daily during the inspections.
08/09-11/09	**44-0641 (700-99-0429) / H.005330.5 (701-65-1215) Little Caillou and Bayou LaCarpe Bridges, Houma, LA (DOTD) –** Senior Team Leader for the **special rehabilitation inspections of two vertical lift bridges**. He planned, coordinated with state and local agencies and subcontractors (including traffic control), and led the inspection teams and in-house traffic control operations. The inspection involved the use of special access equipment such as manlifts and coordination for bridge openings with marine traffic during the inspection. He managed the project safety, accounting and subcontracts. He performed all traffic control coordination, reviewed and submitted traffic control plans, and worked directly with DOTD Districts to provide notice to the traveling public. He inspected and corrected traffic control patterns and operations daily during the bridge inspection operations. He directed document searches and collection of as-built plans, inspection reports, historical documents on DOTD databases, Section 51 office, and General Files.
05/12-05/16	**Contract No. 4400002184, Bridge Preventative Maintenance Program (DOTD) -** Senior Inspection Team Leader for the special rehabilitation inspections of 26 highway bridges to develop maintenance repair plans. He planned and coordinated the inspections which included traffic control and special access equipment. He wrote the inspection reports and recommended bridge repairs. He directed the search and collection of as-built plans, bridge inspection reports, and other historical documents located on the DOTD database, Section 51 Bridge Maintenance office, and DOTD General Files. Performed all traffic control coordination, reviewed and submitted traffic control plans, and worked directly with DOTD Districts to obtain permits and notice to traveling public for bridge inspections under multiple task orders. Inspected and corrected traffic control patterns and operations daily during the bridge inspection operations.
06/11-06/12	**S.P. No. 700-24-0031, US 190 Mississippi River Bridge Rehabilitation (DOTD) –** Senior Team Leader for the special rehabilitation inspection of this 12,200 feet long bridge with five-span cantilever steel truss. He planned, coordinated with state and local agencies and subcontractors (including traffic control), and led the multiple inspection teams. The inspection involved the use of special access equipment such as manlifts and technical climbing. He coordinated and worked directly with the 8th Coast Guard District to obtain notice to mariners for this bridge inspection and rehabilitation project. He performed all traffic control coordination, reviewed and submitted traffic control plans, and worked directly with DOTD Districts to provide notice to the traveling public for bridge inspections under multiple task orders. He inspected and corrected traffic control patterns and operations daily during the bridge inspection operations.
02/10-02/12 01/06-12/06	**S.P. No. 700-99-0354 and 700-99-0510 - Crescent City Connection Bridges and Facilities, Orleans Parish, LA (DOTD)** – Senior Team Leader for routine and special inspections of 120 bridges including cantilevered thru trusses over Mississippi River, steel deck trusses, steel plate girders, and box girders. He planned the inspections, retrieved bridge plans and historical inspection documents, coordinated with state and local agencies and subcontractors (technical rope and aerial access and traffic control), resourced the project, wrote the safety plans, and led the inspections for 3 inspection cycles. He wrote and edited the inspection reports, performed QA/QC of the inspections. The inspections involved the use of a UB-60 snooper, bucket trucks, manlifts and technical rope access.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**David DeLeeuw, P.E.**	Years of experience with this firm/employer	10
Title	Senior Project Manager	Years of experience with other firm(s)/employer(s)	30
Degree(s) / Years / Specialization		M.S. / 1981 / Civil Engineering B.S. / 1979 / Civil Engineering	
Active registration number / state / expiration date		#PE.0038327 / LA / 3-31-2022	
Year registered	2013	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		QA/QC Reviewer / Constructability Review	

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).
01/20-11/20	**Contract No. H.012485.1 Off-system Load Rating, Statewide, LA (LADOTD) –** Served as project **QA Manager** for the load rating of 426 off-system bridges to include COSLAB and COPCSS bridges. He ensured that deliverables conformed to DOTD standards, requirements and TRC's Project Quality Control Plan. Contracted services include: Plan and Document Retrieval and Review; Bridge Inspection; Structural Modeling and Analysis; and generation of Repair Strategies and Plan Documents for bridges when needed. The project is being completed on an accelerated schedule.
04/16-03/20	**Contract No. 4400004920 (H.009859.5), Complex Load Rating and Inspection, Statewide, LA (DOTD) –** Mr. DeLeeuw serves as a **project QC/QA Manager** for the load rating inspections of complex bridges to include trusses and **movable bridges** that included Intracoastal Waterway Bridge at Ellenders (vertical lift), LA 83 over Patout Bayou (swing), LA 654 over Bayou LaFourche (vertical lift), Local Road over Bayou Terrebonne (swing), LA 657 over Bayou LaFourche (vertical lift), Bridge over Bayou Teche at Adeline (swing), LA 319 Intracoastal Canal Bridge (bascule). He ensured the deliverables conform to DOTD standards, requirements and TRC's Project Quality Control Plan.
06/13-07/16	**S.P. #H.003886.5, I-49 North – Segment K (I-220 to MLK Drive), Caddo Parish, LA (DOTD)** - Mr. DeLeeuw served as the **Lead QA Officer** for all bridge design work on this project. He led a QA Review on all eight (8) sets of plans at the 60% and 95% submittal stages, while a certificate of compliance with the QC/QA Program was furnished at the 100% submittal stage. The project included three (3) new ramp structures (2 alternate designs for each – Steel Box Girder and Segmental Concrete Box Girder), new twin bridges carrying I-49 over Martin Luther King Drive, and the widening of twin bridges carrying I-220 over Russell Road.
06/11-05/16	**Tennessee Department of Transportation, Interstate 40 Mississippi River Bridge, Ramps and Project I-2 (Phase 8), Memphis, TN** - Served as Resident Engineer for the seismic retrofit of the ramps and Project I-2. Retrofit work included abutment, footing, column, bent cap and bearing retrofit. Lead core isolation bearings were installed at several bents and large modular joints were installed at a few locations in the deck. Construction Cost: $43.2 million.
07/11-08/15	**Tennessee Department of Transportation, Interstate 40 Mississippi River Relief Bridges, Group C and D (Phase 9), Crittenden County, AR** - Served as Assistant Resident Engineer for the seismic retrofit of the Group C and D structures located in Arkansas. Group C was the seismic retrofit of an existing P/S I-girder relief bridge consisting of 16 spans with an expansion joint at Pier W12 and PierW21. Group D was the seismic retrofit of an existing welded plate girder relief bridge consisting of 7 spans. Construction Cost: $46.5 million.
07/2011	**Tennessee Department of Transportation, I-40 Mississippi River Relief Bridges, Group C and D, Crittenden County, AR** - Served as **Constructability Reviewer** for the seismic retrofit of the Group C and D structures located in Arkansas. Group C involved the seismic retrofit of an existing P/S I-girder relief bridge consisting of 16 spans with an expansion joint at Pier W12 and PierW21. Group D involved the seismic retrofit of an existing welded plate girder relief bridge consisting of 7 spans.

01/97-12/98	**I-55 Widening - DeSoto County, MS (MDOT)** - Mr. DeLeeuw managed and performed the bridge design for widening I-55 from 4 lanes to 6, 8, and 10 lanes. He served as overall Project Manager and **QA Manager of Design**, as well as supervised all roadway design efforts by a sub-consultant. Work also included the preparation of construction details for the first noise walls ever constructed in MS.
06/85-01/90	**I-55, I-20, U.S. 49 Interchange Rehabilitation, Jackson, MS (MDOT) -** Managed the complete rehabilitation design for major urban interchanges (I-55, I-20 and U.S. 49) in downtown Jackson. He served as the lead **QA Manager of Design**. The project involved reconstruction, widening or new construction on more than 15 miles of mainline roadway, ramps, and collector/distributor roads and 27 bridges including 10 new structures. Mr. DeLeeuw supervised all bridge design efforts and the development of traffic control plans for the replacement, under traffic, of all existing pavement with new concrete pavement. He also served as lead design engineer for all continuous, curved steel-plate girders.
07/15–04/17	**Tennessee Department of Transportation, Repair of the Bridge on I-40 over the Mississippi River, Memphis, TN** - Project Manager/Resident Engineer for the complete construction management and inspection of this repair work. Construction began in the summer of 2015. The initial work, including emergency repairs to critical structural cracks was completed in February 2016 and rehab/repair of a modular expansion joint was completed in March 2016. Additional cracks were discovered in the eastern most 13 spans of the mainline. Repairs and other measures were developed jointly with TDOT and the Contractor returned to work in January 2017 and completed all repairs by April 2017, including the remaining repair of the modular expansion joint. Total construction cost was $6.7 million.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Mark Castay, P.E.**	Years of experience with this firm/employer	6
Title	Bridge Engineer	Years of experience with other firm(s)/employer(s)	7
Degree(s) / Years / Specialization		M.S. / 2008 / Civil Engineering B.S. / 2006 / Civil Engineering	
Active registration number / state / expiration date		#PE.0039430 / LA / 9-30-23	
Year registered	2015	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA / NHI - Safety Inspection of In-Service Bridges, 2016 FHWA / NHI - Bridge Inspection Refresher, 2020 FHWA / NHI – LRFD for Highway Bridge Substructures, 2017 FHWA / NHI – NEPA and Transportation Decision Making, 2009 LTRC / LADOTD-AASHTOWare Bridge Rating Fundamentals Training, 2017 ATSSA / LADOTD-Traffic Control Supervisor, 2020
Contract role(s) / brief description of responsibilities		Bridge Engineer / 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).
06/21-Present	**Contract No.4400020156 (H.011965.5), LA 47 IWGO Bridge Rehabilitation, New Orleans, LA (DOTD) -** Bridge Engineer responsible for an inspection of this 6,620' tied arch bridge included in the state historic bridge management plan to identify deficient elements. Responsibilities also included design and plan generation for the rehabilitation of various bridge components including CFRP strengthening of prestressed girders and columns, deck joints, spalls and fractures on superstructure and substructure components, ancillary steel and aluminum frames, bearing replacement, and structure jacking schemes.
11/19-10/20	**Contract No. 4400004920 (H.012485.1), Complex Off-system Bridge Rating and Evaluation, Statewide, LA (DOTD) –** Bridge Inspector and load rating engineer for the inspection and load rating of the 345 concrete slab span (COPCSS, COSLAB) bridges supported on concrete caps and timber piles.
07/17-12/17	**S.P. No.: H.004266 (700-24-0031), Route US190 Rehabilitation over Mississippi River, East and West Baton Rouge Parishes, LA (DOTD) -** Performed calculations and assisted in the development of schemes for general structural rehabilitation of items including bearings and connections angles
04/16-06/19	**Contract No. 4400004920 (H.009859.5) On-system Complex Load Rating, Statewide, LA (DOTD) –** Bridge Engineer responsible for inspection and load rating of complex truss and moveable bridges under this retainer contract. **Bayou Teche Bridge** (**swing span**): Performed the bridge inspection and documented deficiencies to be used in the load rating analysis. **LA 27 over ICWW (vertical lift/truss) Bridge:** Inspected the lift span and truss, rated pile cap bents and performed QC on gusset plates, truss models/chord splices, and PCC and steel girder analyses. **LA319 over ICWW (double leaf bascule):** Performed rating analysis on PCC girder spans and hammerhead bent caps using strut and tie in addition to QC of the remainder of bridge components. **LA 654 over Bayou Lafourche (vertical lift):** Performed the QC on bridge rating calculations and analysis models. **LA657 over Bayou Lafourche (vertical lift):** Performed rating analysis on the slab spans and main span girders, floor beam and stingers. **LA 83 Bridge over Patout Bayou (swing span)** and **St. Anne Bridge over Terrebonne Bayou (swing span):** Performed QC on the bridge rating calculations and analysis models. **LA 47 over IWGO** (tied arch truss): Performed load rating analysis for the pin and hangers, link plates and chord splices, as well as completed rating analyses for the pile supported reinforced concrete caps. He also calculated the truss panel point dead loads for inclusion in the AASHTOWare BrR model. **LA 1 over Atchafalaya** (cantilevered Warren through truss): Performed the bridge inspection and

	load ratings for pin and hangers and an analysis for the truss gusset plates in BrR. **US 90B Riverbound Expressway Bridge** (riveted plate girder and deck truss): Performed the bridge inspection and documented deficiencies to be used in the load rating analysis. He performed the load rating analysis of the girders, floor beams, stringers, gusset plates and truss members.
02/18-06/18	**Contract No. 4400010099 (H.009859.5), Complex Off-system Bridge Rating and Evaluation, Statewide, LA (DOTD) –** Bridge Inspector and load rating engineer for the inspection and load rating of a truss bridge over the Tensas River. He led the inspection of the superstructure elements, operated a platform snooper truck and developed the BrR load rating for the bridge.
03/16-09/16; 06/18	**Contract No. 4400005960 (H.009730.5), In-depth Bridge Inspection of Complex Structures, Statewide, LA (DOTD) –** Bridge Inspector for cantilevered truss bridges on I-10 over Lake Calcasieu and I-10 over Mississippi River and US 90 Danziger **(vertical lift)** during the performance of an **in-depth inspection of the bridge superstructure and substructure**, element level conditions/quantities, and composing the final report.
09/17-02/18	**Mississippi Department of Transportation, State Aid Bridge Inspection and Load Rating IDIQ Master Contract, 2017 -** Bridge Inspector and load rating engineer to this Indefinite Delivery / Indefinite Quantity (IDIQ) Master Contract to provide 160 concrete and timber **bridge inspections and load ratings** in accordance with the National Bridge Inspection Standards (NBIS) and AASHTO MBE on selected bridges located statewide.
05/09-08/10	**S.P. No.: 713-42-0143, Georgie Ridge Bridge, Richland Parish, LA (DOTD) –** Assisted in the design of a 7-span pre-stressed girder superstructure and pile supported substructure. He also compiled quantities for the bridge in addition to calculations for geometrics. Mr. Castay was tasked with executing a detailed lateral pile analysis which incorporated the soil/pile interaction to justify a pile size reduction. This analysis was able to verify that a pile size reduction on the bridge would reduce construction costs considerably. A comprehensive report was generated to substantiate results created in the model.
07/08-12/10	**S.P. No.: 455-09-0003, I-49 North Extension: LA 169 to LA 530, Caddo Parish, LA (DOTD) –** The bridges consisted of 12-102 ft. AASHTO Type IV girder spans supported by column bents and drilled shaft foundations spanning Twelve Mile Bayou. Mr. Castay's responsibilities included calculating vertical and horizontal alignments; design of the structural deck, pre-stressed girders, caps and column bents; and quantity calculations and cost estimates.
07/08-06/10	**S.P. No.: 455-09-0011, I-49 North Extension: LA 169 to LA 530, Caddo Parish, LA (DOTD) –** The bridge consisted of AASHTO Type III Girder spans over Self Road. The pre-stressed girders were supported by column bents on drilled shaft foundations. Mr. Castay's responsibilities included calculating vertical and horizontal alignments; design of the structural deck, pre-stressed girders, caps and column bents; and quantity calculations and cost estimates.
07/08-08/10	**S.P. No.: 455-09-0005, I-49 North Extension: LA 530 to LA 170, Caddo Parish, LA (DOTD) –** Mr. Castay performed the final design of the bridge's superstructures and substructures and developed a cost estimate for the assigned bridges. The 2 bridges consisted of AASHTO Type IV girder spans ranging in total length from 428' to 600'. The pre-stressed girder spans were supported by column bents and drilled shaft foundations.
07/08-09/10	**S.P. No.: 455-09-0006, I-49 North Extension: LA 170 to US 71, Caddo Parish, LA (DOTD) –** Mr. Castay performed the final design of the bridge's superstructures and substructures and developed a cost estimate for the assigned bridges. The 3 bridges consisted of AASHTO Type III girder spans ranging in total length from 225 ft. to 375 ft. The pre-stressed girder spans were supported by column bents and drilled shaft foundations.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Christopher Hay, PE**	Years of relevant experience with this employer	4
Title	Bridge Engineer/Inspector	Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization			
Active registration number / state / expiration date	#PE.0043025 / LA / 3-31-2023		
Year registered	2018	Discipline	Civil Engineering
			Other Pertinent Training / Certifications FHWA/NHI Course #130055 - Safety Inspection of In-Services Bridges FHWA/NHI Course #130078 - Critical Inspection Techniques for Steel Bridges ODOT Bridge Inspection – Level 2
Contract role(s) / brief description of responsibilities	Load Rating Engineer / Inspection Team Leader / Bridge Design		

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).
11/19-12/20	**Contract No. 4400004920 (H.012485.1), Complex Off-system Bridge Rating and Evaluation, Statewide, LA (DOTD) –** Load rating engineer and inspector during the inspection and load rating of 346 off-system bridges (COSLAB, COPCSS). Performed load rating analysis of the superstructures and substructures (timber and concrete piles) using AASHTOWare BrR and STAAD.
09/17-01/19	**VAR-D08 Fracture Critical Bridge Inspections No. 2017-2, Fort Ancient and Oregonia, OH** - Participated in the Routine Element Level inspection of truss bridges and post-tensioned bridges in ODOT District 8. Inspected the abutments, piers, floor beams accessible by ladder and all lower chords, as well as participated in the review of bridge inspection reports.
09/17-03/18	**Veterans Glass City Skyway Bridge, Toledo, OH -** Inspection Team Leader for a Routine Element Level inspection of this series of nine (9) bridges, including ramps, carrying I-280 over the Maumee River. All are segmentally constructed with the main span supported by a 262' cable stay tower. Involved with inspecting the precast, segmental section as well as writing and checking the inspection reports.
07/17	**5th Street Bridge In-Depth Periodic Inspection, Wood County, WV -** Inspection Team Leader during an In-Depth Periodic inspection of this 905' bridge that consists of a 350' simple span riveted Warren through truss and 13 steel wide flange beam spans. The bridge is supported by reinforced concrete abutments and piers, along with steel bents on concrete pedestals.
11/18-12/18	**Kanawha Falls Emergency Inspection, Fayette County, WV -** Inspection Team Leader for an emergency inspection of this 90-year-old, three-span, riveted through truss over the Kanawha River following the failure of a floor beam connection. Mr. Hay performed a cursory inspection of the truss lower chords and stringers, and a hands-on inspection of the lower chords and floor beam to lower chord connections. He also assisted with the development of an inspection report outlining additional areas of concern.
11/20-12/20	**Franklin County Engineer's Office, General Engineering Services Contract, 2020 Inspections, Franklin County, OH** - Task Manager/Team Leader for the routine inspection of 54 structures in 3 townships throughout the county. Managed three (3) inspection teams to complete the inspections in just 5 field days. Draft reports were completed in AssetWise and submitted to the County for review within 2 weeks of competition of the field work and final reports were approved within a week of receiving comments.
03/17-06/18	**West Virginia Division of Highways, Henrietta Bridge over Laurel Creek, Calhoun County, WV -** Served as the design lead for this superstructure replacement in Calhoun, WV. The existing bridge was widened from 24 feet to 28 feet and the abutments were converted to semi-integral. The piers were rehabilitated with new caps. Chris was responsible for checking calculations and plan development for the bridge. Tasks included checking rolled steel beam input calculations, MDX models, preliminary bearing designs and capacity and stability calculations for the existing substructures as well as checking final construction plans.

06/18-11/19	**West Virginia Division of Highways, I-70 Bridges Rehabilitation, Ohio County, WV and Bridgeport, OH -** Bridge Design Engineer during the replacement or rehabilitation of several bridges. The BEL-70-26.84 bridge in Ohio has 7 spans and an overall length of 620 feet and spans the Wheeling Creek, South Lincoln Ave., SR 7, the Wheeling and Lake Erie Railroad, and the Norfolk Southern Railroad. The entire superstructure, including concrete deck, concrete barrier parapets, steel beams, expansions joints and bearings and rear abutment backwall will be replaced. New steel beams will be of higher strength steel allowing the number of beam lines to be reduced from 13 to 10 lines with a substantial cost savings. The bridge will now be constructed without a center joint allowing a single median concrete barrier to be used for safety. The rear abutment will be rehabilitated with a new backwall and a new full width approach slab. New PTFE elastomeric bearings will be used to limit loading additions due to bearing type changes, and substructure units analyzed for the change of loadings from the beams and bearings. Substructure units will also be repaired, and bridge seats raised because of the shorter elastomeric bearings.
02/13-06/17	**Ohio Department of Transportation, District 6, Bridge Design, FRA-71-0.00, Franklin County, OH -** Project Engineer for this $55 million interstate rehabilitation bridge design project. The pavement of IR 71 had deteriorated to a deficient state where total replacement was needed to provide a safe route for the traveling public. The project will help reduce congestion and increase capacity on IR 71 South between the Pickaway/Franklin County Line to just south of Stringtown Road. These improvements will be attained by widening from two to three lanes in each direction in conjunction with a pavement rehabilitation project. This project includes complete pavement replacement of the mainline IR 71 pavement from SLM 0.00 to SLM 5.29 (just south of the SR 665 ramps). As part of the project, an additional lane will be added to the median side of the interstate to increase capacity; three pairs of mainline bridges will be rehabilitated and widened; and the US 62 ramp geometry will be improved. The project includes the replacement of signs, guardrail, drainage and lighting.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Paul Misch Jr., P.E.**	Years of experience with this firm/employer	17
Title	Senior Bridge Engineer	Years of experience with other firm(s)/employer(s)	6
Degree(s) / Years / Specialization		M.S. / 1999 / Civil Engineering B.S. / 1996 / Civil Engineering	
Active registration number / state / expiration date		#PE.0034416 / LA / 9-30-2023	
Year registered	2009	Discipline	Civil Engineering **Other Pertinent Training / Certifications** NHI Certified Bridge Safety Inspector, 2005 FHWA / NHI – Bridge Inspection Refresher Course (2015)
Contract role(s) / brief description of responsibilities			Bridge Design / 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).
07/12-07/12; 07/15-07/15; 07/16-07/16	**Fifth Street Bridge, Wood County, WV (WVDOH) -** Team Leader for the in-depth inspection of this 905' two-span Warren through truss over the Little Kanawha River and CSX Railroad. The inspection included fracture critical steel bents. He provided a written inspection report and CAD drawings of the deterioration.
10/11-10/11 10/12-10/12 10/14-10/14	**Inspection of 35th Street Bridge and Ramps A & B, Kanawha County, WV (WVDOH) –** Team Leader performed an in-depth inspection of 8 welded steel plate girder spans and substructure consists of one full height reinforced concrete cantilever abutment and 9 two-column reinforced concrete pier bents. He provided a written inspection report and CAD drawings of the deterioration.
01/13-01/13	**Kanawha Falls Bridge, Fayette County, WV (WVDOH) –** Mr. Misch participated in the in-depth inspection as part of a rehabilitation of this three-span (265 feet-400 feet-265 feet) through-truss and simple span two-girder plate girder bridge over the Kanawha River, CSX and Norfolk Southern Railroad and County Route 13/2. All elements of the bridge were either verified from shop drawings or documented when no existing information was available.
05/11-05/11 08/12-08/12	**I-470 Approach Bridges Inspection, Ohio County, WV (WVDOH) -** Inspector performing an in-depth inspection of this 29-span twin-bridge structure which consists of multiple continuous spans of welded steel plate girders. The bridge has concrete hammer-head piers, two-column concrete piers with fracture critical steel pier caps, and a full height abutment. The overall length is 3545 feet.
09/05-08/10	**Phill G. McDonald Memorial Bridge Inspection over Glade Creek, Raleigh County, WV (WVDOH) -** Team Leader performed in-depth and routine inspections for 5 cycles of this five-span bridge which consists of a three-span steel deck truss and two-span welded plate girders. He performed a load rating analysis of the gusset plates using the LFR method for the three-span steel deck truss bridge. This bridge is regarded as one of the highest truss bridges in the world.
10/03	**Veteran's Memorial Bridge Inspection, Brooke County, WV (WVDOH) –** Assigned as an Inspector to perform periodic inspection of this cable-stayed bridge spanning Ohio River. The bridge consists of a single 360' inverted Y-shaped concrete tower. Twenty-six (26) paired cables reach across the 690-foot West Virginia back span and the 820-foot main river span to two Ohio approach spans of 314 and 140 feet. He inspected the concrete deck, steel superstructure, approach span piers and portions of the concrete tower.
02/13-02/14	**West Virginia Department of Transportation - Division of Highways, WV Thomas Buford Pugh Memorial Bridge Replacement (WV Rt. 41 Over the New River), Fayette County, WV -** Responsible for the Superstructure Type, Size and Location Study for this three-span (217'-250'-190'), curved steel plate girder bridge. Tasks included framing plan development and preliminary design of steel girders with 125' radii and sharply skewed abutments.

06/11-08/14	**West Virginia Department of Transportation - Division of Highways, Bridge Street Bridge Replacement, Taylor County, WV-** Responsible for preliminary studies and the final design of this two-span (173'-130') steel plate girder bridge carrying Bridge Street over the Three Fork Creek and CSX Railroad in the City of Grafton, WV. Tasks included designing steel plate girders, deck slab, rigid frame concrete pier with drilled caissons, extensive MSE wall layouts, conceptual bridge demolition and erection schemes over several CSX rail lines. Also checked the design for the integral abutments founded on steel H-piles.
03/18-02/19	**West Virginia Department of Transportation - Division of Highways, I-70 Bridges, Rehabilitation of Greenwood Bridge WB & EB (I-70 WB & EB Over Wheeling Creek), Ohio County, WV -** Member of the design team that developed rehabilitation plans for these curved and skewed steel girder bridges having span lengths of 89'-137'-83'. Responsible for detailing modifications to the bridges for conversion to semi-integral abutments. Detailed demolition limits for the existing abutment backwalls and portions of the wingwalls. Developed plan details for new shear blocks and concrete end diaphragms to be built in phases for maintenance of traffic purposes. Also detailed modifications to existing steel end crossframes for embedment in the new concrete end diaphragms.
03/18-02/19	**West Virginia Department of Transportation - Division of Highways, I-70 Bridges, Rehabilitation of Elby's Bridge WB & EB (I-70 WB & EB Over Ramp B, Ramp C and Wheeling Creek) – Ohio County, WV -** Member of the design team that developed rehabilitation plans for the seven span, steel rolled beam bridges with span lengths ranging from 39' to 92'. Responsible for detailing modifications to the bridges for conversion to semi-integral abutments. Detailed demolition limits for the existing abutment backwalls, pedestals and portions of the wingwalls. Developed plan details for new shear blocks, pedestals, concrete end diaphragms and end zone regions of the deck slabs. Also detailed modifications to existing steel end crossframes for embedment in the new concrete end diaphragms.
06/13-04/15	**West Virginia Department of Transportation - Division of Highways, Phill G. McDonald Memorial Bridge Rehabilitation, I-64 Over Glade Creek, Raleigh County, WV** – Bridge Design Engineer responsible for developing the rehabilitation plans for this five-span (125'-560'-784'-560'-150') bridge consisting of a three-span continuous steel deck truss and two welded plate girder approach spans. The overall bridge length is 2,179' with a roadway width of 72'. Tasks included bearing replacements, strip seal deck joint replacements, neoprene trough replacement at finger joints, addition of gusset plate stiffening angles, miscellaneous bolt replacements, bird screen repairs, addition of chord member drain holes, spot painting, concrete patching/crack sealing on the deck and piers, and pier door replacements.
03/14-06/15	**West Virginia Department of Transportation - Division of Highways, Kanawha Falls Bridge Rehabilitation, County Route 13 over Kanawha River, Fayette County, WV** – Bridge Design Engineer responsible for developing rehabilitation plans for this historic (1928) four-span (265'-400'-265'-73') bridge which consists of three through trusses, a rolled beam approach span and a roadway width of 21.5'. Tasks included compiling quantities, designing a phone conduit system and an 8" diameter waterline connection to the floor system, checking of the span 4 deck slab design and coordinating the development of rehabilitation plans between four (4) design offices.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Mark Christensen, PE**	Years of experience with this firm/employer	17
Title	Bridge Project Manager/Engineer	Years of experience with other firm(s)/employer(s)	17
Degree(s) / Years / Specialization		M.B.A. / 1987 / Engineering and Science Management B.S. / 1985 / Civil Engineering	
Active registration number / state / expiration date		#45569 / CA / 12-31-2022	
Year registered	1990	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA-NHI-130055 - Safety Inspection of In-Service Bridges Certificate 10-Hour OSHA Construction Safety Certificate
Contract role(s) / brief description of responsibilities			Sr. Bridge Engineer (movable)

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).
05/16-03/21	**San Francisco Public Works, Third Street Bridge Rehabilitation, San Francisco, CA -** Project Manager for design, environmental documentation and construction support services for this project. The historic Third Street Bridge over Mission Channel, commonly known as the Lefty O'Doul Bridge, is a **single leaf, heel trunnion type bascule span bridge**. Mr. Christensen led a team of structural, bridge and environmental engineers to inspect and assess the condition of the bridge and then prepare rehabilitation plans which allowed the City to bid the project. Construction is complete. Presently assisting the Client with closeout duties.
02/04-06/07	**San Francisco Public Works Fourth Street Bascule Bridge Retrofit and Rehabilitation, San Francisco, CA -** Served as Project Engineer responsible for providing construction support services and construction inspection assistance on this $23 million historical **bascule bridge** rehabilitation project. The structure is a one-of-a kind in California with slender, steel-laced towers supporting a massive overhead counterweight which was retrofitted to a subterranean pit for seismic safety.
04/18-05/18	**County of Alameda, Moveable Bridge Inspection, Alameda, CA -** Served as TRC's project manager for an in-depth inspection of the Park Street, High Street and Miller Sweeney **moveable bascule span bridges** over the Alameda Tidal Basin. Areas of inspection included the floor system, truss members, gussets plate, and upper lateral system of the Park and High Street Bridges. Inspections were done from a bucket boat that had a basket with 62' reach capable of reaching all locations of the floor system and the upper truss gussets from the water, as well as a boom truck to inspect the upper lateral system and sway braces. Areas of inspection on Miller Sweeney included the steel box girder spans, orthotropic steel deck, pre-cast concrete girders spans and concrete piers. A report was prepared and submitted to the Prime consultant.
11/18-12/19	**West Virginia Division of Highways, I-70 Bridge Rehabilitation, Ohio County, WV** - Project Manager for the Rancho Cordova office where he managed, designed and oversaw the work of design engineers for the rehabilitation of two bridges on this fast-paced project. The total project included 27 bridges designed by three firms in offices across the U.S. Work began in November of 2018, with 2700 final plan sheets, specifications and construction cost estimates being completed in June 2019. Mr. Christensen provided QA/QC reviews of all submittal and RFI responses prepared for construction of this project.
11/18-06/19	**Monterey Peninsula Regional Park District, Five Bridges Inspection and Repair/Rehabilitation- Monterey County, CA** - Served as Design Engineer to provide safety inspections and repair / rehabilitation recommendations on five bridges, four precast prestressed concrete double-tee pedestrian bridges and one prefabricated steel truss vehicular / pedestrian bridge.
04/16-12/20	**Fresno County, Fresno Canal Bridge Replacement at McKinley Avenue- Fresno, CA -** Served as Design Engineer for the replacement of this two-span, structurally deficient, timber stringer bridge. The new bridge is a clear span precast/prestressed voided

	slab bridge with composite concrete topping slab and is 10' longer than the existing bridge to improve channel hydraulics and alleviate scour.
07/15-12/19	**Monterey County, Gonzales River Road Bridge Replacement, Monterey County, CA** - Served as Project Engineer for preliminary and final PS&E design services associated with a replacement of the superstructure for an existing 23-foot wide / 29-span bridge with a two-lane, 1700-foot-long/21-span bridge having a clear width of 40 feet. The profile of the roadway will be raised so that the new superstructure has two feet of freeboard.
06/08-04/10	**Glenn County, Campbell Slough Bridge Replacement, Glenn County, CA** - Design Engineer for the replacement of an existing nine-span bridge with a four-span cast-in-place reinforced concrete slab bridge over Campbell Slough. Project included a temporary roadway detour of County Road Z traffic. The design included driven pile options (precast/prestressed concrete or cast-in-steel-shell concrete), metal tube bridge railing (type 215), and a reinforced concrete drop cap to meet latest seismic code requirements at the piers.
03/15-02/16	**Fresno County, Bridge Preventive Maintenance, Scour Mitigation at Various Locations, Fresno, CA -** Design Engineer for this Bridge Preventive Maintenance project which included the design of scour countermeasures and various other repairs for seven (7) County bridges. TRC developed a preliminary report to summarize the preventive maintenance needs at each bridge. The County concurred with the report and TRC performed work in the final design phase of the project.
04/08-06/11	**Tennessee Department of Transportation, Interstate 40 Mississippi River Bridge Projects C & D (Phase 9), Shelby County, TN -** Served as Project Engineer for the seismic retrofit design of Projects C & D. The retrofit work included abutment, footing, column, bent cap and bearing retrofits. Large modular joints were installed at a few locations in the deck. A PS&E package was prepared. Construction Cost: $60,000,000.
08/07-12/10	**Tennessee Department of Transportation, Interstate 40 Mississippi River Bridge, Ramps and Group I2 (Phase 8), Shelby County, TN -** Served as Project Engineer for seismic retrofit design of the ramps and Group I-2. The design included abutment, footing, column, bent cap and bearing retrofits. Large modular joints were installed at a few locations in the deck. A PS&E package was prepared. Construction Cost: $43,500,000.
06/05-09/07	**Tennessee Department of Transportation, Interstate 40 Mississippi River Bridge, Project 6 (Phase 7), Shelby County, TN -** Served as Project Engineer for a seismic retrofit design from the east end of the tie-arch structure (Pier C) to Pier E12. Design consisted of replacing existing bearings with lead-core isolator bearings; large modular expansion joints in the deck, cross frames and bottom lateral bracing; and a longitudinal deck joint at the junction of Pier E3 and Pier NO1. A PS&E package was prepared.
03/04-12/06	**Tennessee Department of Transportation, I-40 Mississippi River Relief Bridges, Group A and B (Phase 6) - Crittenden County, AR -** Served as Project Engineer for the retrofit design of Group A and B, a $50 million project. He coordinated the seismic retrofit on Group A and substructure design work on Group B. A PS&E package was prepared.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Cameron Pinkerton, P.E.**	Years of experience with this firm/employer	17
Title	Senior Bridge Engineer	Years of experience with other firm(s)/employer(s)	1
Degree(s) / Years / Specialization		B.S. / 2004 / Civil Engineering	
Active registration number / state / expiration date		#73288 / CA / 12-31-22	
Year registered	2008	Discipline	Civil Engineering **Other Pertinent Training / Certifications** 10-Hour OSHA Construction Safety Certificate LRFD Course – Load and Resistance Factor Design (LRFD) Methodology for California Bridges, 2006
Contract role(s) / brief description of responsibilities		Bridge Design	

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).
05/16-present	**San Francisco Public Works, Third Street Bridge Rehabilitation, San Francisco, CA -** Project Engineer for design, environmental documentation and construction support services for this project. The historic Third Street Bridge over Mission Channel, commonly known as the Lefty O'Doul Bridge, is a single leaf, heel trunnion type bascule span bridge. Mr. Pinkerton provided bridge inspection services to rehabilitate the condition of the bridge and then prepared rehabilitation plans, allowing the City to bid the project. Construction is complete, just assisting the Client with closeout duties.
02/04-06/07	**San Francisco Public Works Fourth Street Bascule Bridge Retrofit and Rehabilitation, San Francisco, CA -** Served as Design Engineer responsible for providing construction support services and construction inspection assistance on this $23 million historical bascule bridge. The structure is a one-of-a-kind in California with slender, steel-laced towers supporting a massive overhead counterweight which was retrofitted to a subterranean pit for seismic safety.
04/18-05/18	**County of Alameda, Moveable Bridge Inspection, Alameda, CA -** Served as inspector for the in-depth inspection of Park Street, High Street and Miller Sweeney moveable bascule span bridges over the Alameda Tidal Basin. Areas of inspection included the floor system, truss members, gussets plate, and upper lateral system of Park and High Street Bridge. Inspections were done from a bucket boat that had a basket with 62' reach capable of reaching all locations of the floor system and the upper truss gussets from the water as well as a boom truck to inspect the upper lateral system and sway braces. Areas of inspection on Miller Sweeney included the steel box girder spans, orthotropic steel deck, pre-cast concrete girders spans and concrete piers.
08/10-10/12	**Louisiana Department of Transportation and Development, US-190 Mississippi River Bridge, Cleaning, Painting and Repair Phase I, Baton Rouge, LA -** Bridge Inspector and Design Engineer for the Phase I rehabilitation on portions of the steel through truss bridge: splice plate repairs on the upper and lower chords, selected portal frames and upper laterals. Developed conceptual repair details and prepared plan drawings.
11/18-12/19	**West Virginia Division of Highways, I-70 Bridge Rehabilitation, Ohio County, WV** - Project Engineer for the Rancho Cordova office where he designed the rehabilitation of two bridges on this fast-paced project. The total project included 27 bridges designed by three firms in offices across the U.S. Work began in November of 2018 and 2700 final plan sheets, specifications and construction cost estimates were completed in June of 2019. Mr. Pinkerton provided RFI responses prepared for construction of this project.
11/18-06/19	**Monterey Peninsula Regional Park District, Five Bridges Inspection and Repair/Rehabilitation, Monterey County, CA** - Served as Inspection and Design Engineer to provide safety inspections and repair / rehabilitation recommendations on five bridges, four precast prestressed concrete double-tee pedestrian bridges and one prefabricated steel truss vehicular / pedestrian bridge. Phase 2 of the project to develop bid documents will be starting soon.

04/08-06/11	**Tennessee Department of Transportation, Interstate 40 Mississippi River Bridge Projects C & D (Phase 9), Shelby County, TN -** Served as Project Engineer for the seismic retrofit design of Projects C & D. The retrofit work included abutment, footing, column, bent cap and bearing retrofit. Large modular joints were installed at a few locations in the deck. A PS&E package was prepared. Construction Cost: $60,000,000.
08/07-12/10	**Tennessee Department of Transportation, Interstate 40 Mississippi River Bridge, Ramps and Group I2 (Phase 8), Shelby County, TN -** Mr. Pinkerton served as Design Engineer for the seismic retrofit of the ramps and Group I-2. The retrofit work included abutment, footing, column, bent cap and bearing retrofit. Also, large modular joints were installed at a few locations in the deck.
06/05-09/07	**Tennessee Department of Transportation, Interstate 40 Mississippi River Bridge (Phase 7), Project 6, Shelby County, TN -** Served as Design Engineer for the seismic retrofit of the I-40 main line superstructure which includes cross frame replacement, bearing replacement with isolation bearings and joint replacement with large modular joints. A PS&E package was prepared, and construction support was provided. Construction Cost: $16,000,000.
02/07-12/08	**Tennessee Department of Transportation, Interstate 40 Mississippi River Relief Bridges (Phase 6), Group A and B, Crittenden County, AR -** Served as Design Engineer for the retrofit and design of Group A and B. He was responsible for preparing seismic analysis using the SEISAB computer program. The computer model was of a 17 span, 3 frame steel girder bridge. Mr. Pinkerton worked closely with the bridge designer to find solutions to limit the displacements of the bridge and develop an efficient design. He assisted in the design of components of the bridge, including in the design of the retrofitted spans, footings, columns, and abutments. This is a $50 Million project for Group A and B combined.
06/06-01/07	**Tennessee Department of Transportation, Interstate 40 Mississippi River Bridge (Phase 6), Group A and B, Crittenden County, AR -** On-site Inspector for the retrofit and replacement of the Group A and B bridges. Job duties included: inspection, writing RFI's, attending meetings with the Contractor and Client and preparing monthly estimates for the Contractors payment.
09/06-9/08	**Tennessee Department of Transportation, Interstate 40 Mississippi River Bridge (Phase 5), Project 7, Memphis, TN -** Served as Design Engineer providing construction support on this $23 Million Retrofit of the Group G Substructure including Piers E1 to E5 across Mud Island and Wolf River, Piers E6 to E11 across the Pyramid parking lot and Ramp Piers NO 1 to NO3 and IL12 and IL13. He was responsible for addressing RFI's and submittals, preparing cost estimates, preparing details, and reviewing and preparing design calculations.
09/12-3/13	**SANBAG, Laurel Street Grade Separation Project, City of Colton, CA -** Served as Design Engineer and checked the design of two secant pile walls with a maximum design height of 27' which were situated between a service bridge and an underpass structure. Design considerations included surcharge loads from adjacent railroads, a 42" corrugated steel pipe which passed through one of the walls and an associated reinforced concrete box for drainage at the base of the wall which required careful consideration to ensure that its construction would not jeopardize the structural integrity of the newly constructed secant pile wall.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Joshua Sadlock, P.E.**	Years of experience with this firm/employer	1
Title	Structural Engineer / Bridge Inspector	Years of experience with other firm(s)/employer(s)	9
Degree(s) / Years / Specialization		B.S. / 2012 / Civil & Environmental Engineering	
Active registration number / state / expiration date		#PE.0046405 / LA / 9-30-2022	
Year registered	2022	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA/NHI 130056 - Safety Inspection of In-Service Bridges for Professional Engineers, 2019 FHWA/NHI 130078 - Fracture Critical Inspection Techniques for Steel Bridges, 2020 PennDOT – Bridge Safety Inspection Refresher, 2021 Society of Professional Rope Access Technicians (SPRAT) - Level I Certified
Contract role(s) / brief description of responsibilities		Bridge Inspector / Bridge Engineer / Rating 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).
12/21	**Contract No. 44-13321; H.09730.5 Retainer Contract for In-depth Bridge Inspections (On-System), Statewide (DOTD)** – Bridge inspector responsible for the routine and element level inspection of the I-10 over Calcasieu River **truss bridge**. He inspected the deck, steel superstructure (girders, floor beams, stringers, bearings), steel substructure (bent caps, columns, diagonal bracing, gusset plates) using aerial access equipment.
06/21-08/21	**Pennsylvania Department of Transportation (PennDOT District 6-0), I-95-GPB, Philadelphia, PA –** Bridge Inspector for I-95 Northbound from the Girard Point Bridge in Philadelphia. He focused on identifying defects in the reinforced concrete piers and beam ends for future bridge rehabilitation contracts. He prepared a detailed list of defects with associated photos and updated drawings and details to inform the scope of rehabilitation required.
11/20-03/21	**Luzerne County, Water Street Bridge Inspection, Wilkes-Barre, PA** – Bridge Inspector for the 2020 routine and 2021 interim inspections of the Water Street steel **truss bridge** over the Susquehanna River. He assisted prepared Critical Deficiency Letters after each inspection and the final inspection reports.
07/20-08/20	**Burlington-Bristol Bridge Commission, Tacony-Palmyra Bridge Inspection** – Bridge Inspector for the 2020 bi-annual inspection of the Tacony-Palmyra Bridge over the Delaware River for the Burlington-Bristol Bridge Commission. He inspected the **bascule span and mechanical rooms**, deck and roadway approaches, masonry piers and **deck truss members** of the New Jersey approach. He performed a detailed gusset plate inspection to document section loss and prepared sketches for analysis. He assisted with preparation and submission of inspection report.
12/13-07/14	**Frederick County, MD – Historic Truss Bridge Load Ratings** – Performed LFD load rating inspections for **historic truss bridges** in Frederick County, MD. He verified bridge dimensions and current conditions based on the available plans and inspection reports. He used Bentley LARS to rate the bridges and performed hand calculations to rate gusset plates on 20 of the bridges.
10/13-01/14	**US-15 over Potomac River Bridge Inspection, Inspection Team Member –** Bridge Inspector for the U.S. 15 over the Potomac River (**truss bridge**) at Point of Rocks, MD. He inspected the deck, joints, and truss members to document the current condition of the bridge.
07/13-01/14	**Harford County Bridge Inspections, Harford County, MD –** Performed routine bridge inspections for Harford County, MD. Bridges inspected included pipe and box culverts as well as single span steel and concrete bridges. Assisted in preparation of inspection reports. Performed load ratings for over 20 pipes and created an Excel spreadsheet to perform the calculations.
09/13-12/16	**PennDOT District 8-0, S.R. 0147 over Gurdy Run, Dauphin County, PA -** Design Engineer for this single-span pre-stressed concrete box beam bridge supported on concrete abutments with spread footing. Utilized PennDOT's BRADD software for bridge design. He

	performed design calculations related to the beam and abutment loads. He also designed the abutment and footing using ABLRFD. The bridge was constructed in stages. During preliminary design, he laid out the traffic control plan and assisted with right-of-way plans.
09/13-12/16	**PennDOT District 8-0, S.R. 1010-004 over Bargers Run, Perry County, PA -** Design Engineer for this single-span pre-stressed concrete box beam bridge supported on integral abutments. He utilized PennDOT's BRADD software for bridge design and performed design calculations related to the beam loadings. Mr. Sadlock was primarily responsible for design of the concrete deck and abutments. During preliminary design, he laid out the traffic control plan and detour route.
01/14-12/18	**Pennsylvania Turnpike Commission, Mainline Bridge Replacement over Norfolk Southern Railroad MP 228.54 – Cumberland County, PA -** Design Engineer for a three-span, steel girder bridge replacement and roadway widening. During final design of the structure, he was responsible for design of the deck steel for a complex, staged plan. Mr. Sadlock designed stub abutments and the micropile layouts, as well as worked with Norfolk Southern standards to develop the crash wall for a future track.
08/21 - present	**PennDOT District 4-0, Lackawanna Bridge Group 79, Lackawanna County, PA –** Project Engineer for the preliminary design of three bridge projects involving a superstructure replacement on S.R. 2013, a box culvert replacement on S.R. 0690, and a structure rehabilitation on S.R. 3020. The S.R. 3020 rehabilitation is for a six-span steel bridge with multiple alternates being presented, including full replacement, partial superstructure replacement, and substructure rehabilitation. Mr. Sadlock has analyzed the capacity of existing steel girders and piers, and continues to design rehabilitation measures and retrofit details to improve the load carrying capacity of the structure.

16. Project Staff:

Firm employed by	TRC Engineers, Inc.		
Name	**Mark A. Jusselin, P.E.**	Years of experience with this firm/employer	3
Title	Project Manager/Senior Engineer	Years of experience with other firm(s)/employer(s)	31
Degree(s) / Years / Specialization		M.S. / 1986 / Civil Engineering B.S. / 1985 / Civil Engineering A.S., Surveying, Louisiana Tech University, 1985	
Active registration number / state / expiration date		#PE.0023840 / LA / 9-30-2022	
Year registered	1990	Discipline	Civil
Contract role(s) / brief description of responsibilities		Roadway 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).
10/17 – 10/20	**Walter O. Bigby Carriageway, Bossier City, LA (Bossier Parish)** – Performed independent QA services at several final plan design stages for the project with respect to the roadway plan/profile sheets. The reviews involved comparing the roadway plan/profile sheets with proposed storm drain structures and comparing with the summary of drainage structure sheets to ensure consistency. His QA review also included a bridge structure grade separation for the Union Pacific Railroad.
08/18 – 10/20	**S.P. No.: H.001234, LA 1 Port Allen Canal Bridge Replacement, West Baton Rouge Parish, LA (DOTD) –** Performed independent QA services associated with intersection details and graphical grade sheets, as well as an overall review of the proposed construction stage sequences.
02/00 - 09/07	**LA 3132 Inner Extension, Bert Kouns to Flournoy-Lucas Road - Shreveport, LA (DOTD)** - Project Manager/Principal-in-Charge of the topographic survey, final ROW mapping, preliminary/final bridge plans and preliminary/final roadway plans for the new alignment portion from the Inner Loop terminus at Bert Kouns east along new 4-lane divided interstate roadway section controlled access alignment to an intersection at Flournoy-Lucas Road. Responsible for horizontal/vertical alignment and hydraulics of a roadway cross drain structure at an existing creek crossing. Also responsible for QA/QC of the final roadway plans. The project included a new bridge structure overpass at Bert Kouns, an at grade intersection at Flournoy- Lucas, and the new controlled access Inner Loop extension roadway.
06/01 - 08/07	**I-49 from LA1 to LA 173 - Shreveport, LA (DOTD) -** Project Manager/Principal-in-Charge for the preliminary/final plans involving approximately 8 miles of new interstate roadway section in north Shreveport, including a new bridge across Twelve Mile Bayou. The terminus intersections included a half-diamond interchange at the north side LA1 and a half-diamond interchange at the south side of LA 173.
09/97 - 02/04	**Jefferson Paige Road Improvements, Monkhouse Road to I-220 - Shreveport, LA (DOTD)** - Project Manager/Project Engineer for the widening of Jefferson Paige Road to a 5-lane urban section from Monkhouse Road west to I-220. The project included topographic surveys, final right-of-way mapping, preliminary/final roadway design, including interchange design at Monkhouse Drive for the improvements. Responsible for horizontal/vertical alignment and off-site drainage of project stormwater to an existing creek outfall. ADA layout design was required for pedestrian crosswalks at the east intersection of Jefferson-Paige Road and Monkhouse Drive as well as at numerous cross streets along the new alignment.
07/99 - 02/04	**LA 1 Improvements - Oil City, Caddo Parish, LA (DOTD)** - Principal-in-Charge/Project Manager for approximately nine (9) miles of improvements to LA 1, including a rural section south of Oil City and a rural section north of Oil City. The section through Oil City included a 5-lane urban roadway section. Responsible for horizontal/vertical roadway alignment, including cross street intersections along the urban section through Oil City, and subsurface drainage design that included off-site drainage design for project stormwater.

	The 5-lane urban section through Oil City included subsurface drainage along the east and west sides as well as ADA-compliant design at all cross streets within the urban section through Oil City.
04/97 - 10/04	**US 167 Widening - Bernice, Union Parish, LA (DOTD)** - Principal-in-Charge/Project Manager for the widening of existing US 167 to a 4-lane rural section as well as a 5-lane urban section which included a parallel couplet section through the town of Bernice which included cross-street intersections for the TIMED program. Responsible for horizontal/vertical alignment and subsurface drainage, including off-site drainage design for project stormwater. The urban section included ADA-complaint design at all couplet cross streets through the town of Bernice.
04/97 - 11/02	**US 167 Widening - Dubach, Lincoln Parish, LA (DOTD)** - Principal-in-Charge/Project Manager for widening of existing US 167 to a 4-lane rural section as well as a 5-lane urban section through the Town of Dubach which included cross street intersections for the urban section through the town of Dubach for the TIMED program. Responsible for horizontal/vertical alignment and subsurface drainage including off-site drainage design for project stormwater. The urban section included ADA-complaint design at all cross streets through the town.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**John Mekari, P.E.**	Years of experience with this firm/employer	8
Title	Senior Electrical Engineer	Years of experience with other firm(s)/employer(s)	25
Degree(s) / Years / Specialization		B.S. / 1987 / Electrical Engineering	
Active registration number / state / expiration date		#25415 / LA / 9-30-23	
Year registered	1993	Discipline	Electrical Engineering
Contract role(s) / brief description of responsibilities		Task Manager for Lighting	

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).
07/21-02/22	**SP # H.011965, Contract No. 4400020156, LA 47: IWGO Bridge Rehabilitation (HBI), Orleans Parish, LA (DOTD)** – Electrical Task Manager for the development of final electrical plans, specifications and special provisions, Engineer's Opinion of Probable Construction Cost (OPC), and engineering calculations for the replacement of navigation lighting system and the aerial beacon lighting on the existing bridge. Included all boxes (pull boxes, junction boxes, etc.), conduit, wiring, supports, expansion devices, navigational lights, etc. The navigation lights were replaced with LED lights. The existing Aerial obstruction lights were reconnected to the same power source as the navigational lighting system. Services included extending navigation lighting system access, platforms, ladders, etc.
06/15 – 10/20	**SP#H.001234, Retainer Contract for Bridge Preservation Contract No. 4400002791, Port Allen Canal Bridge - LA 1 Over ICWW, West Baton Rouge Parish, LA (DOTD)** - Launched a field investigation and designed the replacement LA-1/ICWW bridge area lighting, navigational lighting and power system. The design included demolition of existing roadway, Interstate, boat launch area and **navigational lighting** (including low mast, high mast and secondary power controllers). Coordination with the power company, Corps of Engineers (boat launch traffic loop counter), Port of Baton Rouge (center channel warning), Coast Guard (navigational lighting), and FAA offices (to obtain FAA clearance report for the installation of the new high mast lighting), DOTD (for the Interstate lighting requirements and the existing CCTV camera tower), and West Baton Rouge Parish (for roadway and Interstate lighting construction phasing) was key to develop the appropriate design activities for the project.
06/17 - 08/17	**SP# H.009730.5, In-Depth Bridge Inspection LA 1 Lockport, Route LA 1, Lafourche Parish, LA (DOTD)** - Performed an In-Depth Electrical Inspection for the vertical lift Lockport Movable bridge in conformance with the AASHTO Manual for Bridge Evaluation (MBE), National Bridge Inspection Standards (NBIS), Bridge Inspectors Reference Manual (current edition), and Louisiana DOTD Maintenance Directives, and Pontis Inspection Manual, Part 3 Inspection of Movable Bridges, Chapter 8 Electrical Systems. This resulted in the issuance of a report and rehabilitation recommendations for the findings.
09/13 - 12/13; 01/18 – 12/18	**SP# H.003495 & H.011111, I-49 & I-220 Interchange (Phases 1 and 2), Caddo Parish, LA (DOTD) –** Assumed the role of QA Engineer for all lighting work associated with the project. Checked the electrical systems design serving maintenance and decorative lighting for five (5) bridges at two highway intersections. Maintenance lighting was provided within the girder's interior space at three bridges up to 3,000 ft. in span. Bridge exterior decorative lighting used color changing, digitally controlled RGB LED luminaries and programmable lighting controllers. Lighting systems were developed for 2 alternative girder designs: (1) segmental concrete and (2) steel framing. Electrical design included plans, elevations, lighting control schematics, conduit and circuit schedules, installation details, and cost estimate for both alternative bridge designs. Answered RFI questions and offered conflict resolutions to the field contractor during the construction phase.
12/05- 11/13	**SP# 450-15-0103, Interstate Highway Lighting (DOTD) at the I-10, Causeway Blvd. Interchange in Jefferson Parish** - Project Engineer for a Subconsultant. This project was developed under multiple phases, one for each approach. Assisted in the design of power distribution, photometric design overlapping multiple elevations and coordination between City Ordinances and DOTD lighting requirements. Luminaires were selected accordingly and installed meeting the photometric requirements and phased properly throughout the life of the project. Installation details and plans, specification of equipment, and construction cost estimation were developed. Conducted periodic construction inspection throughout the various construction phases of the project.

01/12 - 10/13	**SP# 700-99-0429, Bridge Preservation Retainer Contract, Bayou LaLoutre in St. Bernard Parish** - Worked for the Prime Consultant. Conducted electrical inspections of the movable bridge facility and made recommendations for power and lighting system rehabilitation to include replacement of traffic gates**, navigational lights**, traffic signals, emergency power generation, the operator house, and a utility building. Construction cost estimation was provided.
03/10 - 03/11	**SP# 700-99-0486, Operator House – Houma Navigation Canal Bridge, Terrebonne Parish, LA** – Performed an inspection of the existing facility and recommended/designed the needed rehabilitation involving the electrical power and HVAC system for the Operator House. Issued construction documents which included power and lighting plans, details, and equipment specification.
12/05 - 08/11	**SP# 700-99-0429, Interstate 10, Veterans Boulevard to Clearview Parkway, Metairie, LA** - Supervised and checked the design of the power and lighting for this segment of the road. This included photometric calculations, luminaire selection and spacing, power distribution, installation details and plans, specification of equipment, and construction cost estimation.
04/07 - 09/08	**SP# 700-92-0016, Florida Avenue Bridge over the Inner Harbor Navigational Canal (IHNC) in Orleans Parish** - Project Engineer for a Subconsultant. Supervised and checked the design of the power and lighting for this segment of the road. This included photometric calculations, luminaire selection and spacing, power distribution, installation details and plans, specification of equipment, and construction cost estimation.
01/05 - 12/06	**SP# 700-99-0372, Indefinite Delivery/Indefinite Quantity (ID/IQ)** – Task Order (TO) contract for the rehabilitation and upgrade of electrical infrastructure in buildings occupied by the DOTD. Among the buildings was the materials laboratory in Baton Rouge. Project Manager for the Prime Consultant. Assisted in developing the project scope by inspecting the facilities first. The following phase was to develop the plans and details to rehab this multiple story building facility electrically (power and lighting), and to replace the HVAC with a more up-to-date central system. The constructability of the system was also important since it was to remain occupied during the construction phases. Developed construction cost estimates, selected equipment, developed construction plans and details, and performed periodic construction inspection until the final stages.
12/05 - 11/06	**SP# 700-36-0180 / 700-52-0160, Interstate Highway Lighting (DOTD)** - Engineering and design of the Electric Power Distribution and Lighting for the 18-mile segment of Interstate I-10 elevated above the flood level of Lake Ponchartrain. Worked for a Subconsultant. This segment of the highway was damaged by Hurricane Katrina.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Orien Butler, P.E.**	Years of experience with this firm/employer	3
Title	Electrical Engineer	Years of experience with other firm(s)/employer(s)	14
Degree(s) / Years / Specialization		B.S. / 2003 / Electrical Engineering	
Active registration number / state / expiration date		#38553 / LA / 9-30-2023	
Year registered	2013	Discipline	Electrical and Computer Engineering
Contract role(s) / brief description of responsibilities		Lighting Design	

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).
07/21-02/22	**SP # H.011965, Contract No. 4400020156, LA 47: IWGO Bridge Rehabilitation (HBI), Orleans Parish, LA (DOTD) –** Project Electrical Engineer for the development of final electrical plans, specifications and special provisions, Engineer's Opinion of Probable Construction Cost (OPC), and engineering calculations for the replacement of navigation lighting system and the aerial beacon lighting on the existing bridge. Included all boxes (pull boxes, junction boxes, etc.), conduit, wiring, supports, expansion devices, navigational lights, etc. The navigation lights were replaced with LED lights. The existing Aerial obstruction lights were reconnected to the same power source as the navigational lighting system. Services included extending navigation lighting system access, platforms, ladders, etc.
08/16 - 05/18	**SP# H.012404, I-10 at LA-182 Interchange Ramp Improvements, Lafayette, LA –** Designed the ramp and interchange lighting system for a LADOTD interchange. Designed low mast lighting for modified ramp and interchange roadway to meet required illumination levels at the interchange.
11/16 - 05/18	**SP# H.012422, I-110 at Terrace Avenue, Baton Rouge, LA** - Designed the lighting system for a new $8.8 million ramp project connecting I-110 to Terrace Avenue at Baton Rouge. Designed low mast lighting to meet required illumination levels on the ramp and underpass lighting at the interchange.
01/17 - 05/18	**SP# H.012874, I-55/LA-22 Interchange, Tangipahoa Parish, LA** – Designed the lighting system for an interchange in Tangipahoa Parish, LA. Designed high mast and low mast LED lighting to meet required illumination levels at the interchange.
08/16 - 05/18	**SP# H.012424, I-110 at North to Plank Road, Baton Rouge, LA –** Designed low mast lighting to meet required illumination levels on the interstate. Included the performance of a photometric evaluation of HPS luminaires as well as an assessment of the compatibility for future LED luminaire installation.
01/13 - 05/15	**SP# 829-32-0010/H.008145, LA-1 Relocated, Golden Meadow to Port Fourchon, LA** - The LA 1 Relocated project provides an 18-mile, fully access controlled elevated highway on a new location between Golden Meadow (LA 3235) and Port Fourchon (LA 3090). Performed the lighting design for Phase 2A, B, and C which involved approximately 9 miles of two-lane, elevated highway from Leesville to Golden Meadow (LA 3235). The scope of work also included the design of electrical and controls infrastructure for ITS equipment and new toll booths along the route.
08/14 - 05/15	**H.010882, Harvey Canal Tunnel Renovation, Harvey, LA** – Responsible for the complete electrical rehabilitation of an existing DOTD bridge facility. Designed new lighting in the tunnel as well as interior equipment and personnel rooms, panels, switchboards and standby power systems (UPS and Generator), a new fire alarm and CCTV system.
12/06- 11/13	**SP# 450-15-0103, Interstate Highway Lighting (DOTD) at the I-10, Causeway Blvd. Interchange, Jefferson Parish, LA** – Designed the lighting system for this $35.6 million project involving the addition of five dedicated ramps at the I-10/Causeway Boulevard interchange. Designed photocell cabinet controlled low mast and high mast lighting to meet required illumination levels, including new loop and ramp structures.
12/06 - 08/11	**SP# 450-15-0099/ H.003064, I-10 Widening, Veterans Blvd. to Clearview Parkway, Metairie, LA** – Designed the lighting system for a widening of I-10 from Veterans Boulevard to Clearview Parkway. Designed photocell cabinet controlled low mast and high mast lighting to meet required illumination levels, including new loop and ramp structures).

01/12 - 03/14	**SP# 700-99-0429, Bayou La Loutre Bridge Rehabilitation, Yscloskey, LA** – Responsible for the complete electrical rehabilitation of an existing DOTD movable bridge facility. Included the design of new lighting, panels, switchboards, and control system for the bridge system (including the wound rotor motor used for movable bridge operation). The design was expanded to include a new Operator House structure (2-story) which was requested by the DOTD.
12/06 - 06/08	**SP# 450-11-0048, I-10, LA 30 and LA 44 Interchanges, Gonzales, LA** – Designed the lighting system for two LADOTD interchanges in Gonzales, LA. Designed photocell cabinet controlled high mast lighting to meet required illumination levels for the I-10 on and off ramps at both LA 30 and LA 44.
08/07 - 02/09	**SP# 454-03-0069, I-12/Airport Road Interchange, Hammond, LA** – Designed the lighting system for a LADOTD interchange in Hammond, LA. Included the design of photocell cabinet controlled low mast lighting to meet required illumination levels at the I-12 on and off ramps at Airport Road.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Allen W. Sindel**	Years of experience with this firm/employer	4
Title	Asst. VP, Welding & NDE Technologies	Years of experience with other firm(s)/employer(s)	43
Degree(s) / Years / Specialization		B.S. / 1974 / Welding Engineering	
Active registration number / state / expiration date		N/A	
Year registered	N/A	Discipline	**Other Pertinent Training / Certifications** AWS QC-1, Certified Welding Inspector ((#79053621, expires 5/2024) ASNT SNT-TC-1A Level III – UT (2/2026), MT (2/2026), RT (2/2026), PT (2/2026) ASNT ACCP Level II - VT
Contract role(s) / brief description of responsibilities		NDT Task Leader	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc.
05/19-present)	**Alstom/Bombardier Rail Car, Montreal, Canada -** Serving as TRC's Corporate NDT Level III for MT, PT, UT, and RT for North America. As NDT LV III, he is responsible for the NDT methods, procedures, NDT personnel training, and certifications. He also serves as a subject matter expert in welding and developing new NDT methods, e.g., Phased-Array Ultrasonic testing for passage rail car applications for state entities in North America and Canada.
02/18 – 06/19	**Gerald Desmond Bridge, Long Beach, CA** - Currently serving as Senior Welding and Technologist. His duties include, but are not limited to, vetting distortion control plans and dimensional suitability 3D laser surveys.
02/06 - 12/06	**Oakland Bay Bridge, Oakland, CA –** Provided expert services for the diaphragm pins after rolling. In this capacity, he provided recommendations for root cause analysis and corrective actions due to cracking adjacent to the longitudinal welds. This included a review of the metallurgical reports, capabilities of the heavy rolling/bending equipment, welding and operator qualifications, filler metal used, NDE results, and raw material mill test reports. Provided a findings report to the customer that was later used successfully by the client for claim recovery.
01/12 - 12/16	**Tanjang Bin, EPC 1000 MW Ultra-Super Critical Unit, Malaysia** - Led the quality implementation group in Asia whereby he was responsible for implementing the project quality requirements during execution of all equipment supplied from Asia including supplier qualification, supplier inspection, approval of welding, NDE, project quality plans, supplier inspection and test plans and quality records. This also included Non-Conformance tracking, root cause analysis, corrective actions, and obtain end customer acceptance. In addition, he was the Lead Technical Subject Matter Expert, Codes and Standards and obtained approval from the customer to use GB structural material in lieu of ASTM and perform the structural welding to AWS D1.1-2010.
06/15 - 09/15	**Environmental Control System, Taiwan** - Provided lead expert analysis to the Taiwanese government on box column welding, quality control inspection, and welding filler metal control, and proper design methodology for seismic requirements in accordance with AISC and AWS D1.1-2010 requirements for seismic weld joint requirements. Also developed third party inspection manpower requirements for supplier execution in Vietnam and required Know-How and competency requirements for QC inspectors and NDE technicians.
09/13 - 12/16	**Mao Mou, EPC 660 MW Ultra-Super Critical Unit, Thailand** - Led the quality implementation group in Asia whereby he was responsible for implementing the project quality requirements during execution of all equipment supplied from Asia including supplier qualification, supplier inspection, approval of welding, NDE, project quality plans, supplier inspection and test plans and quality records.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Staci Danna, P.E.**	Years of experience with this firm/employer	4
Title	Office Practice Leader / Project Manager	Years of experience with other firm(s)/employer(s)	18
Degree(s) / Years / Specialization		M.S. / 2003 / Business Administration B.S. / 1999 / Environmental Engineering	
Active registration number / state / expiration date		#PE.0031561 / LA / 3-31-23	
Year registered	2004	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		Environmental/Permitting Support	

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).
04/18-present	**Commonwealth LNG LLC, LNG Export Terminal, Federal Energy Regulatory Commission (FERC) National Environmental Policy Act (NEPA) Environmental Report (ER) and Federal/State/Local Permitting, Louisiana -** Supporting the preparation of a FERC NEPA Environmental Report in support of Natural Gas Act (NGA) §3 Application, agency consultations, and applications for U.S. Army Corps of Engineers (USACE) §404/§10/§408 permit, Louisiana Department of Natural Resources (LDNR) Coastal Use Permit (CUP), Louisiana Department of Environmental Quality (LDEQ) Water Quality Certification (WQC), National Marine Fisheries Service (NMFS) and U.S. Fish & Wildlife Service (USFWS) Section 7 clearances, for this LNG export terminal. The Project will include siting, construction, and operation of a natural gas liquefaction and export facility and integrated NGA Section 3 natural gas pipeline in Cameron Parish, Louisiana (Docket No. PF17-8/CP19-502).
08/19-present	**Trunkline LNG, Lake Charles LNG Export Terminal, FERC NEPA and Federal/State/Local Permitting, Louisiana -** Supporting the preparation of extensions and modifications of permits and agency approvals/authorizations and maintaining tracking documents as the Project moves toward Final Investment Decision and start of construction. TRC originally provided the environmental support for the Project's FERC Order, federal / state / local permitting, and initial construction phase in early 2016. The Lake Charles Liquefaction Project includes construction of liquefaction trains and appurtenant facilities at a site immediately north of Lake Charles LNG's existing LNG import terminal in Calcasieu Parish, Louisiana.
06/19-10/21	**Southern Natural Gas Company/Kinder Morgan, Evangeline Pass Expansion Project, FERC NEPA ER and Federal/State/Local Permitting, Mississippi/Louisiana -** Supported preparation of FERC NEPA ER for §7(c) NGA Application, agency consultations, and applications for federal/state permits for a new compressor station (Rose Hill, MS) and modification of 17 aboveground facilities in Mississippi and Louisiana, including within the Louisiana coastal zone (Docket No. CP20-51-000).
07/21-present	**Louisiana Department of Transportation and Development (LA DOTD), I-10 Lake Charles Calcasieu River Bridge Project, Public-Private Partnership Support, Calcasieu Parish, Louisiana -** Managing the environmental support through the development of Environmental, Socioeconomics, and Environmental Justice Technical Provisions (TPs) in support of the procurement of construction services for the replacement of the aging infrastructure of the existing bridge.
05/18-present	**Energy World USA, Fourchon LNG Export Terminal, FERC NEPA and Federal/State/Local Permitting, Louisiana -** Managing the preparation of a FERC NEPA Environmental Report for Project's NGA Section 3 Application, agency consultations, and applications for federal/state/local permits, authorizations, and clearances. The Fourchon LNG Project will include siting, construction, and operation of a natural gas liquefaction and export facility on Belle Pass in Port Fourchon, Louisiana. The Project is a unique, elevated platform design in Port Fourchon's industrial setting.
09/21-present	**Nucor Steel Louisiana, LLC, Section 10/404 Permitting, Coastal Use Permitting and Pontchartrain Levee District Permitting, Convent, Louisiana -** Project Manager for environmental permitting services to support a project to install new mooring structures for the existing derrick barges used to unload ships and barges on the landside of the existing dock at the Nucor Steel facility near Convent,

	Louisiana. Activities included preparation of permit application documents in order to obtain USACE Section 10 Permit and LDNR OCM CUP as well as a Pontchartrain Levee District Permit (PLD) for installation of piles as part of the mooring structure.
02/20-02/21	**Louis Dreyfus Company, LLC, Port Allen, LA -** Project Manager for obtaining a U.S. Army Corps of Engineers **Section 10/404 Permit** and Atchafalaya Basin Levee District Permit, including Letters of No Objection from the Coastal Protection and Restoration Authority and the Completed Works Branch of the Army Corps of Engineers, for the installation of four (4) new guide piles in the Mississippi River for an existing barge unloading facility in Port Allen, Louisiana.
02/20 – 11/20	**Noranda Alumina LLC, Gramercy, LA -** Project Manager for environmental permitting services to modify/repair the bumper/guide assembly for monopile #5 at Noranda's alumina loadout barge dock on the left descending bank of the Mississippi River near Gramercy, Louisiana. TRC obtained the **U.S. Army Corps of Engineers Section 10/404 Permit** and Louisiana Department of Natural Resources Office of Coastal Management Coastal Use Permit. TRC also prepared documents to obtain Letters of No Objection from the Coastal Protection and Restoration Authority and the Completed Works Branch of the US Army Corps of Engineers, as well as Pontchartrain Levee District approval.
01/18-01/20	**Marathon Petroleum Company, Garyville, LA -** Project Manager for the performance of environmental permitting services for multiple heavy haul transports over the Mississippi River Flood Protection Levee at the Garyville Refinery. Activities included obtaining a **Coastal Use Permit** from the Office of Coastal Management, a **Section 10/404 Permit** from the New Orleans District of the Corps of Engineers, Louisiana Department of Environmental Quality **401 Water Quality Certification**, and Pontchartrain Levee District Permit. Also assisted the client in responding to agency comments and requests for additional information.
09/15-12/19	**Blue Cube Operations LLC/The Dow Chemical Company, Grand Bayou Operations, Belle Rose, LA -** Project Manager for permitting support to install new brine wells at the Grand Bayou Operations facility. Each project included obtaining a **Coastal Use Permit** from the Office of Coastal Management and a **Section 10/404 Permit** from the New Orleans District of the Corps of Engineers; attending geologic review meetings; coordinating with the State Historic Preservation Officer; obtaining Louisiana Department of Environmental Quality **401 Water Quality Certification**; working with the agencies and mitigation banks on mitigation activities; coordinating with Parish governing bodies regarding potential impacts to floodplains; and coordinating with Louisiana Department of Wildlife & Fisheries and U.S. Fish & Wildlife Service on bald eagle activities.
02/18-present	**Levee Board Permitting for Subsurface Activities within 1,500 feet of the Centerline of the Mississippi River Levee – Louisiana.** Managing the preparation of requests for letters of no objection to Agencies; prepared permit drawings; and coordinated with Levee District, the U.S. Army Corps of Engineers, and Coastal Protection and Restoration Authority on issuance of approvals for the following: • Blue Cube Operations LLC, Plaquemine, LA – Tank farm Excavations (multiple submittals) • Noranda Alumina, Gramercy, LA - Monitoring Well Installations & Light Pole Replacements • Louis Dreyfus Company LLC, Port Allen, LA - Excavations for Routine Maintenance Work; Installation of Helical Piles for Belt Conveyor Repairs. • Confidential Client, Plaquemines Parish, LA - Plaquemines Parish Permit for Test Piles

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Jim LeBlanc**	Years of experience with this firm/employer	3
Title	Senior Environmental Scientist	Years of experience with other firm(s)/employer(s)	41
Degree(s) / Years / Specialization		B.S. / 1981 / Marine Biology	
Active registration number / state / expiration date		N/A	
Year registered	Discipline	**Other Pertinent Training / Certifications** Army Corps of Engineers Wetlands Delineation & Management Training Program-Richard Chin Environmental Training, January 2005 U.S. Fish & Wildlife -Wetlands Classification, 1984 U.S. Fish & Wildlife Service – Habitat Evaluation Procedures, 1984	
Contract role(s) / brief description of responsibilities		Environmental/Permitting Support	

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).
02/17-04/19	**Blue Cube Operations LLC/The Dow Chemical Company, Grand Bayou Operations, Belle Rose, Louisiana –** Lead Scientist for development of the Joint Permit Application (JPA) needed to construct a new well pad and support infrastructure to install a new brine well at the Grand Bayou Operations facility. Providing coordination for a geologic review meeting; Section 106 coordination with the State Historic Preservation Officer; obtaining Louisiana Department of Environmental Quality **401 Water Quality Certification**; coordinating with approved mitigation banks to satisfy permit requirements for compensatory mitigation; and coordinating with U.S. Fish & Wildlife Service and the Louisiana Department of Wildlife & Fisheries on inactive bald eagle nest and colonial wading bird colonies in the general vicinity.
10/18-03/19	**Hilcorp Energy Company, Cartwright Prospect, Terrebonne Parish, LA -** Permit Lead responsible for acquiring the Section 10/404 permit from the Corps of Engineers, a **Coastal Use Permit** from the Office of Coastal Management and approval from the Terrebonne Parish Consolidated Government for the construction of a new well pad needed to drill a new production well. Permitting activities include coordinating mitigation for unavoidable impacts, purchasing of mitigation credits from an approved mitigation bank, and acquisition of a **401 Water Quality Certification** for LDEQ.
06/19-06/20	**Nucor Steel Louisiana, Convent, LA -** Permit Lead for acquisition of the **Section 10/404 permit** from the Corps of Engineers, a **Coastal Use Permit** from the Office of Coastal Management, and approval from the Pontchartrain Levee District for maintenance dredging activities in the Mississippi River at their ship dock and barge loadout facility. Permitting activities included the acquisition of a **401 Water Quality Certification** for LDEQ and Letters of No Objection (LONO) from the Completed Works Branch of the Corps and the Coastal Protection and Restoration Authority at the Louisiana Department of Natural Resources.
05/22-present	**Marathon Oil Company, Garyville, LA -** Permit Lead for the acquisition of approval from the Pontchartrain Levee District to transport numerous large process vessels over the Mississippi River Flood Protection Levee at an existing location used for previous heavy haul transports. He is providing coordination of the stability analysis using Method of Planes under preparation by a local geotechnical firm to receive Letters of No Objection from the Completed Works Branch of the Corps of Engineers and CPRA at the Louisiana Department of Natural Resources. Additionally, activities will require the preparation of a Joint Permit Application (JPA) for a Coastal Use Permit (CUP) and a Section 10/404 permit from the Corps of Engineers. Construction of a temporary modular bridge across the levee crown will also require a 408 review by the Corps.

03/19-01/20	**Noranda Alumina LLC, Gramercy LA -** Permit Lead for the acquisition of a **Section 10/404 permit** from the Corps of Engineers and a **Coastal Use Permit** from the Office of Coastal Management for the repair of damage guide piles at the alumina dock and maintenance dredging behind both docks for removal of sediment accumulation creating loading problems on the dock piles. Permitting activities included approval from the **Pontchartrain Levee District** for all the activity within 1,500 feet of the Mississippi River Flood Protection Levee. Permitting activities included the acquisition of a **401 Water Quality Certification** for LDEQ and Letters of No Objection (LONO) from the Completed Works Branch of the Corps and the Coastal Protection and Restoration Authority at the Louisiana Department of Natural Resources.
10/19- 10/20	**Noranda Alumina LLC, Gramercy, LA –** Permit lead for acquisition of the Section 10/404 permit from the New Orleans District of the Corps of Engineers, a Coastal Use Permit from the Office of Coastal Management, and approval from the Pontchartrain Levee District for construction of a new wetcake conveyor, along with the repair and rehabilitation of an existing liquid barge dock for bulk transfer operations at Noranda Alumina facility in Gramercy, Louisiana. Installation of new piles and dolphins in the river was to be authorized under a Nationwide Permit. Additionally, a 408 Authorization from the Corps of Engineers was required for construction activities within the Mississippi River Flood Protection Levee easement. Prior to submitted the Joint Permit Application (JPA), a wetlands delineation was performed on the river batture in order to identify the extent of jurisdictional wetland potentially impacted by construction activities. Before the permitting could be completed, the project was cancelled due to design delays and cost escalations.
07/18-09/18	**Louis Dreyfus LLC, Atchafalaya Basin Levee District Permitting, Port Allen, LA -** Levee Permit Lead for acquiring approval from the Atchafalaya Basin Levee District to perform temporary excavation maintenance work within 1,500 feet of the centerline of the Mississippi River Flood Protection Levee. Included the preparation of a request letter to accompany the vicinity map, plan view and cross-section drawing for the project, and responding to requests for additional information from the Corps of Engineers and CPRA.
06/20-06/21	**Louis Dreyfus LLC, Port Allen, LA –** Permit Lard for an Atchafalaya Basin Levee Board permit to install fur new guide piles at the existing barge unloading terminal needed to force barge tows from crashing into the outer bumper system in order to line up with the barge pulley system. Activities included coordination with the design engineer to provide lateral load calculation for the piles required by CPRA and the Corps for Letters of No Objection.
03/07-09/09	**Marathon Oil Company, Garyville, LA - P**ermit lead for the acquisition of a **Section 10/404 permit** from the Corps of Engineers, Coastal Use Permit from the Office of Coastal Management and approval from the **Pontchartrain Levee District** for the construction of a new marine terminal (dock) in the Mississippi River as part of a $3.2 billion expansion at the Garyville refinery.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Keith Suderman, PhD**	Years of experience with this firm/employer	8
Title	Project Manager	Years of experience with other firm(s)/employer(s)	13
Degree(s) / Years / Specialization	PhD / 2001 / Biological Oceanography MS / 1997 / Biological Oceanography BA / 1989 / Chemistry		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	
Contract role(s) / brief description of responsibilities	Permitting		

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc.
03/14 – present	**Commonwealth LNG LLC, LNG Export Terminal, Federal Energy Regulatory Commission (FERC) National Environmental Policy Act (NEPA) Environmental Report (ER) and Federal/State/Local Permitting, Louisiana -** Managed early support (e.g., fatal-flaw analysis, regulatory review), field survey (wetlands, protected-species habitat, cultural resources), agency consultation, preparation of FERC ER in support of Natural Gas Act (NGA) §3 Application and applications for U.S. Army Corps of Engineers (USACE) §404/§10/§408 permit, Louisiana Department of Natural Resources (LDNR) Coastal Use Permit (CUP), Louisiana Department of Environmental Quality (LDEQ) Water Quality Certification (WQC), National Marine Fisheries Service (NMFS) and U.S. Fish & Wildlife Service (USFWS) Section 7 clearances, and other federal/state/local permits for this LNG export terminal (Docket No. PF17-8, CP19-502).
05/14 – 06/16, 01/19-Present	**Trunkline LNG, Lake Charles LNG Export Terminal, FERC NEPA ER and Federal/State/Local Permitting, Louisiana.** Managed post-submittal support of the FERC ER and §3/§7(c) Application and applications for USACE §404/§10/§408, LDNR CUP, LDEQ WQC, NMFS/USFWS Section 7 clearances, and other federal/state/local permits for this LNG export terminal (Docket Nos. CP14-119, CP14-120, and CP14-122). Completed implementation plan; received limited notice to proceed. Managed extension of federal/state/local permits and clearances. Louisiana Department of Wildlife and Fisheries (LDWF) Scenic River permit planned. Extensive wetlands in difficult environments (e.g., wetland mosaics) required close coordination with resource agencies.
05/16 – 03/19	**Driftwood LNG Project, FERC Third-Party NEPA Environmental Impact Statement (EIS), Louisiana.** As Project Manager, provided third-party support of the FERC in the preparation of an EIS (Docket No. PF16-6, CP17-117, 118) for a proposed LNG liquefaction and export facility and natural gas pipeline project on the Calcasieu Ship Channel. The proposed project would consist of a 27.6-MTPA LNG liquefaction facility, berths for three LNG carriers, a material offloading facility, and an approximately 96-mile-long, 48-, 42-, and 36-inch-diameter pipeline to transport natural gas from existing pipeline systems to the LNG terminal facilities. Construction began in 2022.
02/19-07/21	**Southern Natural Gas Company/Kinder Morgan, Evangeline Pass Expansion Project, FERC NEPA ER and Federal/State/Local Permitting, Mississippi/Louisiana.** Supported preparation of FERC NEPA ER for §7(c) NGA Application, agency consultations, and applications for federal/state permits for a new compressor station (Rose Hill, MS) and modification of 17 aboveground facilities in Mississippi and Louisiana, including within the Louisiana coastal zone (Docket No. CP20-51-000).
02/21-present	**Louisiana Department of Transportation and Development (LA DOTD), I-10 Lake Charles Calcasieu River Bridge Project, Public-Private Partnership Support – Calcasieu Parish, Louisiana.** Provided environmental support through the development of Environmental, Socioeconomics, and Environmental Justice Technical Provisions (TPs) in support of the procurement of construction services for the replacement of the aging infrastructure of the existing bridge.

01/07 – 10/11	**Chevron Products Company, USACE/MDMR Wetlands Permitting, Pascagoula, Mississippi. Wetlands and dredging permitting** discipline lead for Chevron's $1.3B Pascagoula Base Oil Project. USACE §404 permit, Mississippi Department of Marine Resources (MDMR) CUP, and Mississippi Department of Environmental Quality (MDEQ)WQC were issued within 6 months. Prepared a Biological Assessment and received clearance for impacts to Gulf sturgeon critical habitat.
02/17 - present	**Energy World USA, Fourchon LNG Export Terminal, FERC NEPA ER and Federal/State/Local Permitting, Louisiana.** Managing FERC ER for project's NGA Section 3 Application. Supporting federal, state, and local permitting. Project is a unique, elevated platform design in Port Fourchon's industrial setting. Docket No. PF17-9-000.
02/14-07/16	**Spectra Energy, Loudon Expansion Project, FERC NEPA ER and Federal/State/Local Permitting, Tennessee.** Managed preparation of FERC ER for NGA §7(c) Application, agency consultations, and applications for Nationwide Permit No. 12 (NWP-12) and other federal/state/local permits for a 10-mile pipeline project (Docket No. CP15-91). Supported the preparation of an Environmental Assessment (EA) with the Tennessee Valley Authority (TVA) as a cooperating agency. Addressed protected bat species issues though agency consultation.
05/06-11/06	**Gulfstream Pipeline Company, LLC, FERC NEPA ER and Federal/State/Local Permitting, Tampa Bay, Florida.** Managed the preparation/submittal of a NEPA ER and applications for a Florida Department of Environmental Protection Environmental Resource Permit, Tampa Port Authority Standard Work Permit and Public Easement Permit, and Pinellas County permit, for an 18-mile offshore natural-gas pipeline in Tampa Bay, Florida.
02/06-03/09	**Southern Natural Gas, NEPA and Permitting Support, Coastal Georgia.** SNG's Cypress Pipeline Project is a 167-mile natural gas pipeline through pine flatwoods, herbaceous marsh, and estuarine environments of coastal Georgia. Assisted with wetland delineation and NEPA Environmental Report. Technical support of experimental design and analysis for post-construction wetland monitoring study that documented the efficacy of the natural-revegetation method (via topsoiling in wetlands vs. labor-intensive planting methods).
05/12-12/14	**USACE, Third-Party EIS for the Glades Reservoir. Hall County, Georgia.** Analysis of NEPA-required reasonable alternatives and USACE §404(b)(1) practicable alternatives for water-supply sources and reservoir sites. Coordination and organization of existing-conditions chapter of EIS, under direction of the USACE, Savannah District, to evaluate a pumped storage reservoir located near the Chattahoochee River and Lake Lanier. Scoping outreach included the States of Georgia, Alabama, and Florida.
01/04-05/05	**Southern Natural Gas, NEPA and Permitting support, North Georgia.** Prepared Resource Reports 2, Water Use and Quality; 3, Fish, Wildlife, and Vegetation; and 7, Soils, for FERC's NEPA Environmental Report. Conducted wetland and waterbody delineation and threatened-and-endangered species habitat surveys and prepared the Wetland/Waterbody Delineation Report for Southern Natural Gas' (SNG's) Triangle Pipeline-Looping Project in north Georgia.

16. Staff Experience:

Firm employed by	Wiss, Janney, Elstner Associates, Inc.		
Name	**John Williams, P.E.**	Years of experience with this firm/employer	3
Title	Associate Principal	Years of experience with other firm(s)/employer(s)	23
Degree(s) / Years / Specialization	B.S. /1996 / Engineering Science		
Active registration number / state / expiration date	#PE.0044300 / LA / 9-30-22		
Year registered: 2020	Discipline: Mechanical		
Contract role(s) / brief description of responsibilities	Sr. Mechanical Engineer (**MPR #5**)		

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).
07/19-present	**Contract 4400009424, Danziger Lift Bridge, New Orleans, LA -** Senior Mechanical Engineer responsible for performing an inspection of relevant portions of the main span contributing to the reported operational issues, an in-depth inspection of the lift bridge machinery and electrical systems, and development of repairs to restore the long-term functionality and reliability of the bridge. Based on the findings from the investigation, performed strain gage testing to measure span balance and implementation of weight changes to improve seating of the span. Strain gage testing also showed that the span drive differentials on both towers were not functioning properly. Mr. Williams worked with the manufacturer to sort out how to adjust the clutches in the differentials to function properly.
10/12-08/17	**Movable Bridge Construction Engineering Services for CEC, Inc., Various, LA -** Senior Mechanical Engineer for various movable bridge construction engineering services as a subconsultant for Complete Engineering & Construction, Inc. (CEC) for multiple projects across LA. Projects included 1) Lapalco Blvd. Bascule Bridge over Harvey Canal and West Larose Vertical Lift Bridge (strain gage balance testing, data acquisition and balance analysis); 2) New Orleans & Gulf Coast Railway Company Bridge 4.4 over Harvey Canal (strain gage balance testing, balance calculations, investigation of existing conditions and assisting in the development of repair plans to disassemble the existing machinery and perform field machining); 3) Houma Navigation Canal Bridge (investigation into rod seal leakage for a span operating cylinder); and 4) 4th Street Bridge over Harvey Canal (strain gage balance testing, field measurements to document existing conditions of the mounting surface for the curved tread plates and assisting in the development of procedures to replace the curved treads).
07/20-11/20	**St. Claude Avenue Bridge Construction Engineering Services, New Orleans, LA -** Project Manager and Senior Mechanical Engineer for construction engineering services on an expedited basis to assist with replacement of the second link pins which connect the counterweight truss to the balance link. Services included balance testing, design of the counterweight support system, development of a sequence of work for supporting the structure, unloading and removing the pins, completing the repairs and restoring the bridge to service within a marine navigation closure that was controlled by repairs to the adjacent lock. Mechanical engineering services were provided on an expedited basis due to the short time period between award of the project and start of the marine navigation closure.
08/15-present	**3rd Street Bascule Bridge over Islais Creek, San Francisco, CA -** Project Manager and Lead Mechanical Engineer for the design of a replacement bridge that includes new span operating machinery, new span support machinery for the new leaf to be supported by the existing substructure, and development of complex construction staging to address constraints for the number and duration of outages for MUNI light rail services. The project started with a detailed scoping inspection that included a rating assessment of the structure, mechanical, and electrical systems that identified critical deficiencies leading to the decision to replace the bascule span superstructure in its entirety.
06/14-06/16	**East Roundbunch over Cow Bayou, Orange County, TX -** Project Manager/Mechanical Engineer of Record for the scoping inspection and rehabilitation design of mechanical and electrical machinery for an historic swing bridge. The mechanical design provided complete details for new span drive machinery and support machinery in accordance with the current AASHTO requirements. This included electro-mechanical span drive machinery, a new bronze spherical plain center bearing, balance wheels, end wedges and center pier live

	load rollers. The machinery and structure were protected from risks due to over-travel with end of travel bumpers at the full-open and full-closed positions.
10/14-07/19	**St. Peters Canal Swing Bridge Replacement, Cape Breton, NS, Canada -** Project Manager/Engineer of Record for the mechanical and hydraulic machinery for this new hydraulically operated center bearing swing bridge. Responsibilities included design and backchecking of design calculations, plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates during the design phase of the project. During the construction phase, his responsibilities included coordinating a team of mechanical and electrical engineers and inspectors to review and approve all of the construction submittals and provide complete shop and field inspection of all mechanical/electrical aspects of the rehabilitation project.
02/04–11/13	**Mystic Bridge Rehabilitation, Groton, CT -** Project Manager/Senior Mechanical Engineer for the rehabilitation of this historic single leaf, mechanically-operated Brown bascule bridge. This project began with in-depth inspection of the mechanical and electrical systems of the bridge and a complete load rating of all mechanical machinery to establish recommendations for modifications and rehabilitation to keep the structure operational for 20 years. During the inspection, a misalignment of the span drive machinery was identified and a survey of the bridge was recommended. Participated in a precision optical survey which identified significant differential pier settlement as the cause of the misalignment problems. The mechanical design included upgrades to the capacity of the span drive machinery as needed to meet all AASHTO requirements. A custom vehicular safety barrier gate was designed to rise out of the roadway to protect errant vehicles from entering the waterway with the bridge raised, yet remain visually unobtrusive with the bridge seated and open to vehicular traffic. Responsibilities included design and backchecking of design calculations, plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates.
03/10-11/17	**Sir Ambrose Shea Lift Bridge Replacement, Placentia, NL, Canada -** Project Manager/Mechanical Engineer of Record responsible for the design of span drive machinery, span lock machinery and span support machinery for a new tower drive lift bridge. Duties included preparation and review of all relevant calculations (sized motor, gear tooth strength calculations, sized brakes, shaft calculations for moment and torsion, sized couplings, designed machinery base plates, sized span lock bars, sized span lock and lockbar actuator), fatigue analysis of trunnion shaft and sized trunnion bearings, and preparation of design drawings, specifications and cost estimates during the design phase of the project. During the construction phase, his responsibilities included review of the Contractor's shop drawings and procedures for conformance to Contract requirements, disposition of non-conformance reports (NCR's) and responding to requests for information or changes from the Contractor.
07/14-02/18	**Burlington Canal Lift Bridge, Hamilton, ON, Canada -** Movable Bridge Construction Specialist and Heavy Machinery Specialist for the Contractor as part of a major electrical and minor mechanical rehabilitation of this critical vertical lift bridge. The mechanical scope of work included replacement of the high-speed end of the span drive machinery (brakes, speed reducer, shaft, and couplings). The scope of work required the contractors engineer to sign and seal all submittals, including shop drawings.
08/08-08/18	**Columbus Road Lift Bridge, Cleveland, OH -** Senior Mechanical Engineer for this rehabilitation project with the objective to maintain the historic character of the structure while significantly reducing maintenance requirements and improving overall system efficiency. A scoping inspection of the mechanical machinery determined its suitability for continued long-term service and compliance with current AASHTO code requirements. The new mechanical design provided for the complete replacement of all span support machinery, span drive machinery, and span locks.

16. Staff Experience:

Firm employed by	Wiss, Janney, Elstner Associates, Inc.		
Name	**Robert Tosolt, P.E.**	Years of experience with this firm/employer	2
Title	Associate Principal	Years of experience with other firm(s)/employer(s)	27
Degree(s) / Years / Specialization		B.S. / 1992 / Mechanical Engineering	
Active registration number / state / expiration date		#PE.0035750 / LA / 3-31-23	
Year registered	2010	Discipline	Mechanical
Contract role(s) / brief description of responsibilities		Sr. Mechanical Engineer (**MPR #5**)	

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).
10/15–present	**Barter's Island Swing Span, Boothbay, ME -** Engineer of Record to replace the existing symmetric manually operated swing span with a new bob-tail swing span of similar overall length. Services were initiated with a scoping inspection and load rating report. Responsible for all design calculations; selection and layout of new machinery, including span drive machinery end lift machinery, center support machinery and rigid stop components; layout and review of all drafting; preparation of mechanical specifications; and coordination with electrical and structural disciplines. Extensive construction support services are being provided to ensure the successful implementation of the design including complete shop drawing and machinery installation procedure review, response to contractor RFIs and NCRs, site inspection of and assistance with troubleshooting the machinery installation, and oversight of field testing and commissioning of the newly installed mechanical and electrical operating and control systems
06/14-06/16	**East Roundbunch over Cow Bayou, Orange County, TX -** Senior Mechanical Engineer for the scoping inspection and rehabilitation design of mechanical and electrical machinery for an historic swing bridge. The mechanical design provided complete details for new span drive machinery and support machinery in accordance with the current AASHTO requirements. This included electro-mechanical span drive machinery, a new bronze spherical plain center bearing, balance wheels, end wedges, and center pier live load rollers. The machinery and structure were protected from risks due to over-travel with end of travel bumpers at the full-open and full-closed positions.
08/08–08/18	**Columbus Road Vertical Lift Bridge, Cleveland, OH -** Engineer of Record for complete replacement of all mechanical machinery on this vertical lift bridge, including preparation of plans, specifications, and estimates for all new machinery associated with the new lift span and all new machinery to replace the existing machinery located on the rehabilitated lift span towers. A scoping inspection of the mechanical machinery determined its suitability for continued long-term service and compliance with current AASHTO code requirements. All machinery was designed to meet requirements of the 2007 AASHTO LRFD Movable Bridge Design Specifications. Provided construction support for oversight of installation and commissioning of the bridge.
03/16–present	**Vertical Lift Rehabilitations at Fairport and Spencerport, Fairport and Spencerport, NY -** Engineer of Record for the rehabilitation of all mechanical machinery as well as the electrical control and operating systems on this pair of vertical lift bridges over the Erie Canal. Includes the preparation of separate PS&E documents for each lift bridge. Responsible for all design calculations; selection and layout of new and/or rehabilitated machinery, including span drive machinery, operating rope systems, main counterweight systems, and span guide systems; layout and review of all drafting; preparation of mechanical specifications; and coordination with electrical and structural disciplines. Machinery was designed to comply with the AASHTO LRFD Movable Bridge Design Specifications within the limitations of the existing site constraints. Will provide construction support services to include shop drawing review and response to contractor RFIs and NCRs.
03/10-11/17	**Sir Ambrose Shea Lift Bridge Replacement, Placentia, NL, Canada -** Senior Mechanical Engineer for the design of mechanical machinery for a new tower drive lift bridge. Duties included mechanical design of span drive machinery, counterweight sheaves, trunnions and bearing assemblies, wire ropes and wire rope terminations, span and counterweight guides, live load supports and span locks.

02/04–11/13	**Mystic Bridge Rehabilitation, Groton, CT:** Senior Mechanical Engineer for the rehabilitation of this historic single leaf, mechanically operated Brown bascule bridge. This project began with in-depth inspection of the mechanical and electrical systems of the bridge and a complete load rating of all mechanical machinery to establish recommendations for modifications and rehabilitation to keep the structure operational for 20 years. During the inspection, a misalignment of the span drive machinery was identified and a survey of the bridge was recommended. Participated in a precision optical survey which identified significant differential pier settlement as the cause of the misalignment problems. The mechanical design included upgrades to the capacity of the span drive machinery as needed to meet all AASHTO requirements. A custom vehicular safety barrier gate was designed to rise out of the roadway to protect errant vehicles from entering the waterway with the bridge raised, yet remain visually unobtrusive with the bridge seated and open to vehicular traffic. Responsibilities included design and backchecking of design calculations, plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates.
07/11-03/14	**SR 529 Northbound Snohomish River Bridge, Everett, WA -** Senior Mechanical Engineer for the time-critical rehabilitation of wire ropes and wire rope assemblies. Rehabilitation included specification of ropes, removal of existing counterweight assemblies and redesign of new assemblies. Performed and/or checked all necessary calculations, prepared shop drawings of all necessary components, performed yellow-line check of shop drawings, and reviewed specs. Also performed source inspection of new machinery and witnessed wire rope break tests.
10/14-07/19	**St. Peters Canal Swing Bridge Replacement, Cape Breton, NS, Canada -** Senior Mechanical Engineer for the mechanical and hydraulic machinery for this new hydraulically-operated center bearing swing bridge. Responsibilities included design and backchecking of design calculations, plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates during the design phase of the project.
01/12 – 11/12	**LaPalco Boulevard Bascule Bridge over Harvey Canal, New Orleans, LA -** Provided strain gage balance testing to document the final balance condition of each leaf upon the completion of repairs to the bascule leaves.
06/18-present	**Ohio Street Lift Bridge, Buffalo, NY -** Project Manager/Senior Mechanical Engineer for the rehabilitation of this bridge that included plans and specifications for replacement of the control system and modifications to the electrical distribution system, as well as replacement of the counterweight ropes, removal of obsolete and abandoned machinery components, and replacement of the deteriorated span drive brakes. The project commenced with a mechanical and electrical inspection of the bridge to determine its status in terms of safety, reliability, and longevity of the mechanical and electrical systems. Presently performing construction support services including review of shop drawing and mechanical installation submittals, shop inspection, field inspection and oversight of field start-up and commissioning when the new systems are installed.
03/18-02/20	**Charles Berry (Erie Ave) - Lorain 6 Bascule Bridge Rehabilitation, Lorain, OH -** Movable Bridge Project Coordinator and designer for a temporary hydraulic operating system during a rehabilitation of the operating and support systems for this historic double leaf deck truss bascule bridge. Included complete replacement of the drive machinery and electrical power and controls systems. Services included review, coordination and integration of the mechanical, electrical, and structural systems; review of all shop drawings for fit-up and constructability; shop inspection of critical components; field oversight during construction for critical assemblies; verification of final alignment of machinery; commissioning of the installed operating systems; strain gage operational testing and power recordings to confirm satisfactory performance of the newly installed systems; and development of the Operations and Maintenance Manual.

16. Staff Experience:

Firm employed by	Wiss, Janney, Elstner Associates, Inc.		
Name	**Gareth Rees, P.E.**	Years of experience with this firm/employer	2
Title	Principal	Years of experience with other firm(s)/employer(s)	51
Degree(s) / Years / Specialization	College Associateship University of South Wales (Bsc electrical equiv.) / 1968 / Electrical Engineering		
Active registration number / state / expiration date	#PE.0040754 / LA / 9-30-22		
Year registered 2015	Discipline	Electrical and Computer Engineer	
Contract role(s) / brief description of responsibilities	Sr. Electrical Engineer (**MPR #6**)		

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).
07/19-present	**Contract 4400009424, Danziger Lift Bridge, New Orleans, LA -** Lead Electrical Engineer for an inspection of relevant portions of the main span contributing to the reported operational issues, an in-depth inspection of the lift bridge machinery and electrical systems, and development of repairs to restore the long-term functionality and reliability of the bridge. Based on findings, a design was provided for a new lift span skew control system that was required after existing components were removed and could not be relocated or replaced in kind, and for clutch electrical controls associated with the span drive differentials. The design is complete and implementation is ongoing.
03/20-12/20	**Skew Detection System Replacement on Vertical Lift Bridges – Louisiana -** Principal Investigator for a study that included a review of alternatives for skew control, monitoring, and indication for tower drive vertical lift bridges based on effective management of skew and minimizing advanced electronic equipment. The study included a literature review, interviews with current owners and maintainers of vertical lift bridges, and interviews with industry control specialists experienced in skew control systems. As a result of the study, Mr. Rees recommended a preferred system of skew control for the DOTD that combines the use of direct skew measurement with an inclinometer for skew monitoring and trip indication, and indirect measurement of skew using encoders for controlling skew during operation. To minimize maintenance and mean-time-to-repair, and to limit dependency on PLC systems, it was recommended that control integration be achieved using SMART relays (that contain self-diagnostics) that may easily be replaced in the event of an issue.
06/14-06/16	**East Roundbunch Road over Cow Bayou, Orange County, TX -** Lead Electrical Engineer for the design of new drives, controls, and field devices for the span drive machinery and the end wedge machinery to rehabilitate this historic structure to provide long-term reliable service. Span drive machinery was comprised of components with a proven history of use on movable bridges and was powered by an electric motor. Included the design and integration of new traffic control features, bridge and maintenance lighting, and a CCTV system.
04/13-10/19	**Fort Madison Toll Bridge, Fort Madison, IA -** Engineer of Record/Project Manager for the rehabilitation of this double decker swing span bridge over the Mississippi in Iowa. The work was divided into multiple phases. The first phase involved design of a new aerial and submarine power cable installation. The new installation was configured as redundant power sources for the bridge. The design of the submarine cable installation included all surveying of the existing submarine cable, routing of the new cable, and designing and specifying the cable. The work also included excavation requirements and development of an approved trenching system to satisfy environmental constraints. The design and contract documents were developed based on staged construction to satisfy marine, railroad and highway operations as well as satisfy Coast Guard and emergency services with respect to bridge operating outages. The engineering also involved construction services such as shop drawing review, installation inspection and testing, and cut over of the completed installation.
08/15-present	**3rd Street Bascule Bridge over Islais Creek, San Francisco, CA -** Senior Electrical Engineer for the design of a replacement bridge that includes design of a new electrical power and control systems which will be integrated with the MUNI light rail traction power and signal system. The project started with a detailed scoping inspection which included a rating assessment of the structure, mechanical, and electrical systems.
03/10 – 11/17	**Sir Ambrose Shea Lift Bridge, Placentia, NL, Canada -** Engineer of Record for the design of a replacement tower drive vertical lift bridge with two duty motors and brakes in each tower and two sets of span locks. The bridge operator's control house is located at roadway level and remote from the bridge with CCTV surveillance and fiber optic communications to the towers. The PCL-based control

	system was designed using Hot standby redundant PLC's, a human machine interface (HMI), and control console and a redundant fiber optic communications transmission backbone. The electric services are distributed to state-of-the-art intelligent MCC's located in each of the bridge towers, and have internal communications capabilities that interface directly with the bridge control system PLC for bridge operation, drive monitoring and data acquisition.
01/14–12/14	**Haystack Bascule Bridge over Petaluma River, Petaluma, CA -** Engineer of Record and Lead Electrical Engineer for the design that included the relocation, rehabilitation and reassembly of a single leaf rolling lift bascule railroad bridge. The designed bridge electrical systems consist of modern PLC logic control and flux vector variable frequency drives. The electric service and standby generator for bridge back-up power are located on one side of the navigable channel with the bridge operating system on the other. An under-channel installation was developed as part of the design to connect the electric service equipment and associated communications to the bridge operating system. The system design included communications, fire life safety system design as well as the integration of the bridge operating system with the railroad train control.
03/18-02/20	**Charles Berry (Erie Ave) - Lorain 6 Bascule Bridge Rehabilitation, Lorain, OH -** Movable Bridge Project Coordinator for rehabilitation of the operating and support systems for this historic double-leaf deck truss bascule bridge. Included complete replacement of the drive machinery and electrical power and controls control systems. Services included review, coordination and integration of the mechanical, electrical, and structural systems; review of all shop drawings for fit-up and constructability; shop inspection of critical components; field oversight during construction for critical assemblies; verification of final alignment of machinery; shop and field acceptance testing of the electrical system installation; commissioning of the installed operating systems; strain gage operational testing and power recordings to confirm performance of the newly installed systems, and development of the O&M Manual.
03/16–present	**Vertical Lift Rehabilitations at Fairport and Spencerport, Fairport and Spencerport, NY -** Lead Electrical Engineer for the rehabilitation of all electrical drive and control components to modernize the systems and provide the appropriate safety interlocks and safeguards required of present code. Construction support services will include shop drawing review and response to contractor RFIs and NCRs, along with oversight of field testing and commissioning of the newly installed electrical operating and control systems
10/10 - 02/12	**Port Severn Swing Bridge 60 Rehabilitation, Port Severn, ON, Canada -** Lead Electrical Engineer for a bridge inspection, condition survey, engineering analysis and preparation of plans specifications and cost estimates. Provided electrical engineering services including visual and dynamic inspection of the operating structure, analyzing field gathered data, and test results and preparing an electrical condition survey report complete with recommendations and cost estimates. Prepared the design (plans, specifications, and cost estimates) for rehabilitation of all reported electrical deficiencies and required upgrades to the electrical system.
06/18-present	**Ohio Street Lift Bridge - Buffalo, NY:** Lead Electrical Engineer for the rehabilitation of the bridge that included plans and specifications for replacement of the control system and modifications to the electrical distribution system. The project commenced with a mechanical and electrical inspection to the bridge to determine the status in terms of safety, reliability, and longevity of the mechanical and electrical systems. Presently performing construction support services including review of shop drawing and electrical installation submittals, shop inspection, field inspection and oversight of field start-up and commissioning when the new systems are installed.

16. Staff Experience:

Firm employed by	Wiss, Janney, Elstner Associates, Inc.		
Name	**Yang Feng Zheng, P.E.**	Years of experience with this firm/employer	2
Title	Associate Principal	Years of experience with other firm(s)/employer(s)	13
Degree(s) / Years / Specialization	M.S. / 2009 / Electrical Engineering B.S. / 2006 / Electrical and Computer Engineering B.S. / 2006 / Physics		
Active registration number / state / expiration date	#PE.0045341 / LA / 9-30-23		
Year registered	2021	Discipline	Electrical
Contract role(s) / brief description of responsibilities	Sr. Electrical Engineer (**MPR #6**)		

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).
07/19-present	**Contract 4400009424, Danziger Lift Bridge, New Orleans, LA -** Senior Electrical Engineer performing an inspection of relevant portions of the main span contributing to the reported operational issues, an in-depth inspection of the lift bridge machinery and electrical systems, and development of repairs to restore the long-term functionality and reliability of the bridge. Based on findings from the investigation, a design was provided for a new lift span skew control system that was required after existing components were removed from the bridge and could not be relocated or replaced in kind, and for the clutch electrical controls associated with the span drive differentials. The design is complete and implementation is ongoing.
06/14-06/16	**East Roundbunch Road over Cow Bayou, Orange County, TX -** Senior Electrical Engineer for the design of new drives, controls, and field devices for the span drive machinery and the end wedge machinery needed to rehabilitate this historic structure to provide long-term reliable service. The span drive machinery was comprised of components with a proven history of use on movable bridges and was powered by an electric motor. Included the design and integration of new traffic control features, bridge and maintenance lighting, and a CCTV system.
03/10–11/17	**Sir Ambrose Shea Lift Bridge, Placentia, NL, Canada -** Assistant Electrical Engineer for the design of a replacement vertical lift bridge. Provided electrical engineering design services for the electrical power and control systems associated with the new tower drive lift bridge. The design also included pedestrian, vehicular and marine traffic control. All traffic control equipment was designed to ensure reliable operation of the bridge and minimize downtime in the event of failure. All traffic control equipment was designed in accordance with MUTCDC, CHBDC, Coast Guard requirements, and Safety codes. Work included the production of bidding documents and specifications.
06/19–present	**North Coast Harbor Bascule Bridge, Cleveland, OH -** Senior Electrical Engineer for the design of this double leaf bascule bridge. The electrical design included electrical utility service, underground electrical distribution system, submarine power and control cables, motor control centers, bridge machineries, PLC control system, operator control console, field instrumentation and feedback devices, facility and auxiliary power distribution system, CCTV and security systems, bridge lighting system, and navigational aids in accordance with Coast Guard requirements. The control of the bridge consists of hydraulic power units with a simplistic Programmable Logic (PLC) based control system. This control console and CCTV system provide the operator with good visibility of the bridge operation and the navigable channel for safe and reliable operation of the bridge.
10/10 - 02/12	**Port Severn Swing Bridge 60 Rehabilitation, Port Severn, ON, Canada -** Electrical Engineer for a bridge inspection, condition survey, engineering analysis and preparation of plans specifications and cost estimates. Provided electrical engineering services including visual and dynamic inspection of the operating structure, analyzed field gathered data and test results, and prepared an electrical condition survey report complete with recommendations and cost estimates. Prepared the design (plans, specifications, and cost estimates) for rehabilitating all reported electrical deficiencies and required upgrades to the electrical system.

08/15-present	**3rd Street Bascule Bridge over Islais Creek, San Francisco, CA -** Senior Electrical Engineer for the design of a replacement bridge that includes new electrical power and control systems which will be integrated with the MUNI light rail traction power and signal system. The project started with a detailed scoping inspection including a rating assessment of the structure, mechanical, and electrical systems.
10/14-07/19	**St. Peters Canal Swing Bridge Replacement, Cape Breton, NS, Canada -** Senior Electrical Engineer for the electrical design of a new center bearing, bobtail swing bridge with electro-hydraulic operating machinery to replace the existing bridge. Responsibilities included design and backchecking of design calculations, plan preparation and detailing, and preparation of contract specifications and construction cost estimates during the project's design phase. Also provided services during construction including review and approval of construction submittals and shop and field inspection .
06/18-present	**Ohio Street Lift Bridge, Buffalo, NY -** Senior Electrical Engineer for the rehabilitation of this bridge that included plans and specifications for replacement of the control system and modifications to the electrical distribution system, as well as replacement of the counterweight ropes, removal of obsolete and abandoned machinery components, and replacement of the deteriorated span drive brakes. The project commenced with a mechanical and electrical inspection of the bridge to determine its status in terms of safety, reliability, and longevity of the mechanical and electrical systems. Presently performing construction support services including review of shop drawing and mechanical installation submittals, shop inspection, field inspection, and oversight of field start-up and commissioning when the new systems are installed.
03/16–present	**Vertical Lift Rehabilitations at Fairport and Spencerport, Fairport and Spencerport, NY -** Senior Electrical Engineer for the rehabilitation of all electrical drive and control components to modernize the systems and provide the appropriate safety interlocks and safeguards required of present code. Will also provide construction support services to include shop drawing review and response to contractor RFIs and NCRs, oversight of field testing, and commissioning of the newly installed electrical operating and control systems.
04/13-10/19	**Fort Madison Toll Bridge, Fort Madison, IA -** Senior Electrical Engineer for the rehabilitation of this double decker swing span bridge over the Mississippi River. The work was divided into multiple phases. The first phase involved the design of a new aerial and submarine power cable installation for the bridge. The new installation was configured as redundant power sources for the bridge. The design of the submarine cable installation included all necessary surveying of the existing submarine cable, routing of the new cable, as well as designing and specifying the cable. The work also included excavation requirements and developing an approved trenching system to satisfy environmental constraints. The design and contract documents were developed based on staged construction to satisfy marine, railroad and highway operations, as well as satisfy Coast Guard and emergency services with respect to bridge operating outages. The engineering also involved construction services such as shop drawing review, installation inspection and testing, and cut over of the completed installation.
08/10–05/11	**West Third Street Vertical Lift Bridge, Cleveland, OH -** Project Engineer during troubleshooting of operational and reliability problems at the newly rehabilitated West Third Street Bridge. Assisted in the preparation of a report documenting the troubleshooting effort and provided recommendations to resolve the problematic behavior of the bridge. Following approval by the client, developed design documents to allow 3rd party bidding of the recommended modifications and upgrades to eliminate the identified problems.

16. Staff Experience:

Firm employed by	APS Engineering & Testing, LLC		
Name	**Sergio Aviles, P.E.**	Years of relevant experience with this employer	9
Title	President / Principal-in-Charge	Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization		B.S. / 2001 / Civil Engineering (Geotechnical)	
Active registration number / state / expiration date		#PE.0033571/ LA / 3-31-24	
Year registered	2007	Discipline	Civil Engineering
			Other Pertinent Training / Certifications • NHI Certification Courses (Design & Implementation of Erosion & Sediment Control, Driven Pile Foundation Inspection and Design, • Drilled Shaft Inspection, Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, and Design of Drilled Shafts Foundation) • Pile Dynamic Analysis (PDA), WEAP, & CAPWAP • Microsoft Visual Studio .NET programming course at LSU, and Microsoft Office Suite. • Work Zone Traffic Control Supervisor, Technician, and Flagger Certifications
Contract role(s) / brief description of responsibilities		Geotechnical Task Manager (**MPR #9**)	

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).
09/19-Present	**Project No. H.004100: I-10 Widening LA 415 to Essen LN** - APS was tasked thru their DOTD geotechnical retainer to drill and sample a total of 52 deep borings starting at the Washington Exit and ending at the LSU lakes. Along with this drilling and sampling, APS will also test the soil for strength and engineering characteristics. A total of eight (8) over the water borings and 44 land borings with approximate 1000 Triaxial Compression, Unconsolidated Drained Or Undrained (UU) and Atterberg Limits. Mr. Aviles was the project manager to the Geotechnical Investigations.
08/16-10/19	**Project No. H.012422: I-10/I-110 Interchange Modification at Terrace Ave** - APS was tasked thru their DOTD geotechnical retainer to drill and sample a total of six (6) deep borings for design of the Terrace Ave. Exit. APS tested the soil for strength and engineering characteristics through the completion of approximately 100 Triaxial Compression, Unconsolidated Drained or Undrained (UU), and Atterberg Limits in the APS Laboratory. Mr. Aviles was the project manager for the Geotechnical Investigations.
11/17-2/18	**Project No. H.013193 US 61 Thompson Creek Bridge Replacement** - APS was tasked thru their DOTD geotechnical retainer to drill and sample a total of eight (8) deep borings for a replacement bridge at US 61 over Thompson Creek. APS tested the soils for strength and engineering characteristics. Mr. Aviles was the project manager for the Geotechnical Investigations.
11/17-2/18	**Project No. H.002273, H.000710, and H.001352 Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge LA 67 and LA 19** - APS was tasked thru their DOTD geotechnical retainer to drill and sample a total of 12 deep borings for new and replacement bridges at Highways 19, 67, and 964. APS tested soils for strength and engineering characteristics. Mr. Aviles was the project manager for the Geotechnical Investigations.
11/19-Present	**Project No. H.001352 and H.002273 Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge LA 67 and LA 19** - APS was selected with the winning team for design of the diversion CMAR project. APS will be the Geotechnical designers for the project. Mr. Aviles is the project manager for the project design team. No TO issue as of today.

03/19-05/19	**Project No. H.001344 US 190 over Bogue Falaya River** - APS was selected with the winning team for the Geotechnical Investigation and Design of a new bridge. A total of 19 deep borings were drilled and tested to develop the foundation recommendations. Mr. Aviles was the project manager for the project design team.
12/19-3/20	**Project No. H.010155 US 90 Railroad Overpass SE of LA 85** - APS was selected with the winning team for the Geotechnical Investigation and Design of a new overpass structure. A total of six (6) deep borings were drilled and tested to develop geotechnical recommendations. Mr. Aviles is the project manager for the project design team.
02/17-10/17	**Project No. H.002861 Earhart Expressway/Causeway Boulevard -** APS was tasked with developing the LRFD factors for both existing structures and the new elevated sections to connect to Causeway Blvd. Per the task order, APS drilled and tested 85 borings to 120 feet near the proposed and existing structures. APS engineering staff provided the designer with pile tip elevations for five (5) elevated ramps to connect Earhart to Causeway Blvd. Also provided were boring logs, information on site conditions, site preparation recommendations, and load length curves. Mr. Aviles was the project manager for the geotechnical investigations and analysis and helped calculate the resistance factors.
07/14-08/14	**Project No. 700-51-0110: US 90 Elevated Portion for the Future I-49 Corridor** - APS performed all preliminary drilling, testing, and CPT for the US 90 and Highway 318 Intersection Project. Included a total of 46 borings and 11 CPTs along with all testing required by LADOTD. Mr. Aviles was the project manager for the geotechnical investigations and analysis as assigned for road and bridge design.
5/12-Present	**Project No. N/A: City of New Orleans Road to Recovery** – project involved construction management, engineering support, technical assistance, and resources needed to meet all established federal and state requirements for the city's roadway reconstruction. Mr. Aviles is the project manager for the Touro Subdivision roadway reconstruction project.
2001-2005	Mr. Aviles served as a staff geotechnical engineer while employed in the LADOTD's Pavement and Geotechnical Section for the following projects which vary to include such work as embankment design, pile design, drilled shaft design, MSE wall design, and construction supervision. Major projects were cost estimated at over one million dollars and included the following: 015-04-0037, LA524-LA123 Route US165; 015-05-0035 LaSalle; 015-07-0044 (Route 165 Cadwell); 276-03-0016 Tangipahoa River Bridge; 3132 Innerloop 427-01-0029; 362-01-0009 Rat Bois; 452-01-0039, I-55 Crossovers; 742-07- 0098, Susek Drive, Bayou Perrie and Sand Beach Bayou; 103-01-0025, Broadway Ave.; 700-40-0127, Cameron Route La. 27; 193-02-0042, Causeway Boulevard Interchange Route I-10; 450-15-0098, Clayton-Greenville; 026-03-0025, Crescent City Connection; 283-08-0143(46), Cross Bayou Bridge; 090-01-0020, Flannery at Florida; 742-17-0008, 40-0116, I-20 Overpass; 451-05-010, I-49 interchange; 455-08-0061, Jackson; 023-06-0043, Jackson-Lincoln. Minor projects were cost estimated at less than one million dollars and included the following: 713-02-01(09,11),713-02-01(20,21,22,23,24),713-06-0(103,104,105,106,108,109,110), 713-07-0103, 713-11-0105,713-15-0101, 713-16-01(02,03,04), 713-19-0(101,102,103,104), 713-19-0106, 713-21-0(119,120), 713-22-0(116,118),713-25-0102, 713-26-0102, 713-29-0101, 713-30-0120, 713-31-0111,713-35-0116, 713-35-0117,713-35-0119, 713-37-0(129,131,132), 713-40-0105, 713-42-0125, 713-43-0(104,105,106), 713-43-0107(108), 713-43-0109(10), 713-49-0116(18), 713-52-0104, 713-56-0102, 713-56-0107,713-57-0102,713-58-0112A,

16. Staff Experience:

Firm employed by	APS Engineering & Testing, LLC		
Name	**Sairam Eddanapudi, M.E., P.E.**	Years of relevant experience with this employer	10
Title	Chief Engineer	Years of relevant experience with employer(s)	8
Degree(s) / Years / Specialization	M.E. / 2002 / Civil Engineering B.E. / 1999 / Civil Engineering		
Active registration number / state / expiration date	#PE.0035129 / LA / 03-31-24		
Year registered	2008	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities	Geotechnical QA Review (**MPR #9**)		

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).
09/19-Present	**Project No. H.004100: I-10 Widening LA 415 to Essen LN** – APS was tasked thru their DOTD geotechnical retainer to drill and sample a total of 52 deep borings starting at the Washington Exit and ending at the LSU lakes. APS will also test the soils for strength and engineering characteristics. Includes eight (8) water borings and 44 land borings, along with approximately 1,000 Triaxial Compression, Unconsolidated Drained or Undrained (UU) and Atterberg Limits tests. Mr. Sai serves as Project QA for the Geotechnical Investigations.
08/16-10/19	**Project No. H.012422: I-110 Interchange Modification at Terrace Ave.** - APS was tasked thru their DOTD geotechnical retainer to drill and sample a total of six (6) deep borings for design of the Terrace Ave. exit. APS tested the soil for strength and engineering characteristics through the completion of approximately 100 Triaxial Compression, Unconsolidated Drained or Undrained (UU) and Atterberg Limits. Mr. Sai served as Project QA for the Geotechnical Investigations.
11/17-2/18	**Project No. H.013193: US 61 Thompson Creek Bridge Replacement** - APS was tasked thru their DOTD geotechnical retainer to drill and sample eight (8) deep borings for the replacement of a bridge at US 61 over Thompson Creek. APS tested soils for strength and engineering characteristics. Mr. Sai served as Project QA for the Geotechnical Investigations.
03/19-05/19	**Project No. H.001344: US 190 over Bogue Falaya River** - APS was selected as part of the winning team to complete a Geotechnical Investigation and Design for the new bridge. A total of 19 deep borings were drilled and tested for the foundation recommendation. Mr. Sai was the Senior Design Engineer for the project design team.
12/19-3/20	**Project No. H.010155: US 90 Railroad Overpass SE of LA 85** - APS was selected as part of the winning team to perform a Geotechnical Investigation and Design for the new overpass. A total of six (6) deep borings were drilled and tested to gather data for the geotechnical recommendations. Mr. Sai was the Senior Design Engineer for the project design team.
02/17-10/17	**Project No. H.002861: Earhart Expressway/Causeway Boulevard -** APS was tasked with developing the LRFD factors for both existing structures and the new elevated sections to connect to Causeway Blvd. Per the task order, APS drilled and tested 85 borings to 120 feet near the proposed and existing structures. APS engineering staff provided designer with pile tip elevations for five elevated ramps to connect Earhart to Causeway Blvd. Mr. Sai was the Senior Design Engineer for the project design team responsible for performing the geotechnical investigations and analysis needed to calculate the resistance factors.

16. Staff Experience:

Firm employed by	APS Engineering & Testing, LLC		
Name	**Surendra Raj Pathak, M.S., P.E.**	Years of relevant experience with this employer	9
Title	Staff Engineer	Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization		M.S. / 2013 / Civil Engineering; M.S. / 2007 / Civil Engineering B.E. / 1998 / Civil Engineering	
Active registration number / state / expiration date		#PE.0043487 / LA / 09-30-23	
Year registered	2019	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		Staff Geotechnical 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).
11/19-Present	**Project No. H.001352 and H.002273: Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge LA 67 and LA 19** - APS was selected as part of the winning team for design of the diversion CMAR project. APS is the geotechnical designer for the project. Mr. Surendra is a Design Engineer for the project design team.
03/19-05/19	**Project No. H.001344: US 190 over Bogue Falaya River** - APS was selected as part of the winning team to perform a geotechnical investigation and design of the proposed new bridge. A total of 19 deep borings were drilled and tested to develop the foundation recommendations. Mr. Surendra was a Design Engineer for the project design team.
12/19-3/20	**Project No. H.010155: US 90 Railroad Overpass SE of LA 85** - APS was selected as part of the winning team to perform the geotechnical investigation and design for a new overpass structure. A total of six (6) deep borings were drilled and tested to acquire the data needed to develop geotechnical recommendations. Mr. Surendra was a Design Engineer for the project design team.
07/14-08/14	**Project No. 700-51-0110: US 90 Elevated Portion for Future I-49 Corridor** - APS performed preliminary drilling, testing, and CPT for the US 90 and Hwy. 318 Intersection. Work included 46 borings and 11 CPTs along with all testing required by the LADOTD. Mr. Surendra served as staff engineer for the geotechnical field investigations and analysis as assigned for road and bridge design.
03/13-06/13	**Wax Road Bridge Replacement (Off-system), Livingston Parish, LA** - The scope of work included the drilling of two (2) soil borings (one at each bridge end) to a depth of 100 feet, laboratory testing to determine relevant soil properties, engineering analysis and a report that provided boring logs, information on site conditions, site preparation recommendations, and load-length curves. Load-length curves were in LRFD format. Mr. Surendra served as staff engineer for the geotechnical field investigation and analysis.
11/17-2/18	**Project No. H.013193: US 61 Thompson Creek Bridge Replacement** - APS was tasked thru their DOTD geotechnical retainer to drill and sample a total of eight (8) deep borings for a replacement bridge at US 61 over Thompson Creek. APS tested retrieved soil samples for strength and engineering characteristics. Mr. Surendra served in a QC capacity during the geotechnical investigation.
09/19-Present	**Project No. H.004100: I-10 Widening LA 415 to Essen LN -** APS was tasked thru their DOTD geotechnical retainer to drill and sample 52 deep borings starting at the Washington Exit and ending at the LSU lakes. APS also tested soil samples for strength and engineering characteristics. Eight (8) water borings and 44 land borings were completed along with approximately 1,000 Triaxial Compression, Unconsolidated Drained or Undrained (UU) and Atterberg Limits. Mr. Surendra served in a QC capacity for the geotechnical work.

16. Staff Experience:

Firm employed by	Moffatt & Nichol		
Name	**Chace Hulon, PE, ADCI**	Years of experience with this firm/employer	8
Title	Program Manager – NBIS Team Leader	Years of experience with other firm(s)/employer(s)	9
Degree(s) / Years / Specialization		B.S. / 2005 / Civil Engineering	
Active registration number / state / expiration date		#PE.0039701 / LA / 09-30-23	
Year registered	2009	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA / NHI Course #130055, Safety Inspection of In-Service Bridges FHWA / NHI Course #130053, Bridge Inspection Refresher FHWA / NHI Course #130091, Underwater Bridge Inspection FHWA / NHI Course #13078, Fracture Critical Inspection Techniques for Steel Bridges ADCI Dive Certified SPRAT Rope Access, Level II
Contract role(s) / brief description of responsibilities		NBIS Team Leader/ ADCI-certified Dive Supervisor / SPRAT Rope Access Technician	

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).
11/19 – Present	**LADOTD IDIQ for In-Depth Inspection of Complex Bridges, Statewide Louisiana -** MN Project Manager and Team Leader for one of the current five-year retainer contracts as a major subconsultant to HNTB, contracted to perform in-depth bridge inspections on complex, signature, long-span bridges throughout Louisiana. Performed the inspections of both cable-stayed bridges in Louisiana (Audubon and Luling) with rope access techniques to inspect a total of 208 cables between the two bridges, their Gensui Dampers, and anchorages. Performed the inspection of the I-10 Horace Wilkinson Bridge completely utilizing rope access techniques and rolling lane closures to greatly minimize traffic impacts. Performed a supplemental inspection of the GNO Cantilever Truss Bridges in New Orleans utilizing rope access techniques. Performed a fracture critical inspection of the Green Bridge, a steel tied arch in New Orleans utilizing rope access and UAS access techniques. Performed the inspection of the I-10 Bridge over the Calcasieu River in Lake Charles utilizing rope access on FCM's and UAS access techniques on columns. Hands-on management and implementation of the QC review plan is vital to the continued success of this project.
1/20 – Present	**LADOTD IDIQ for Statewide In-Depth Bridge Inspection of Complex Structures, Louisiana** - MN Project Manager and Team Leader for one of the current five-year retainer contracts as a major subconsultant to Gresham Smith, contracted to perform in-depth bridge inspections on complex, movable, long-span, and precast segmental box girder bridges throughout Louisiana. Performed and lead the structural, mechanical, and electrical inspections of six (6) movable bridges utilizing detailed, nondestructive and laboratory testing methods with hand sketches. Hands-on management and implementation of the QC review plan was vital to the success of this project.
09/14 – Present	**LADOTD IDIQ for Underwater Bridge Inspection, Statewide Louisiana -** Project Director and Team Leader for the third cycle of contracts in which we have performed 1,375 underwater NBIS bridge inspections statewide. Bridge types included movable bridges, long-span bridges with caissons and deep foundations, timber bridges with multiple bents in the water, culverts and multi-span bridges up to 14 miles in length. Assisted DOTD with several emergency response requests within hours utilizing local team members.
02/21-Present	**LADOTD Underwater Bridge Inspections (2020-2025)** - Task 1, Statewide Louisiana. Project Principal for routine underwater inspections of 75 bridges including major bridges over large waterways with deep foundations and dynamic channel conditions. All

	diving inspections were augmented with acoustic imaging technology for bridges over large waterways with high-risk environmental conditions. Hydrographic surveys were performed using the HydroLite-TM and MatLab for accurate and repeatable channel soundings at these bridge sites.

16. Staff Experience:

Firm employed by	Moffatt & Nichol		
Name	**Mike Russell, EIT**	Years of experience with this firm/employer	1
Title	Program Manager – NBIS Team Leader	Years of experience with other firm(s)/employer(s)	11
Degree(s) / Years / Specialization	B.S. / 2015 / Civil Engineering		
Active registration number / state / expiration date	Engineer-in-Training: #35255 / TN		
Year registered: N/A	Discipline	Civil and Structural Engineering **Other Pertinent Training / Certifications** FHWA / NHI Course #130055, Safety Inspection of In-Service Bridges FHWA / NHI Course #130087, Inspection & Maintenance of Ancillary Highway Structures SPRAT Rope Access, Level III FAA Remote Drone Pilot	
Contract role(s) / brief description of responsibilities	NBIS Team Leader/ SPRAT Rope Access Technician		

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).
08/21 – Present	**LADOTD IDIQ for In-Depth Inspection of Complex Bridges, Statewide, Louisiana -** Team Member, Drone Operator, and Rope Access Supervisor for one of the current five-year retainer contracts (2019-2024) as a major subconsultant to HNTB, contracted to perform in-depth bridge inspections on complex, signature, long-span bridges throughout Louisiana. Performed the inspection of the I-10 Bridge over the Calcasieu River in Lake Charles utilizing rope access on fracture critical members and UAS drone access techniques on columns, secondary members and connections. Responsible for inspecting the steel substructure units utilizing fall protection techniques and a work boat platform with a rope access safety management plan. Responsible for inspecting the lower chord of the main span steel arched through truss utilizing fall protection and rope access techniques. Responsible for working together with other supervisors and team leaders on site to communicate the hazards and mitigation techniques for safe operations and rescue pre-plans. Documented field notes and sketches utilizing traditional methods amenable to the project team leader for standardized report processing. Organized electronic files per the quality management plan and reviewed the draft report for consistency and accuracy.
04/19 – Present	**LADOTD IDIQ for Statewide Ancillary Sign Inventory and Inspection, Louisiana** - Team Leader and Rope Access Supervisor for both five-year retainer contract to perform over 1700 sign truss inspections throughout Louisiana, including the Orleans District along this corridor. Lead the development of the new Sign Truss Inspection Program by implementing policies and standard operating procedures. Managed and utilized the fall protection safety program with rope access techniques and rescue plans. Lead the development of an application for an internal tablet-based inventory management system. Non-destructive testing was performed on all anchor rods at all cantilever structures, base plates with excessive standoff distances, and where deficiencies were observed at steel and aluminum welds. Managed the QC report review process and the QA field and office review process. Managed and planned the Temporary Traffic Control plans and setups for lane closures throughout the state along with all of the District traffic engineers. Analyzed altered load paths.
1/22 – Present	**LADOTD In-Depth Inspections of Complex Bridges** - Audubon Bridge, LA | Rope Access supervisor and NBIS Inspector Planning for the in-depth NBIS routine and fracture critical inspection of the Audubon Bridge.

16. Staff Experience:

Firm employed by	Moffatt & Nichol		
Name	**Steven Armstrong, PE, ADCI**	Years of experience with this firm/employer	8
Title	NBIS Team Leader	Years of experience with other firm(s)/employer(s)	2
Degree(s) / Years / Specialization		M.S. / 2021 / Civil Engineering B.S. / 2015 / Civil and Environmental Engineering	
Active registration number / state / expiration date		#PE.0044405 / LA / 09-30-22	
Year registered	2020	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA / NHI Course #130055, Safety Inspection of In-Service Bridges FHWA / NHI Course #130055, Bridge Inspection Refresher FHWA / NHI Course #130091, Underwater Bridge Inspection FHWA / NHI Course #13078, Fracture Critical Inspection Techniques for Steel Bridges ADCI Dive Certified SPRAT Rope Access
Contract role(s) / brief description of responsibilities		NBIS Team Leader / FAA Remote Drone Pilot / SPRAT Rope Access Technician / ADCI-certified Diver	

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).
11/19 – Present	**LADOTD IDIQ for Statewide In-Depth Bridge Inspection, Louisiana -** Team Member for one of the current five-year retainer contracts as a major subconsultant to HNTB, contracted to perform in-depth bridge inspections on complex, signature, long-span bridges throughout Louisiana. Performed the inspections of the Audubon cable-stayed bridge with rope access techniques to inspect a total of 136 cables, the HDPE protection, and anchorages. Performed the inspection of the I-10 Horace Wilkinson Bridge (New Bridge) completely utilizing rope access techniques and rolling lane closures to greatly minimize traffic impacts. Performed draft inputs and consolidated notes from multiple teams to present proper data consistently throughout the report.
01/20 – Present	**LADOTD IDIQ for Statewide In-Depth Bridge Inspection of Complex Structures, Louisiana -** Team Member for one of the current five-year retainer contracts as a major subconsultant to Gresham Smith, contracted to perform in-depth bridge inspections on complex, movable, long-span, and precast segmental box girder bridges throughout Louisiana. Performed the structural inspections of six (6) movable bridges along with the M&E team. Utilized nondestructive UT methods to accurately document section loss in fracture critical members. Performed draft inputs and consolidated notes from multiple teams to present proper data consistently throughout the report.
09/14 – Present	**LADOTD IDIQ for Underwater Bridge Inspection, Statewide, Louisiana -** NBIS Team Leader for the current five-year retainer contract to perform Levels I, II, and III underwater bridge inspections in accordance with NBIS and AASHTO Manual for Bridge Element Inspection. Responsible for leading underwater inspection teams to complete field work, inspection reports, and quality control reviews. Bridge types inspected consisted of movable bridges, truss bridges, timber stringer bridges, cable-stayed bridges, and single and multi-span girder bridges up to fourteen miles in length. Site conditions included salt and fresh waters, with varying levels of current, having low to no visibility. UAI techniques were utilized to locate structural deficiencies and identify bottom conditions.

16. Staff Experience:

Firm employed by	Moffatt & Nichol		
Name	**Jeffrey Gazarek, ADCI**	Years of experience with this firm/employer	6
Title	NBIS Team Leader and Safety Officer	Years of experience with other firm(s)/employer(s)	10
Degree(s) / Years / Specialization	Commercial Diving with Concentration in Subsea Inspection / 2005 / Divers Institute of Technology		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	N/A **Other Pertinent Training / Certifications** FHWA / NHI Course #130055, Safety Inspection of In-Service Bridges FHWA / NHI Course #130053, Bridge Inspection Refresher FHWA / NHI Course #130091, Underwater Bridge Inspection ADCI Dive Certified SPRAT Rope Access
Contract role(s) / brief description of responsibilities	NBIS Team Leader / Safety Officer / Equipment Manager / SPRAT Rope Access Technician / ADCI-certified Diver		

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).
09/14 – Present	**LADOTD IDIQ for Underwater Bridge Inspection, Statewide Louisiana -** NBIS Team Leader for the third cycle of contracts in which we have performed 1,375 underwater bridge inspections statewide. Responsible for leading dive operations for underwater inspection teams to complete field work, writing inspection reports, and performing quality control reviews. Bridge types inspected consisted of movable bridges, truss bridges, timber stringer bridges, cable-stayed bridges, and single and multi-span girder bridges up to fourteen miles in length. Site conditions included salt and fresh waters, with varying levels of current, having low to no visibility. UAI techniques were utilized to locate structural deficiencies and identify bottom conditions.
04/16 – Present	**LADOTD IDIQ for Statewide Ancillary Sign Inventory and Inspection, Louisiana -** Team Leader and Rope Access Supervisor for both five-year retainer contracts. Performed ~40% of 1700 sign truss inspections throughout Louisiana. Utilized fall protection and rope access techniques with rescue plan development. Performed non-destructive testing on all anchor rods at all cantilever structures, base plates with excessive standoff distances, and where deficiencies or impacts were observed at steel and aluminum welds. Drafted and reviewed inspection reports per the quality management plan. Monitored the TTC lane closures and reviewed the TTC plans for over 10 lane closures throughout the state.
11/14 – Present	**MDOT 2014 & 2021 Underwater Bridge Inspection Contract, Districts 1 & 2, Mississippi -** NBIS Bridge Inspector performed underwater inspections of 12 bridges in accordance with NBIS and MDOT PONTIS Inspection Manual. Bridges inspected were constructed of concrete, steel, and timber, and high-resolution scanning sonar was used on selected bridge elements. Responsible for pre-inspection planning, scheduling, field work, performing NDT and soundings, diving operations, drafting reports, sketches, and repair recommendations.
11/19 – Present	**LADOTD IDIQ for Statewide In-Depth Bridge Inspection, Louisiana -** Team Member for one of the current five-year retainer contracts as a major subconsultant to HNTB, contracted to perform in-depth bridge inspections on complex, signature, long-span bridges throughout Louisiana. Performed the inspection of the I-10 Horace Wilkinson Bridge (New Bridge) completely utilizing rope access techniques and rolling lane closures to greatly minimize traffic impacts.

16. Staff Experience:

Firm employed by	Moffatt & Nichol		
Name	**Joshua Martinez, PE, ADCI**	Years of experience with this firm/employer	7
Title	NBIS Team Leader and Diver	Years of experience with other firm(s)/employer(s)	5
Degree(s) / Years / Specialization		MCE / 2013 / Structural Engineering BCE / 2009 / Structural Engineering	
Active registration number / state / expiration date		#PE.0042085 / LA / 3-31-22	
Year registered	2013	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA / NHI Course #130055, Safety Inspection of In-Service Bridges FHWA / NHI Course #130055, Bridge Inspection Refresher FHWA / NHI Course #130091, Underwater Bridge Inspection FHWA / NHI Course #13078, Fracture Critical Inspection Techniques for Steel Bridges ADCI Dive Certified
Contract role(s) / brief description of responsibilities		NBIS Team Leader / ADCI-certified Diver	

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).
06/17 – Present	**LADOTD IDIQ for NBIS Underwater Bridge Inspection Retainer Contract, Statewide -** NBIS Team Leader for the current five-year retainer contract to perform Levels I, II, and III underwater bridge inspections in accordance with NBIS and AASHTO Manual for Bridge Element Inspection. Site conditions included salt and fresh waters, with varying levels of current, having low to no visibility. UAI techniques were utilized to locate structural deficiencies and identify bottom conditions. Responsible for leading underwater inspection teams to complete field work, inspection reports, and quality control reviews.
09/13 – 06/17	**LADOTD 2013 NBIS Underwater Bridge Inspection Retainer Contract, Statewide -** NBIS Inspector for the previous five-year retainer contract to perform Levels I, II, and III underwater bridge inspections in accordance with NBIS and AASHTO Manual for Bridge Element Inspection. Responsible for underwater inspection field work, inspection reports, and quality control reviews. UAI techniques were utilized to locate structural deficiencies, identify potential undermining, observe the limits of scour, and document the limits of riprap installations.
03/17 – Current	**Statewide Topside Inspection of Bridges for the North Carolina Department of Transportation, North Carolina.** NBIS Team Leader responsible for topside inspection of bridges under two, consecutive, multi-year, on-call contracts. Inspected single and multi-span bridges as well as concrete, steel, and timber. Mr. Martinez was responsible for rating the overall bridge condition and determining critical maintenance items per state requirements. He also developed and generated reports rating to the element base level. Mr. Martinez familiarized himself with several inspection vehicles including a bucket truck, snooper, and under-bridge platform. He served as engineer reviewer for reports to ensure accuracy and proper rating per National Highway Institute (NHI) guidance.

16. Staff Experience:

Firm employed by	Urban Systems, Inc.		
Name	**Alison Michel, P.E., PTOE, PTP, RSP1**	Years of relevant experience with this employer	20
Title	President / Transportation Engineer	Years of relevant experience with other employer(s)	3
Degree(s) / Years / Specialization		B.S. / 1997 / Civil Engineering	
Active registration number / state / expiration date		#PE.0030261 / LA / 3-31-23	
Year registered	2002	Discipline	Civil Engineering **Other Pertinent Training / Certifications** Professional Traffic Operations Engineer (#626; expires 11/20/2023) Professional Transportation Planner (#115; expires 12/21/2024) Road Safety Professional Traffic Engineering Analysis Process & Report, Modules 1, 2 and 3 (6/4/18, 6/11/18, 9/10/18)
Contract role(s) / brief description of responsibilities		Senior Transportation Engineer / TMP Lead	

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).
01/17 - 06/19	**France Road North Widening -** Over time, France Rd. between Gentilly Blvd. and Hayne Blvd. had deteriorated pavement and was in need of widening and drainage repairs. Adjacent to the west side of the roadway was a concrete floodwall that limited Right Of Way and the ability to maintain two-way traffic throughout construction. Ms. Michel developed site specific traffic control plans implementing a one-way system and detouring traffic that would normally traverse in the opposite direction of the allowed movement. The plans were designed in accordance with the latest version of the MUTCD and the City of New Orleans traffic control standards.
03/11 – 05/13	**Huey P. Long Bridge Widening - (Westbank and Eastbank Approaches and Main Bridge Deck Widening), Jefferson Parish, LA** - The contractor for the Huey P. Long Widening in Jefferson Parish, LA brought on USI about half-way into construction to improve the flow of traffic during required closures. Ms. Michel prepared traffic control devices plans (TCDP) for multiple phases of construction. The TCDPs also included the design of a traffic signal plan for the installation of temporary signal heads to control lane shifts.
09/09 – 06/12	**LA39/Judge Perez Drive Corridor, St. Bernard Parish Metropolitan Transportation Plan Refinement, St. Bernard Parish, LA** - Ms. Michel was the project manager on the St. Bernard Parish, LA Metropolitan Transportation Plan Refinement, specifically for this task order, a Stage "0" Feasibility Study, LA 39 /Judge Perez Drive at LA 47/Paris Road, Chalmette, LA. The feasibility of implementing proposed improvements including a westbound right turn lane and an additional southbound left turn lane at the intersection of LA 39 (Judge Perez Drive) and LA 47 (Paris Road) was evaluated.
01/14 – 08/19	**US 90 (I-49 South) Albertson's Parkway to Ambassador Caffery Design-Build, Lafayette Parish, LA -** Ms. Michel was a member of the key personnel for this design-build project as the traffic engineer. The project included converting US 90 to a controlled access facility by converting at-grade intersections to an interchange. The bridge structure had to span the intersection and a railroad. She supervised the design and analysis and performed QA-QC for temporary and permanent signal plans, permanent signage plans, temporary traffic control plans and the transportation management plan. Signal plans were prepared using the DOTDs latest TSI format. Analysis included developing design hour volumes for the design year and modeling signals in Synchro. Phasing and timing were developed for both permanent and temporary signal operation.

16. Staff Experience:

Firm employed by	Urban Systems, Inc.		
Name	**Nicole H. Stewart, P.E., PTOE**	Years of relevant experience with this employer	15
Title	VP / Transportation Engineer	Years of relevant experience with other employer(s)	1.5
Degree(s) / Years / Specialization		B.S. / 2004 / Civil Engineering; B.S. / 2004 / Physics	
Active registration number / state / expiration date		#PE.0034750 / LA / 9-30-23	
Year registered	2009	Discipline	Civil Engineering **Other Pertinent Training / Certifications** Professional Traffic Operations Engineer (#2923; expires 8/2023) Traffic Engineering Analysis Process & Report, Modules 1, 2 and 3 (1/14/19, 1/14/19, 1/15/19)
Contract role(s) / brief description of responsibilities		Transportation 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).
10/17 – 05/19	**TMP for I-10: West of 108 to I-210 Interchange: Rubblize and Overlay -** As the lead engineer for this Traffic Management Plan, Ms. Stewart was responsible for the preparation of the safety analysis. She conducted queue analysis to identify when lane closures would be permitted, identified the construction impact area and reviewed crash data for more than 350 collisions. She conducted the safety analysis per the guidelines set forth by LADOTD in *Guidelines for Crash Data Analysis.* Ms. Stewart identified trends and calculated crash rates and determined that the section of I-10 that was going to be rubblized had a crash rate that was higher than the statewide average.
02/15 – 06/16	**Bridge Preventative Maintenance District and Port Allen, Multiple Parishes, LA -** Ms. Stewart was the principal in charge for the development of Traffic Management Plans (TMP) for bridge replacements and repairs at various locations in Louisiana. Included the development of various levels of TMP's based on LADOTD EDSM guidelines. Tasks included capacity analysis, safety analysis, detour analysis and development of proposed mitigations where applicable. A Level 3 TMP was prepared for reconstruction of the LA 1 bridge over the Intracoastal Waterway. For this TMP, detailed work zone impact management strategies were developed to help minimize the project's impact on mobility.
10/17 – 12/17	**TMP for US 90 Bridge Maintenance over I-10 Ramps at LockMoor, Calcasieu Parish, LA** - Ms. Stewart used the LADOTD EDSM guidelines to prepare key components of the traffic management plan (TMP) for proposed bridge repairs on US 90 from PPG Road to the I-10 entrance ramp in Lake Charles, LA. Tasks included the preparation of collision diagrams, conducting safety analysis, detour analysis and developing proposed mitigations where applicable.
04/10 – 06/11	**I-10 Crossing – Irish Bayou Bridge Interstate 10 New Orleans East, Orleans Parish, LA** - Ms. Stewart was the supervising engineer for the design of traffic control devices plans for the I-10 Highway Crossing Levee Enlargement project at Irish Bayou Road in New Orleans East. The plans included multiple and phased road closures of a six (6) lane section of Interstate 10, including nighttime closures.
10/15 – Current	**MacArthur Interchange Completion Phase II TMP -** The design team was led by Ms. Stewart for the preliminary traffic signal design and the Traffic Management Plan (TMP) for proposed interchange modifications on US 90 (Westbank Expressway). Tasks for this work include conducting capacity analysis, safety analysis, detour analysis and developing proposed mitigations where applicable. Ms. Stewart was responsible for the QA/QC for this stage of the project. Final design for this project began in September 2019.

16. Staff Experience:

Firm employed by	Urban Systems, Inc.		
Name	**Alben P. Cooper, PE, PTOE**	Years of relevant experience with this employer	15
Title	Associate / Transportation Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S. / 2006 / Civil Engineering	
Active registration number / state / expiration date		#PE.0036291 / LA / 9-30-23	
Year registered		Discipline	Civil Engineering **Other Pertinent Training / Certifications** Professional Traffic Operations Engineer (#3206; expires 9/2023) Traffic Engineering Analysis Process & Report, Modules 1, 2 and 3 (2/25/19, 2/25/19, 2/26/19)
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).
12/20 – Present	**US 190 at Northshore and Camp Villere Roundabouts -** As the project manager for the Traffic Engineering portion, Mr. Cooper will be overseeing the design of permanent striping & signage plans. He will also manage the design of temporary traffic signalization that will be required during the multi-phases of roundabout construction. A level 2 Traffic Management Plan (TMP) will be prepared. Mr. Cooper will coordinate with the prime-consultant, St Tammany Parish, LADOTD and FHWA as needed.
04/10 – 09/11	**Corps of Engineers LPV 109.02b I-10 Crossing - Irish Bayou Bridge, New Orleans** - Traffic control devices plans were designed by Mr. Cooper for the I-10 Highway Crossing Levee Enlargement project at Irish Bayou Road in New Orleans East. The plans included multiple and phased road closures of a six (6) lane section of Interstate 10 including nighttime closures.
12/14 – 02/15	**Rampart Street to St Claude Ave Streetcar TCDP** - This project included the preparation of traffic control device plans (TCDP) for the installation of a streetcar line on Rampart Street in New Orleans, LA. Mr. Cooper was the lead designer for this project. Mr. Cooper regularly coordinated with the contractor to ensure the plans were implemented correctly and made changes to the plan when required.
11/13 – 08/16	**MacArthur Interchange** - As a project team member, Mr. Cooper aided in the preparation of traffic control device plans (TCDP), permanent striping/signage plans and traffic signal plans for the addition of a new interchange on the Westbank Expressway at MacArthur Drive in New Orleans, LA. Mr. Cooper provided technical assistance in the development of preliminary and final plan sets. He played a vital role in the Quality Assurance/Quality Control (QA/QC) process.

16. Staff Experience:

Firm employed by	Bridge Diagnostics, Inc. (BDI)		
Name	**Brett Commander, PE**	Years of relevant experience with this employer	32
Title	Principal Engineer	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization		M.S. / 1989 / Structural Engineering B.S. / 1986 / Civil Engineering	
Active registration number / state / expiration date		#PE.0035864 / LA / 3-31-2023	
Year registered	2010	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		Principal Engineer – QA/QC	

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).
11/12–present	**US-90 Bayou Ramos Bridge Load Testing And Monitoring, LA –** Due to unexpected cracking in PS concrete AASHTO beams, BDI performed load tests and load ratings to determine cause and effect of cracks in continuous multi-span PS/C girders. After the completion of the initial evaluation, monitoring systems were installed on the structure to monitor the state of two sections of the structure. Structural Health Monitoring is ongoing. As technical advisor/principal engineer, Mr. Commander oversaw live-load and thermal load monitoring that was performed during and after repairs to evaluate the performance of retrofit.
11/04–12/04 & 11/11-present	**Bonnet Carre Spillway Load Testing and Monitoring** – BDI used its Integrated Approach to determine if a 500-ton load could cross the bridge safely. Based on provided configurations, BDI determined the "superload" could cross with stresses below its serviceability limit. BDI then installed an event-based monitoring system that helps LADOTD capture weigh-in-motion data, strains induced by heavy loads, and photos of heavy load. Structural Health Monitoring is ongoing. Mr. Commander was the principal engineer on this project in its many phases.
07/18–09/18	**Collier County Bridge Load Testing, FL –** BDI performed diagnostic load tests on the FDOT Bridge 034190 which spans over a small drainage ditch in a residential area in Immokalee, Florida. The overall goal of these tests was to better understand the structure's transverse distribution, provide refined load ratings, and reevaluate the current posting levels. Load tests were performed, and the collected structural responses were used to generate a field-verified finite-element model (FEM). This field-verified FEM was then used to compute refined load ratings. Mr. Commander served as principal engineer for this project.
07/19–12/19	**St. Claude Lift Bridge Balance and Operation Testing, LA** – Mr. Commander was project principal engineer responsible for counterweight/span balance and friction calculations as well as structural performance evaluation on a double heal trunnion Strauss Bascule Bridge. Strain gauge testing and various instrumentation tasks were performed during the investigation of a bearing failure on the span to counterweight link.
06/18–03/19	**Phinney Avenue Bridge Load Rating and NDE, WA –** BDI was contracted by SDOT to perform diagnostic load tests and structural reinforcement investigation on the Phinney Ave. bridge that spans over North 57th Street in Seattle, WA. Instrumentation, load tests, and a reinforcement investigation were performed with the overall goal of these tests was to better understand the structures' load distribution and reinforcement details, and in turn provide refined load ratings. Mr. Commander served as the principal engineer for this project.
08/18–12/20	**Live Load Testing and Field-Verified Load Rating of 16 Bridges, VA** – BDI provided load testing and field-verified load rating of 16 structures in the Fredericksburg and Richmond Districts of VDOT. BDI was responsible for the design of load testing requirements, development of instrumentation plans, execution of field work and load testing, data analysis, finite element (FE) model creation and calibration, and eventual load rating per VDOT and AASHTO requirements. Mr. Commander served as principal engineer for this project.
07/09 – 11/12	**Load Testing and Rating of 35 Rhode Island Bridges, RI** – BDI performed field testing on 35 bridges located throughout the state of Rhode Island. The scope of work varied with each structure, which included culverts, stone and concrete arches, masonry arches,

	reinforced concrete slabs, prestress beam/slabs, adjacent box beams, fracture critical steel bridges, R/C slabs, and T-Beams. For all of the structures, BDI collected and reviewed the strain, displacement, and NDE (GPR) data and provided it directly to AECOM for evaluation. For select bridges, BDI also used the field data to calibrate finite element models and develop accurate load ratings using the AASHTO evaluation guide. Many of these relatively small structures had complex geometry and load distribution patterns that could only be determined through a review of field response data and the field verified modeling. Mr. Commander served as principal engineer on this project.

16. Staff Experience:

Firm employed by	Bridge Diagnostics, Inc. (BDI)		
Name	**Brice Carpenter, PE**	Years of relevant experience with this employer	13
Title	Senior Engineer	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization		M.S. / 2009 / Civil/Structural Engineering B.S. / 2007 Civil Engineering	
Active registration number / state / expiration date		#PE.0039341 / LA / 3-31-2023	
Year registered	2014	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		Senior Engineer – Testing and Monitoring	

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).
11/12–present	**US-90 Bayou Ramos Bridge Load Testing & Monitoring, LA –** Due to unexpected cracking in PS concrete AASHTO beams, BDI performed load tests and load ratings to determine cause and effect of cracks in continuous multi-span PS/C girders. After the completion of the initial evaluation, monitoring systems were installed on the structure to monitor the state of two sections of structure. Structural Health Monitoring is ongoing. As lead analysis, Mr. Carpenter performed field-verified load ratings and acts as the project engineer for monitoring system maintenance and troubleshooting.
02/16–present	**Bonnet Carre Spillway Load Testing and Monitoring** – In 2004, BDI used its Integrated Approach to determine if a 500-ton load could cross the bridge safely. Based on provided configurations, BDI determined the "superload" could cross with stresses below its serviceability limit. In 2011, BDI installed an event-based monitoring system that helps LADOTD capture weigh-in-motion data, strains induced by heavy loads, and photos of heavy load. Mr. Carpenter served as project engineer for monitoring support to LADOTD.
08/16–05/17	**Live Load Testing of Eight Culverts and Testing, LA** – BDI worked in coordination with LSU, LTRC, and LaDOTD to perform comprehensive diagnostic live-load tests that allowed these structures to be better evaluated based on induced live-load effects, observed distribution, and general fixity at the culvert walls. BDI manufactured the structural testing system used for this testing based on LSU's specifications and needs. Mr. Carpenter served as a project and testing engineer on this project.
07/18–09/18	**Collier County Bridge Load Testing, FL –** BDI performed diagnostic load tests on the FDOT Bridge 034190 which spans over a small drainage ditch in a residential area in Immokalee, Florida. The overall goal of these tests was to better understand the structure's transverse distribution, provide refined load ratings, and reevaluate the current posting levels. Load tests were performed, and the collected structural responses were used to generate a field-verified finite-element model (FEM). This field-verified FEM was then used to compute refined load ratings. Mr. Carpenter served as field testing engineer, and lead analysis/load rating engineer for this project.
06/18–03/19	**Phinney Avenue Bridge Load Rating and NDE, WA –** BDI was contracted by SDOT to perform diagnostic load tests and structural reinforcement investigation on the Phinney Ave bridge that spans over North 57th St in Seattle, WA. Instrumentation, load tests, and reinforcement investigation were performed with the overall goal of these tests was to better understand the structures' load distribution, reinforcement details, and in turn provide refined load ratings. Mr. Carpenter served as the lead analysis and load rating engineer for this project.
08/18–12/20	**Live Load Testing and Field-Verified Load Rating of 16 Bridges, VA** – BDI provided load testing and field-verified load rating of 16 structures in the Fredericksburg and Richmond districts of VDOT. BDI was responsible for the design of load testing requirements, development of instrumentation plans, execution of field work and load testing, data analysis, finite element (FE) model creation and calibration, and eventual load rating per VDOT and AASHTO requirements. Mr. Carpenter served as the lead analysis and load rating engineer for this project.

07/19–12/19	**St. Claude Lift Bridge Balance and Operation Testing, LA** – Mr. Carpenter was the project manager and field/analysis engineer responsible for counterweight/span balance and friction calculations, and also structural performance evaluation on a double heal trunnion Strauss Bascule Bridge. Strain gauge testing and various instrumentation tasks were performed during investigation of a bearing failure on the span to counterweight link.
07/09 – 11/12	**Load Testing and Rating of 35 Rhode Island Bridges, RI** – BDI performed field testing on 35 bridges located throughout the state of Rhode Island. The scope of work varied with each structure, which included culverts, stone and concrete arches, masonry arches, reinforced concrete slabs, prestress beam/slabs, adjacent box beams, fracture critical steel bridges, R/C slabs, and T-Beams. For all of the structures, BDI collected and reviewed the strain, displacement, and NDE (GPR) data and provided it directly to AECOM for evaluation. For select bridges, BDI also used the field data to calibrate finite element models and develop accurate load ratings using the AASHTO evaluation guide. Many of these relatively small structures had complex geometry and load distribution patterns that could only be determined through a review of field response data and the field verified modeling. Mr. Carpenter served as analysis and load rating engineer on this project.

16. Staff Experience:

Firm employed by	Bridge Diagnostics, Inc. (BDI)		
Name	**Jesse Sipple, PhD, PE**	Years of relevant experience with this employer	8
Title	Testing, Monitoring, and Engineering Program Manager	Years of relevant experience with other employer(s)	9
Degree(s) / Years / Specialization	Ph.D. / 2013 / Civil Engineering M.S. / 2008 / Civil Engineering B.S. / 2007 / Civil Engineering		
Active registration number / state / expiration date	#PE.0041028 / LA / 3-31-2023		
Year registered	2016	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities	Task Manager – Testing and Monitoring		

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).
11/21-Present	**Off-System Bridge Ratings and Evaluation, LA (Contract 4400010099) –** BDI is preforming live-load testing of ten bridges throughout the state of Louisiana, including seven culvert and three reinforced concrete bridges of varying types to provide realistic load rating results for those structures. The process includes developing instrumentation plans, instrumenting, load testing, and load rating each bridge. Load rating reports will be provided for each of the load tested structures. Dr. Sipple is an analysis engineer and reviewer for this project.
07/18–09/18	**Collier County Bridge Load Testing, FL –** BDI performed diagnostic load tests on the FDOT Bridge 034190 which spans over a small drainage ditch in a residential area in Immokalee, Florida. The overall goal of these tests was to better understand the structure's transverse distribution, provide refined load ratings, and reevaluate the current posting levels. Load tests were performed, and the collected structural responses were used to generate a field-verified finite-element model (FEM). This field-verified FEM was then used to compute refined load ratings. Dr. Sipple acted as project manager for this project.
06/18–03/19	**Phinney Avenue Bridge Load Rating and NDE, WA –** BDI was contracted by SDOT to perform diagnostic load tests and structural reinforcement investigation on the Phinney Ave bridge that spans over North 57th St in Seattle, WA. Instrumentation, load tests, and reinforcement investigation were performed with the overall goal of these tests was to better understand the structures' load distribution, reinforcement details, and in turn provide refined load ratings. Dr. Sipple acted as the project manager for this project.
07/19–12/19	**St. Claude Lift Bridge Balance and Operation Testing, LA** – Dr. Sipple was the quality control manager for counterweight/span balance and friction calculations as well as structural performance evaluation on a double heal trunnion Strauss Bascule Bridge. Strain gauge testing and various instrumentation tasks were performed during investigation of a bearing failure on the span to counterweight link.
08/18–12/20	**Live Load Testing and Field-Verified Load Rating of 16 Bridges, VA** – BDI provided load testing and field-verified load rating of 16 structures in the Fredericksburg and Richmond districts of VDOT. BDI was responsible for the design of load testing requirements, development of instrumentation plans, execution of field work and load testing, data analysis, finite element (FE) model creation and calibration, and eventual load rating per VDOT and AASHTO requirements. Dr. Sipple acted as quality control manager for this project.

16. Staff Experience:

Firm employed by	KTA-Tator, Inc.		
Name	**Richard A. Burgess**	Years of relevant experience with this employer	29
Title	Supervisor-Other	Years of relevant experience with other employer(s)	18
Degree(s) / Years / Specialization	BS / 1971 / Environmental Science; MS / 1976 / Operations Management		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	N/A
			Other Pertinent Training / Certifications NACE Certified Coatings Inspector Level 3 (#2988; expiration 12/31/2022) SSPC Certified Protective Coatings Specialist (#973-878-1353; expiration 12/31/2024)
Contract role(s) / brief description of responsibilities	Coatings Consultant		

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).
02/20 – 07/20	**Sunshine Skyway Bridge, Tampa/St. Petersburg, FL** – As a subconsultant to TY Lin International, Mr. Burgess performed a condition assessment of the existing coatings on the stay cables of this major bridge and provided recommendations for the maintenance painting of these cables.
02/19 – 05/19	**Bridge Number BN100428 (Ramp from I-4 EB to I-75 NB over I-4), Hillsborough County, FL** – As a subconsultant to TY Lin International, Mr. Burgess supervised coatings toxic metals testing and assisted with report preparation for the rehabilitation of the coating system on this structure.
03/18 – 06/18	**City of Tampa Plant Avenue Bridge** – As a subconsultant to Volkert, Inc., Mr. Burgess supervised coatings toxic metals testing, performed a simplified assessment of environmental risks, and assisted with report preparation for the rehabilitation of the coating system on this bridge.
03/18 – 06/18	**Brorein Street Bascule Bridge, Tampa, FL** – As a subconsultant to TY Lin International, Mr. Burgess supervised coatings toxic metals testing, performed a simplified assessment of environmental risks, assisted with report preparation, and developed the environmental specifications for the rehabilitation of the coating system on this bridge.
03/18 – 05/18	**CSX RR over SR61 Monroe Street, Tallahassee, FL** – As a subconsultant to Infrastructure Engineers, Mr. Burgess provided post-design services (review/comment on painting contractor submittals – environmental, safety, and health plans, and other environmental-related documents) for the rehabilitation of the coating system on this bridge.
06/17 – 07/17	**SR44 North Causeway Bridge, Brevard County, FL** – As a subconsultant to Kisinger, Campo & Associates, Mr. Burgess performed a coating condition assessment, supervised coatings laboratory testing, prepared the report, and developed the Plan Notes for the rehabilitation of the coating system on the bascule span of this bridge.
06/17 – 07/17	**Longboat Key Pass Bridge, Manatee County, FL** – As a subconsultant to WSP/Parsons Brinckerhoff, Mr. Burgess supervised coatings toxic metals testing, assisted with report preparation, and developed the environmental Plan Notes for the rehabilitation of the coating system on this bridge.
03/17 – 03/17	**Dale Earnhardt Memorial Pedestrian Bridge, Daytona Beach, FL** – As a subconsultant to GRAEF-USA, Mr. Burgess reviewed the coatings laboratory testing results and Plan Notes for the spot painting of this bridge.

02/17 – 05/17	**Six Bridges in Pensacola, FL** – As a subconsultant to TY Lin, Mr. Burgess reviewed and commented on the painting contractor containment plan as it pertained to SSPC Guide 6, and reviewed and commented on the contractor's environmental, safety, and health plans for the rehabilitation of the coating system on these bridges.
08/16 – 09/16	**SH100 Queen Isabella Causeway, Port Isabella, TX** – Mr. Burgess conducted a coating failure investigation and supervised testing of the coating system applied to this structure. A report was prepared detailing the results of the investigation and providing recommendations for the mitigation of the coating problems.
03/16 – 05/16	**I-10 Calcasieu Bridge, Baton Rouge, LA** – As a subconsultant to HNTB, Mr. Burgess performed a coating condition assessment on this bridge to determine the integrity of the existing coating systems applied and determine maintenance painting strategies.
02/16 – 06/16	**Circus Bascule Bridges, Sarasota County, FL** – As a subconsultant to TY Lin, Mr. Burgess supervised coatings toxic metals testing, assisted with report preparation, and developed the environmental Plan Notes for the rehabilitation of these bridges.
03/15 – 08/15	**Jones Loop Road over I-75, Charlotte County, FL** – As a subconsultant to Parsons, Brinckerhoff, Quade & Douglas, Mr. Burgess supervised coatings toxic metals testing, assisted with report preparation, and developed the environmental Plan Notes for the rehabilitation of the coating system on this bridge.
12/14 – 04/15	**Angus L. Macdonald and A. Murray Mackay Bridges, Halifax, NS** – Mr. Burgess performed coating condition assessments of these two bridges which carry automobile traffic over Halifax Harbour, Nova Scotia. Mr. Burgess prepared a report which presented a summary of the findings of the assessments and laboratory testing and presented recommendations for maintenance painting of these structures.
05/14 – 07/14	**Oslo Bridge, Oslo, MN** – As a subconsultant to Short Elliott Hendrickson, Inc. (SEH), Mr. Burgess performed a coating condition assessment of this bridge, including a visual examination, evaluation of the degree of rusting present, coating thickness and adhesion measurements, an examination of the surface beneath the coating system, and sample collection. Laboratory testing included analysis for generic coating type and toxic metals, concentration of chlorides, microscopic examination, and color measurements. Recommendations for coating system replacement and an opinion of probable costs were submitted in a final project report.

16. Staff Experience:

Firm employed by	KTA-Tator, Inc.		
Name	**Robert S. Lanterman**	Years of relevant experience with this employer	15
Title	Supervisor – Other	Years of relevant experience with other employer(s)	7
Degree(s) / Years / Specialization		BE / 1999 / Chemical Engineering	
Active registration number / state / expiration date			
Year registered	Discipline	**Other Pertinent Training / Certifications** NACE Certified Coatings Inspector Level 3 (#13505; expiration 05/23/2022) SSPC Certified Protective Coatings Specialist (#2015-820-136; expiration 12/31/2023)	
Contract role(s) / brief description of responsibilities		Coatings Consultant	

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).
07/20-08/20	**Denison Harvard Bridge, Cleveland, OH** – As a subconsultant to Michael Baker International, Mr. Lanterman performed a coating condition assessment, supervised coatings laboratory testing, developed a maintenance painting strategy, provided recommendations, and developed an opinion of probable costs for the maintenance painting of this bridge.
02/20-05/20	**Jackson Street (Red River) Lift Bridge, Alexandria, LA** – As a subconsultant to Gresham, Smith & Partners, Mr. Lanterman performed a coating condition assessment (visual examination, coating thickness and adhesion measurements, substrate examination, and coating sample procurement), supervised coatings laboratory testing, and prepared a report with recommendations for the rehabilitation of the coating system on this bridge.
07/17-Present	**Benjamin Franklin Bridge, Philadelphia, PA** – As a subconsultant to HNTB, Mr. Lanterman is providing project engineering/coating consulting services for KTA on this project involving a coating condition assessment of the bridge to determine the condition of the existing coatings on the structure to develop a future maintenance painting strategy. Additional services include providing contractor containment and paint submittal review services for the maintenance painting and steel repair work on this bridge.
02/18-06/19	**Walt Whitman Bridge NJ Approach Spans** – As a subconsultant to AECOM, Mr. Lanterman provided project engineering/coating consulting services for KTA on this project involving a coating condition assessment to determine the condition of the existing coatings on the structures in order to develop future maintenance painting strategies for each structure. KTA also conducted a Relative Risk Characterization that focused on the relative impacts to the environment, the public, and adjacent workers resulting from the proposed surface preparation activities.
10/18-03/19	**Kootenay River Bridge, Creston, BC, Canada** – As a subconsultant to McElhanney Consulting Services Ltd., Mr. Lanterman performed a coating condition assessment (visual examination, coating thickness and adhesion measurements, substrate examination, and coating sample procurement), supervised coatings laboratory testing, and prepared a report with recommendations for the rehabilitation of the coating system on this bridge.
9/18-12/18	**Argentia Newfoundland Ferry Dock Transfer Bridge, Newfoundland, Canada** – As a subconsultant to CBCL Limited, Mr. Lanterman performed a coating condition assessment, supervised coatings laboratory testing, and developed recommendations for future maintenance painting of the structural steel end span of this bridge.
06/17-06/19	**Walt Whitman Bridge Corridor - PA Approach** – As a subconsultant to AECOM, Mr. Lanterman provided project engineering/coating consulting services for KTA on this project involving a coating condition assessment to determine the condition of the existing coatings on the structures in order to develop future maintenance painting strategies for each structure. KTA also conducted a Relative Risk

	Characterization that focused on the relative impacts to the environment, the public, and adjacent workers resulting from the proposed surface preparation activities.
03/17-05/17	**US 90 Morgan City Bridge and Nearby Structures, Morgan City, LA** – As a subconsultant to HNTB, Mr. Lanterman performed a coating condition assessment, supervised coatings laboratory testing, and prepared a report with recommendations for the rehabilitation of the coating system on this bridge.
02/17-03/17	**I-310 Luling Bridge, Luling, LA** – As a subconsultant to HNTB, Mr. Lanterman performed a coating condition assessment of the weathering steel towers and girders and prepared a report detailing the conditions found and providing recommendations for the remediation of the corrosion problems.
09/16-12/16	**South Street Viaduct, New York City (Manhattan), NY** – As a subconsultant to HDR Engineering, Mr. Lanterman performed a coating condition assessment, supervised coatings laboratory testing, and prepared a report with recommendations for the rehabilitation of the coating system on this bridge.
03/13-11/17	**Commodore Barry Bridge, Chester, PA** – As a subconsultant to AECOM, Mr. Lanterman provided project engineering/coating consulting services for KTA on this project involving a coating condition assessment of this bridge and associated structures (Ramp AC, Ramp BC, SR130 Overpass, and the Maintenance Building Elevated Water Tank) to determine the condition of the existing coatings on the structures along with providing the DRPA with appropriate coating recommendations. KTA also provided specification review (paint and environmental) and EH&S services (sensitive receptor survey and development of an air monitoring plan with monitor location recommendations) for all structures.
11/21-12/21	**LA 47 IWGO Bridge, New Orleans, LA** – As a subconsultant to TRC, Mr. Lanterman performed a coating condition assessment of the steel truss members and girders and prepared a report detailing construction access and painting procedures.

16. Staff Experience:

Firm employed by	NTB Associates, Inc.		
Name	**Paul B. Rossini, PLS**	Years of relevant experience with this employer	35
Title	President/ Principal-in-Charge	Years of relevant experience with other employer(s)	7
Degree(s) / Years / Specialization		High School Diploma, 1980	
Active registration number / state / expiration date		#PE.0004731/ LA / 09-30-22	
Year registered	1994	Discipline	Professional Land Surveyor
Contract role(s) / brief description of responsibilities		Survey Task Leader	

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).
08/21 – 04/22	**LaDOTD Rural Bridge Replacement Initiative Phase II, Districts 05, 08, and 58 (4400019337) -** Principal-in-Charge of contract administration, staffing, logistics, and QA/QC for Static GPS Control, topographic surveys utilizing HDS 3D Terrestrial Laser Scanning methods of data collection, property surveys, and QL C & D SUE for 34 bridge and culvert replacements as a sub-consultant to BKI. Property surveying will include production of preliminary and final right of way maps and parcel descriptions.
04/21 – 04/22	**LaDOTD Rural Bridge Replacement Initiative Phase II, Districts 02, 03, 07, 61, & 62 (4400019338) -** Principal-in-Charge of contract administration, staffing, logistics, and QA/QC for **Static GPS Control, topographic surveys utilizing HDS 3D Terrestrial Laser Scanning methods of data collection** and QL C & D SUE for 21 bridge and culvert replacements as a sub-consultant to Sigma.
09/20 – 04/22	**LaDOTD IDIQ Contract for Hydrographic Surveying Services, Statewide, LA (4400019715) -** Principal-in-Charge of contract administration, staffing, logistics, and QA/QC for **hydrographic surveying services** for multiple bridges at scheduled intervals upstream and downstream for 74 sites throughout the State.
05/15-03/21	**City of Bossier City, Walter O. Bigby Carriageway (N. Pkwy Ext.) Bossier Parish, LA (City Proj. No. 8-15) -** Principal-in-Charge of fee negotiations, scope of work, staffing, logistics, and QC/QA for topographic and hydrographic surveying services for a parkway facility design featuring new roads, additional lanes, roundabouts, and a bridge.
12/20-03/21	**4400017713 & H.013821.5, LaDOTD LA 6: Youngs Bayou Bridge Rehab, Natchitoches Parish, LA -** Principal-in-Charge reviewed the scope, fees, and negotiations and assisted with crew coordination, staffing, logistics, and QC/QA for topographic surveying services and HDS 3D Terrestrial Laser Scanning for bridge rehabilitation.
12/18-01/20	**H.013643, LaDOTD LA 951: Roadway Washout Repairs, East Feliciana Parish, LA -** Principal-in-Charge reviewed the scope, fees, and negotiations and assisted with crew coordination, staffing, logistics, and QC/QA for topographic surveying services for road rehabilitation and bridge replacement.
03/19-10/19	**4400009385 & H.012037.5, LaDOTD US 167, LA 2: Middle Slough & Creek Bridges, Union Parish, LA -** Principal-in-Charge reviewed the scope, fees, and negotiations and assisted with crew coordination, staffing, logistics, and QC/QA for topographic surveying services for bridge rehabilitation/ design.
04/16-08/17	**440006381 & H.008768, LaDOTD Retainer Contract for Hydrographic Monitoring of Existing Bridges, Cross Bayou Bridge, Caddo Parish, LA -** Principal-in-Charge reviewed the scope, fees, and negotiations and assisted with crew coordination, staffing, and logistics for hydrographic surveying services of the **Cross Bayou Bridge** under six separate task orders. Surveys were performed at Cross Bayou at Springs Street, Cross Bayou at West Shreveport, Cross Bayou at East, and Cross Bayou at Market Street. A total of 11 hydrographic bridge surveys were performed for the Cross Bayou Bridge during this contract.

04/15-02/16	**4400005532 & H.011319.5, LaDOTD I-20 (Airline Drive to I-220) Route I-20, Bossier Parish, LA -** Principal-in-Charge of fee negotiations, scope of work, staffing, logistics, and QC/QA for topographic surveying services for interstate rehabilitation as a sub-consultant to T2 Utility Engineers.
04/15-09/15	**4400001798 & H.011094.5, LaDOTD LA 3094: Hearne Ave. Bridge Rehab, Route LA 3094, Caddo Parish, LA -** Principal-in-Charge of fee negotiations, scope of work, staffing, logistics, and QC/QA for topographic surveying services and HDS 3D Terrestrial Laser Scanning for bridge rehabilitation.

16. Staff Experience:

Firm employed by	NTB Associates, Inc.		
Name	**Bryan T. Bunch, PLS**	Years of relevant experience with this employer	13
Title	Vice President	Years of experience with other firm(s)/employer(s)	15
Degree(s) / Years / Specialization		B.S. / 1998 / Survey and Land Information Systems	
Active registration number / state / expiration date		#PLS.0005014 / LA / 3-31-24	
Year registered	2009	Discipline	Land Surveying
Contract role(s) / brief description of responsibilities		Surveying Task Manager (topo, property, and boundary surveys along with title work)	

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).
08/21 – 04/22	**LaDOTD Rural Bridge Replacement Initiative Phase II, Districts 05, 08, and 58 (4400019337)** - Project Manager directing survey crews, file processing, drafting, and submittals for Static GPS Control, topographic surveys utilizing HDS 3D Terrestrial Laser Scanning methods of data collection, property surveys, and QL C & D SUE for 34 bridge and culvert replacements as a sub-consultant to BKI. Property surveying will include production of preliminary and final right of way maps and parcel descriptions.
04/21 – 04/22	**LaDOTD Rural Bridge Replacement Initiative Phase II, Districts 02, 03, 07, 61, & 62 (4400019338)** - Assistant Project Manager directing survey crews, file processing, drafting, and submittals for Static GPS Control, topographic surveys utilizing HDS 3D Terrestrial Laser Scanning methods of data collection and QL C & D SUE for 21 bridge and culvert replacements as a sub-consultant to Sigma.
12/20 – 03/22	**LaDOTD LA 47 IWGO Bridge Rehabilitation, Historic Bridge Improvement (HBI), Orleans Parish, LA (4400017713)** - Project Manager directed survey crews, file processing, drafting, and submittals for topographic surveys utilizing HDS 3D Terrestrial Laser Scanning methods of data collection, Static GPS Control, hydrographic surveys, and QL C & D SUE for bridge repair/ rehabilitation.
05/15-03/21	**City of Bossier, Walter O. Bigby Carriageway (N. Pkwy Ext.) Bossier Parish, LA (City Proj. No. 8-15)** - Quality Control Surveyor responsible for assisting in the supervision and review of survey data and processing for topographic and hydrographic surveying services for a parkway facility design featuring new roads, additional lanes, roundabouts, and a bridge.
12/20-03/21	**4400017713 & H.013821.5, LaDOTD LA 6: Youngs Bayou Bridge Rehab, Natchitoches Parish, LA -** Asst. Project Manager. Assisted in the supervision and review of survey data and processing for topographic surveying services and HDS 3D Terrestrial Laser Scanning for a bridge rehabilitation.
12/17-07/20	**H.004100.5, LaDOTD I-10: LA 415 to Essen Lane on I-10 and I-12, West & East Baton Rouge Parishes, LA** - Project Manager. Directed survey crews, file processing, drafting, and submittals for topographic surveying services and HDS 3D Terrestrial Laser Scanning for interstate rehabilitation.
07/19-02/20	**H.011670, LaDOTD I-10: Loyola Interchange, Kenner, Jefferson Parish, LA** - Project Manager. Directed survey crews, file processing, drafting, and submittals for topographic surveying services and HDS 3D Terrestrial Laser Scanning for interstate rehabilitation as a sub-consultant to Forte & Tablada, Inc.
12/18-01/20	**H.013643, LaDOTD LA 951: Roadway Washout Repairs, East Feliciana Parish, LA** - Project Manager. Directed survey crews, file processing, drafting, and submittals for topographic surveying services for road rehabilitation and bridge replacement.
03/19-10/19	**4400009385 & H. 012037.5, LaDOTD US 167, LA 2: Middle Slough & Creek Bridges, Union Parish, LA** - Quality Control Surveyor. Assisted in the supervision and review of survey data and processing for topographic surveying services for bridge rehabilitation/ design.

06/18-10/18	**H.003074.5 & H.009087.5, LaDOTD I-10: Williams Blvd. to Veterans Blvd., Jefferson Parish, LA** - Project Manager. Directed survey crews, file processing, drafting, and submittals for topographic surveying services and HDS 3D Terrestrial Laser Scanning for interstate rehabilitation as a sub-consultant to GEC, Inc.
05/16-06/18	**4400002562 & 4400006814, LaDOTD LA 675 & LA 87 Improvements in New Iberia, Iberia Parish, LA** - Project Manager. Directed survey crews, file processing, drafting, and submittals for topographic surveying services and HDS 3D Terrestrial Laser Scanning for drainage rehabilitation as a sub-consultant to Stanley Consultants, Inc.
12/15-06/17	**4400003592 & H.001723.5, LaDOTD Cotton to Silo Bridge Replacement, St. Mary Parish, LA** - Project Manager. Directed survey crews, file processing, drafting, and submittals for topographic surveying services for road rehabilitation and bridge replacement as a sub-consultant to Denmon Engineering.
05/16-12/16	**4400006527 & H.012422.5, LaDOTD I-110: Interchange Modifications, East Baton Rouge Parish, LA** - Project Manager. Directed survey crews, file processing, drafting, and submittals for topographic surveying services and HDS 3D Terrestrial Laser Scanning for road design modifications.
04/15-02/16	**4400005532 & H.011319.5, LaDOTD I-20 (Airline Drive to I-220) Route I-20, Bossier Parish, LA** - Asst. Project Manager assisted in the supervision of survey crews and technicians for topographic surveying services for interstate rehabilitation as a sub-consultant to T2 Utility Engineers.
04/15-09/15	**4400001798 & H.011094.5, LaDOTD LA 3094: Hearne Ave. Bridge Rehab, Route LA 3094, Caddo Parish, LA** - Asst. Project Manager assisted in the supervision of survey crews and technicians for topographic surveying services and HDS 3D Terrestrial Laser Scanning for bridge rehabilitation.
02/14-03/15	**H.004367.5, LaDOTD Earhart Expressway Extension to US 61, Route LA 3139, Jefferson Parish, LA** - Project Manager. Directed survey crews, file processing, drafting, and submittals for topographic surveying services and HDS 3D Terrestrial Laser Scanning for an overpass connection, relocation of existing lanes, and construction of additional lanes as a sub-consultant to AECOM.
07/12-01/14	**H.003074.5 & H.009087.5, LaDOTD I-10 Loyola Ave. to Williams Blvd., Jefferson Parish, LA** - Project Manager. Directed survey crews, file processing, drafting, and submittals for topographic surveying services and HDS 3D Terrestrial Laser Scanning for the preparation of preliminary and final roadway and bridge design plans for rehabilitation as a sub-consultant to GEC.
04/13-09/13	**345-03-0029, 400001798, & H.002650.5, LaDOTD LA 506 Castor Relief Bridges, Route LA 506, Caldwell Parish, LA** - Asst. Project Manager. Assisted in the supervision of survey crews and technicians for topographic and hydrographic surveying services for use as basis for engineering design for the replacement or rehabilitation of 7 bridges.
01/12-04/12	**4400001798 & H.009836.5, LaDOTD I-12 Walker to Satsuma, Livingston Parish, LA** - Asst. Project Manager. Assisted in the supervision of survey crews and technicians for topographic surveying services and HDS 3D Terrestrial Laser Scanning for interstate rehabilitation.
02/11-08/11	**H.003860.5 & 700-99-0525, LaDOTD I-20 Rehabilitation Westerfield Avenue to Industrial Drive, District 04, Bossier Parish, LA** - Project Surveyor. Assisted in the supervision of survey crews, file processing, drafting, and submittals for topographic surveying services and HDS 3D Terrestrial Laser Scanning for interstate rehabilitation.

16. Staff Experience:

Firm employed by	NTB Associates, Inc.		
Name	**Grant H. Gilleon, PLS**	Years of relevant experience with this employer	14
Title	Vice President	Years of relevant experience with other employer(s)	20
Degree(s) / Years / Specialization		B.S. / 1987 / Construction Engineering Technology	
Active registration number / state / expiration date		#PLS.0004976 / LA / 3-31-24	
Year registered	1996	Discipline	Land Surveying **Other Pertinent Training / Certifications** • ATSSA - Traffic Control Supervisor
Contract role(s) / brief description of responsibilities		Survey Supervisor (topo and hydrographic surveying services)	

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).
09/20 – 04/22	**LaDOTD IDIQ Contract for Hydrographic Surveying Services, Statewide, LA (4400019715)** - Project Manager directing hydrographic surveying services for multiple bridges at scheduled intervals upstream and downstream currently totaling 74 sites throughout the State.
09/14 – 04/22	**USDA/NRCS Property Surveying Services, LA (AG-7217-C-14-0010, AG-2B46-S-16-0004, & 12FPC319D0016)** - Project Manager supervising survey crews, file processing, drafting, and submittals for property surveying services and map and plat preparation for over 8,600 acres.
12/20 – 03/22	**LaDOTD LA 47 IWGO Bridge Rehabilitation, Historic Bridge Improvement (HBI), Orleans Parish, LA (4400017713)** - Quality Control Surveyor assisted in survey crew coordination for topographic surveys utilizing HDS 3D Terrestrial Laser Scanning methods of data collection, Static GPS Control, hydrographic surveys, and QL C & D SUE for bridge repair/ rehabilitation.
08/18 – 11/21	LaDOTD IDIQ Contract for Hydrographic Surveying Services, Statewide, LA (4400012669) - Project Manager directing hydrographic surveying services for multiple bridges at scheduled intervals upstream and downstream for 320 sites throughout the State.
05/15-03/21	**City of Bossier, Walter O. Bigby Carriageway (N. Pkwy Ext.) Bossier Parish, LA** - Project Manager. Supervised topographic surveying services along with hydrographic surveying services to accurately determine the river bottom and channel location in association with the design of a new stormwater outfall into the river for a parkway facility design featuring new roads, additional lanes, roundabouts, and a bridge.
12/20-03/21	**4400017713 & H.013821.5, LaDOTD LA 6: Youngs Bayou Bridge Rehab, Natchitoches Parish, LA** - Quality Control Surveyor. Assisted in the supervision and review of survey data and processing for topographic surveying services and HDS 3D Terrestrial Laser Scanning for bridge rehabilitation.
10/20-11/20	**Caddo Lake Hydrographic Profile Survey, Caddo Parish, LA** - Project Manager. Directed survey crews to perform hydrographic surveying services in support of a directional bore design for the Oil City, LA Water Transmission Main as a sub-consultant to Balar Associates, Inc.
12/17-07/20	H**.004100.5, LaDOTD I-10: LA 415 to Essen Lane on I-10 and I-12, West & East Baton Rouge Parishes, LA** - Quality Control Surveyor. Assisted in the supervision and review of survey data and processing for topographic surveying services and HDS 3D Terrestrial Laser Scanning for interstate rehabilitation.

03/19-10/19	**4400009385 & H. 012037.5, LaDOTD US 167, LA 2: Middle Slough & Creek Bridges, Union Parish, LA** - Project Manager. Supervised survey crews, file processing, drafting, and submittals for topographic surveying services for bridge rehabilitation/ design.
04/16-08/17	**440006381 & H.008768, LaDOTD Retainer Contract for Hydrographic Monitoring of Existing Bridges, Cross Bayou Bridge, Caddo Parish, LA** - Project Manager. Directed survey crews to perform hydrographic surveys of the Cross Bayou Bridge under six separate task orders. Surveys were performed at Cross Bayou at Springs Street, Cross Bayou at West Shreveport, Cross Bayou at East, and Cross Bayou at Market Street. A total of 11 hydrographic bridge surveys were performed for the Cross Bayou Bridge during this contract.
04/15-02/16	**4400005532 & H.011319.5, LaDOTD I-20 (Airline Drive to I-220) Route I-20, Bossier Parish, LA** - Project Manager. Supervised survey crews, file processing, drafting, and submittals for topographic surveys and HDS 3D Terrestrial Laser Scanning for interstate rehabilitation as a sub-consultant to T2 Utility Engineers.
12/15-01/16	**City of Shreveport, Bickham Bayou Emergency Sewer Repairs, Caddo Parish, LA** - Project Manager. Supervised survey crews, file processing, drafting, and submittals for topographic and hydrographic surveying services for sewer rehabilitation.
05/13-10/15	**BPPJ Kingston Road Improvements and Development, Bossier Parish, LA** - Project Manager. Supervised survey crews, file processing, drafting, and submittals for topographic surveying services for road design.
04/15-09/15	**4400001798 & H.011094.5, LaDOTD LA 3094: Hearne Ave. Bridge Rehab, Route LA 3094, Caddo Parish, LA** - Project Manager. Supervised survey crews, file processing, drafting, and submittals for topographic surveying services and HDS 3D Terrestrial Laser Scanning for bridge rehabilitation.
03/08-05/15	**H.003849 & 700-08-0123, BPPJ Hamilton Road Improvements (I-20 to Benton Road) Bossier Parish, LA** - Project Manager. Supervised survey crews, file processing, drafting, and submittals for topographic surveying services for a new urban roadway.
07/14-02/15	**4400001798 & H.009425.5, LaDOTD LA 16 Amite Drainage Improvements, Route LA 16, Tangipahoa Parish, LA** - Project Manager. Directed survey crews to perform topographic surveying services for drainage improvements. Hydrographic surveys were also performed of the drainage pond and related outfalls on this project to collect the run-off of the drainage system.
04/13-09/13	**345-03-0029, 400001798, & H.002650.5, LaDOTD LA 506 Castor Relief Bridges, Route LA 506, Caldwell Parish, LA** - Project Manager. Directed topographic surveying services for use as basis for engineering design for the replacement or rehabilitation of 7 bridges. Hydrographic surveys were also performed as related to the creeks and tributaries crossing beneath the 7 bridges along the project route.
06/13-06/13	**H.003263, LaDOTD Westerfield at I-20 Locating Utilities, Bossier Parish, LA** - Project Manager. Supervised survey crews, file processing, drafting, and submittals for topographic surveying services for interstate rehabilitation.
12/12-12/12	**H.00388.5, LaDOTD I-49 Survey Subsurface Utilities, Caddo Parish, LA** - Project Manager. Supervised survey crews, file processing, drafting, and submittals for topographic surveying services for interstate rehabilitation.

16. Staff Experience:

Firm employed by	NTB Associates, Inc.		
Name	**John W. King**	Years of relevant experience with this employer	15
Title	Senior Vice President	Years of relevant experience with other employer(s)	17
Degree(s) / Years / Specialization		Instrumentation Design Drafting, 1990; AutoCAD, 1991; Pipe Drafting, 1992	
Active registration number / state / expiration date		N/A	
Year registered	N/A	Discipline	N/A **Other Pertinent Training / Certifications** • Leica's LIDAR Scanning Courses and Cyclone Software Courses, 2013
Contract role(s) / brief description of responsibilities		Survey / Laser Scanning Supervisor	

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).
08/21 – 04/22	**LaDOTD Rural Bridge Replacement Initiative Phase II, Districts 05, 08, and 58 (4400019337)** - Survey Staff/ Scanner Manager assisting in the management of survey crews and technicians for Static GPS Control, topographic surveys utilizing HDS 3D Terrestrial Laser Scanning methods of data collection, property surveys, and QL C & D SUE for 34 bridge and culvert replacements as a sub-consultant to BKI. Property surveying will include production of preliminary and final right of way maps and parcel descriptions.
04/21 – 04/22	**LaDOTD Rural Bridge Replacement Initiative Phase II, Districts 02, 03, 07, 61, & 62 (4400019338)** - Survey Staff/ Scanner Manager assisting in the management of survey crews and technicians for Static GPS Control, topographic surveys utilizing HDS 3D Terrestrial Laser Scanning methods of data collection and QL C & D SUE for 21 bridge and culvert replacements as a sub-consultant to Sigma.
12/20 – 03/22	**LaDOTD LA 47 IWGO Bridge Rehabilitation, Historic Bridge Improvement (HBI), Orleans Parish, LA (4400017713)** - Survey Staff/ Scanner Manager assisted in the management of survey crews and technicians for topographic surveys utilizing HDS 3D Terrestrial Laser Scanning methods of data collection, Static GPS Control, hydrographic surveys, and QL C & D SUE for bridge repair/ rehabilitation.
12/17 – 07/20	**H.004100.5, LaDOTD I-10: LA 415 to Essen Lane on I-10 and I-12, West & East Baton Rouge Parishes, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection.**
07/19 – 02/20	**H.011670, LaDOTD I-10: Loyola Interchange, Kenner, Jefferson Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection** as a sub-consultant to Forte & Tablada, Inc.
06/18 – 10/18	**H.003074.5 & H.009087.5, LaDOTD I-10: Williams Blvd. to Veterans Blvd., Jefferson Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection** as a sub-consultant to GEC.
05/16 – 06/18	**4400002562 & 4400006814, LaDOTD LA 675 & LA 87 Improvements in New Iberia, Iberia Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection** as a sub-consultant to Stanley Consultants, Inc.

07/16 – 03/17	**4400006527 & H.002337.5, LaDOTD Bayou Fountain, Route LA 327 Spur (Gardere Lane) East Baton Rouge Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians' topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection.**
05/16 – 12/16	**4400006527 & H.012422.5, LaDOTD I-110: Interchange Modifications, East Baton Rouge Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection.**
10/15 – 07/16	**4400005142 & H.011309.5, LaDOTD MacArthur Interchange Completion Phase II, Route US 90-Z, Jefferson Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection**.
04/15 – 02/16	**4400005532 & H.011319.5, LaDOTD I-20 (Airline Drive to I-220) Route I-20, Bossier Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection** as a sub-consultant to T2 Utility Engineers formerly known as Cardno.
02/14 – 03/15	**H.004367.5, LaDOTD Earhart Expressway Extension to US 61, Route LA 3139, Jefferson Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection** as a sub-consultant to AECOM.
07/12 – 01/14	**H.003074.5 & H.009087.5, LaDOTD I-10 Loyola Ave. to Williams Blvd., Jefferson Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection.**
07/12 – 06/13	**H.003074.5 & H.009087.5, LaDOTD I-10 Williams Blvd. to Veterans Blvd., Jefferson Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection.**
01/12 – 04/12	**4400001798 & H.009836.5, LaDOTD I-12 Walker to Satsuma, Livingston Parish, LA -** Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection.**
02/11 – 08/11	**H.003860.5 & 700-99-0525, LaDOTD I-20 Rehabilitation Westerfield Avenue to Industrial Drive, Bossier Parish, LA** - Survey Staff/ Scanner Manager. Assisted in the management of survey crews and technicians for topographic surveys utilizing **HDS 3D Terrestrial Laser Scanning methods of data collection.**

16. Staff Experience:

Firm employed by	Holden Architects, A Professional Corporation		
Name	**Thomas S. Holden, RA**	Years of experience with this firm/employer	40
Title	President / CEO	Years of experience with other firm(s)/employer(s)	5
Degree(s) / Years / Specialization	Bachelor of Architecture / 1975 / Architecture		
Active registration number / state / expiration date	#2576 / LA / 12-31-22		
Year registered	1980	Discipline	Architect
Contract role(s) / brief description of responsibilities	Project Architect		

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).
09/09-06/11	**S.P. NO. 046-31-0053, Judge Seeber Bridge Repairs, New Orleans, LA** - Mr. Holden served as Architect-of-Record under a contract held by ABMB Engineers to renovate the main operation facilities of the Judge Seeber Bridge in New Orleans. A vertical drawstring lift bridge opened in 1957, the Judge Seeber Bridge averages 27,000 commuters daily with additional boat traffic via the Industrial Canal. The primary focus of the project team was to restore all damaged and deteriorated Katrina damaged elements of the operation facility's building systems while structural rehabilitation was performed on the bridge. The $500,000 rehabilitation, which was part of a $6.7 million complete bridge renovation, consisted of two portions: the Operator House and the Machinery Rooms. The Operator House scope of work included new interior walls and finishes; new ceiling systems and lighting fixtures; new plumbing fixtures; replacement of all existing windows with hurricane complaint window systems; doors, frames, and hardware replacement for all doors; a new roofing system; complete HVAC system replacement; re-painting of the existing roof access ladder; and repairs to damaged exterior concrete. Work associated with the Machinery House consisted of restoring the interior and exterior façade of the two deteriorated rooms atop the bridge's east and west banks that house the bridge's vertical lifting equipment. The scope of work included cleaning of the existing machinery equipment and flooring; replacement of all existing windows with hurricane complaint window systems; all doors, frames and associated hardware replacement; and replacement and painting of the existing galvanized roofing/exterior surfacing. Along with the complete restoration of the bridge components, the rehabilitation of the Operator's House and Machinery Rooms allowed the Judge Seeber Bridge to continue to serve the New Orleans area for years into the future.
04/13-01/20	**CF Industries, Donaldsonville, LA –** Mr. Holden was Architect of Record the design of two, 2-story 35,000 s.f. office buildings at the CF Industries Donaldsonville industrial site. HA was asked to closely examine the engineering and maintenance departments to develop comprehensive programs that outlined the current spatial, functional, and storage needs while creating flexibility for future growth. The completed designs and programs reflected efficient offices, spacious archive capability, large and small conferencing capability, and open office flex spaces. HA utilized a programming approach that identified five major design goals to achieve a conceptual layout that exceeded expectations, while keeping the door open for further refinement. HA implemented creative application of sound design principles to identify the client's needs and led to a building form that reflects 'who they are" and "how they work". The relationship and arrangement of spaces follows function throughout the complex. The $3 Billion plant is designed on the principle of process engineering, a linear alignment of functions. The buildings mirror that linear alignment and express that fundamental process. HA applied current design trends of strategically placed infrastructure allowing future reassignment of space, day lighting, increased fresh air ventilation rates, use of dynamic or flexible working environments, hoteling, flex space arrangements, breakout areas for social interaction, robust IT infrastructure, and an overall workplace image with a view to the future.
03/13–9/15	**LSU Foundation Business Office Building, Baton Rouge, LA –** Mr. Holden was the Architect of Record for a Joint Venture contract. HA/HKS, JV designed the LSU Foundation Building and worked with the Board to advance their goals to better serve LSU and the greater community by creating an iconic facility that will bolster alumni and donor contributions toward academic endeavors. Situated at the NW corner of Nicholson Drive and Skip Bertman Drive, the 38,250 s.f. LSU Foundation Business Building was the first building

	completed in the $300 Million mixed-use development that borders Nicholson Drive and houses graduate student housing, retail, office space, and restaurants/entertainment establishments. In support of the Foundation's goals, the new building was designed and sited in a manner that establishes its identity as the cornerstone for the mixed-use Nicholson Gateway Development. At the same time, the design of the building encompasses both a sense of history and progress, while still being respectful of its campus context and heritage.
06/11-10/14	**New Brusly Law Enforcement Complex** – Mr. Holden was the Architect of Record for this facility. HA Master Planned and designed a three-building Law Enforcement Complex for the Town of Brusly. Their existing facilities were adequate but old and lacked many new technologies and conveniences essential for efficient operation. Holden Architects provided an up-to-date facility that provided the men and women in uniform with modern working, living, and training environments while keeping within the constraints of a realistic budget. The project was broken into three construction phases, allowing the departments to continue working in their existing facilities while the new building was being built. This also allowed the city to spread the cost of the project over multiple fiscal years. The result was a complex that will serve the city for many years to come without placing an excessive burden on the taxpayers today. The design features a jointly used engine bay wing sandwiched between Police and Fire Departments. While each department has its autonomy, the City has the benefit of sharing utility infrastructure and energy costs on a single structure and site. Holden Architects also assisted the City with preparing the grant and Capital Outlay requests. The total construction cost was approximately $3.3 Million.
04/15-Present	**Walk-On's Sports Bistreaux**– Walk-On's was named the #1 Sports Bar in America by ESPN in 2012. Holden Architects, the original Prototype Architect worked with the founders Brandon Landry and his partners to design and develop multiple prototypes for this restaurant chain to launch nationally. HA is Architect of Record for 19 of their restaurant locations involving five regional franchises and continues to assist the Corporate office with the rapid growth of the business enterprise.
01/98-09/01	**St. Tammany Justice Center – The 22nd Judicial District Court House and Parish Prison Renovation and Addition, Covington, LA** - HA was the design architect for all the security systems and holding areas of the new $35 million Court House. Mr. Holden and was Architect of Record for the $20 million / 165,000 s.f. St. Tammany Parish Jail Addition that included two new dormitories, an intake center, renovation of the existing jail and administrative building, and design of a future third maximum security facility. HA worked with RCL Engineering, the Prime Consultant, and PGAL Architects, the lead justice center designer of the Court House.

16. Staff Experience:

Firm employed by	Holden Architects, A Professional Corporation		
Name	**Kyle Daroca, RA**	Years of experience with this firm/employer	1
Title	Architect	Years of experience with other firm(s)/employer(s)	5.5
Degree(s) / Years / Specialization		Bachelor of Architecture / 2014 / Architecture	
Active registration number / state / expiration date		#8934 / LA / 12-31-2022	
Year registered	2018	Discipline	Architect
Contract role(s) / brief description of responsibilities		Project Architect	

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).
07/20-Present	**Motor City Apartments, Baton Rouge, LA** – Mr. Daroca is serving as Project Manager for a joint venture between HA and Chenevert Architects – HA/CA, JV – beginning with the Design Development phase of this project, which is currently under construction. This 110-unit multi-family residential project includes 104,000 sf of new construction for the apartments and the adaptive reuse of an 8084 sf automotive building – built in the early 1920's – into a tenant activity center and apartment offices. The renovation portion of this project includes abatement of hazard materials, replacement of the roof and storefront, and providing new HVAC, fire protection, plumbing, and electrical systems. In addition to managing the architectural team through Design Development, the completion of Construction Documents, and into Construction Administration, Mr. Daroca was responsible for ensuring compliance with all applicable codes – building, life safety, Fair Housing Act, energy, and zoning. Because this project received funding through the LHC, it is required to comply with IIBHS Fortified Gold and the Enterprise Green Community Criteria which Mr. Daroca was responsible for coordinating with the respective reviewing entities and design team. The estimated construction cost of this project is $18,000,000.
08/20-Present	**Coquille Park Recreation/Events Pavilion and Offices, Covington, LA** – Holden Architects is serving as the Architect of Record for this project which is part of the overall Coquille Park Development. The project includes two buildings, the 13,800 sf recreation/events pavilion and the adjacent 900 sf office building, and is currently in the Bidding and Negotiations phase. The pavilion is designed with an aesthetic reminiscent of an old sawmill yet anchored in the present with contemporary features such as operable, expansive storefront and cutting-edge finishes to increase the acoustic and energy performance of the space. The primary structure of the building is a customized, prefabricated metal building with a clerestory added along the roof ridgeline. This main structure, clad with rustic board-and-batten siding and corrugated metal, is surrounded by timber-framed porches topped with corrugated metal roofing. The pavilion will serve primarily as an open-air space to support the recreation programs hosted by the park. The secondary use for this structure will be as an enclosable, reservable event space to host large private functions. A collapsible and removable stage; configurable, overhead lighting truss system; and supporting A/V hookups will allow for bands, DJs, speakers, etc. A warming kitchen at the west end of the building will provide catering support for events. An entirely glass encased cafe creates a jewel-box, focal destination at the west end of the building overlooking the adjacent pond, shoreline trail, and future amphitheater. The adjacent office is a house-like building designed in the character of downtown Covington's Queen Anne and Creole cottages. This historically-detailed building will house office day-to-day and serve as a pre-event space for bridal parties, bands, and other groups needing private quarters. Mr. Daroca is managing the architectural team through the design and documentation of both buildings and providing QA/QC for the Construction Documents. The estimated construction cost of the project is $2,500,000.
06/19-12/19	**St. James Episcopal Church Sanctuary Renovation, Baton Rouge, LA –** Mr. Daroca worked as the Project Manager/Architect through the Schematic Design and Design Development phases of this project prior to moving to a new firm. This project involved extensive restoration of deteriorating plaster walls, hardwood floors hidden beneath carpet for nearly half a century, and ornate woodwork adorning the sanctuary walls, all of which required careful cataloging and planning. In addition to the restorations, several systems – including

	HVAC, electrical, lighting, and A/V – were updated to drastically improve the energy and acoustic performance of the space. During the design of the project, Mr. Daroca coordinated the systems, finishes, and architectural upgrades with the organ manufacturer who was concurrently designing a new organ optimized for this space. A rather unorthodox sprinkler system design was carefully produced to provide the necessary fire protection while protecting the sacred, historic beauty of the sanctuary.
09/17-08/18	**University of Tennessee at Chattanooga Crossroads Dining Hall** – Mr. Daroca served as the Project Manager/Architect for this project. The approximate construction cost of the project was $5,000,000. Located in the center of UTC's campus at one end of the central quadrangle in the basement of historic McCallie Hall, the Crossroads Dining Hall serves as the primary residential dining facility on campus. In the 1980's an addition to the basement was added on the downhill side of the building and through a number of renovations and occupancies it became a dining hall. The dining hall prior to this renovation was quite apparently occupying the basement of a building, with plumbing, ducts, and conduit cluttered overhead and ceilings as low as seven feet in some areas. Two concepts drove the design for this space: 1. Consolidating the complex systems and infrastructure required for the kitchens and overall space, adding a sprinkler system, decluttering the space, and raising the effective ceiling height; and 2. Open the exterior walls facing the quadrangle and create an outdoor dining space that would blur the boundary between interior and exterior. This project required creative design not only for the aesthetics of the space, but also for overcoming the challenges the structure posed for organizing and simplifying the various systems.
01/17-08/17	**University of Tennessee Thompson Boling Arena Dining** – Mr. Daroca served as the Project Manager/Architect for this project. The approximate construction cost of the project was $1,500,000. Located inside of Thompson Boling Arena – UT's basketball arena – this dining space served both students and fans alike. The separated dining and servery spaces were unchanged since the mid-1980s and in need of not only an architectural update, but an upgrade in kitchen systems, equipment, and layout. Acting as the Food Service designer for this project, Mr. Daroca vetted the new kitchen design with the local operations director and specified the required equipment. In addition to the new kitchen, one national brand – Which Wich – and one international brand – Bento Sushi – were added to the servery requiring coordination with their in-house kitchen equipment consultants and designers. The wall dividing the servery and dining space was removed to open the space and an upgraded lighting layout produced a brighter, more inviting experience. School branding was intentionally woven into the finishes and furniture to tie the dining space in with the rest of the arena.

16. Staff Experience:

Firm employed by	Regis Infrastructure Group, LLC		
Name	**Raul H. Regis, PE**	Years of relevant experience with this employer	5
Title	Chief Engineer	Years of relevant experience with other employer(s)	27
Degree(s) / Years / Specialization		B.S. / 1990 / Civil Engineering	
Active registration number / state / expiration date		#PE.0034006 / LA / 09-30-2022	
Year registered	2008	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		Sr. Roadway 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).
03/14 – 02/15	**SPN. H.004113, LADOTD, I-12 to Bush, St. Tammany Parish, LA** – Project Manager for this project providing approximately 5.5 miles of a 4 lane divided highway from the proposed LA 3241 to the LA 40/LA 41 intersection in Bush, LA. As a sub the corresponding scope for this project was the preliminary design of the bridge over Talisheek Creek, approximately 500' in length. Additional tasks included the development of the bridge scour report at Talisheek Creek, and the QA/QC of the roadway plans for the project.
01/14 – 02/15	**I-10 Widening from Highland Road to LA-73, Baton Rouge, LA** – Project Manager for this project to widen I-10 from a four lane divided section to a six lane divided section. The widening will require the construction of an additional lane of traffic in both eastbound and westbound directions. The proposed additional lane of traffic will require the bridge over Highland Road to be replaced and the existing bridges over Bayou Manchac, and LA-73 to be widened. The approximate length of the project is 6.7 miles.
08/08 – 05/13	**SPN. 450-10-0108, LADOTD - I-10 Widening from Siegen Lane to the I-10/I-12 Split, Post Design Services and Geotechnical Support, Baton Rouge, LA** – Project Manager responsible for the coordination of the geotechnical activities for all bridge substructures, and post design services during construction. Other responsibilities included the re-design of the traffic control plans for the I- 10 mainline and ramps, approximately 4.6 miles. Additionally, this project required the close coordination with the LDOTD Project Engineer and his staff, and the contractor's construction manager.

16. Staff Experience:

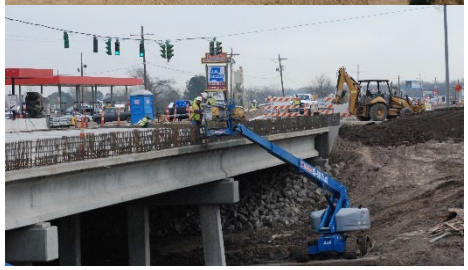
Firm employed by	Regis Infrastructure Group, LLC		
Name	**Qasem Abughazleh, PE, PhD**	Years of relevant experience with this employer	2
Title	Bridge Engineer	Years of relevant experience with other employer(s)	23
Degree(s) / Years / Specialization		B.S. / 1987 / Civil Engineering M.S. / 1990 / Structural Engineering PhD / 1997 / Structural Engineering	
Active registration number / state / expiration date		#PE.0034191 / LA / 03-31-2023	
Year registered	2008	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		Sr. Structural 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).
08/08 – 05/12	**Interstate 10 Widening, I-12 to Siegen Lane Baton Rouge, LA -** Senior Structural Engineer responsible for performing an independent design review of the five bridges on the project. His review involved: independently checking the substructure and superstructure of each bridge, verifying size, type and number of reinforcement, checking constructability, and verifying all quantities. He prepared a report on each bridge detailing his findings. All bridges were designed using LRFD.
05/09 – 01/10	**SR 607 Roadway Widening, Design, and Engineering Services, Hancock and Pearl River Counties, MS -** Senior Structural Engineer responsible for the design of the five span bridge on this project. This bridge involved crossing a major stream parallel to an existing bridge. He was also responsible for the bridge hydraulic report.
12/09 – 02/11	**MS 475 Extension, Old Brandon Road to US 80, Rankin County, MS** - Senior Structural Engineer responsible for preparing the structure type selection reports for the two bridges on this project. He has prepared preliminary plans for one, two and four span bridges for each location. Each alternative also includes an investigation of the best type of girder to be used, including steel and concrete shapes, evaluation of abutment types and piers, and preparation of cost estimates. Ultimately, four spans were designed for the NB and SB bridges.
04/00 – 06/02	**Bridge #7, Section "B", "C" and "D's I-40 and White Bridge Interchange, Davidson County, TN -** Senior Structural Engineer responsible for the design of six bridges. First, continuous 3 span curved Pre-cast Pre-stressed Bulb-Tee with concrete deck. Second, Design a semi Y curved steel bridge "C", connecting bridges "B"/ curved concrete bridge, "A"/ curved plate girder bridge and carrying the combined traffic from White Bridge Road and SR 155 and transmitted that traffic to the "D" bridge. Third, designing for different bridge to carry the traffic from Bridge "C" to the I-40 East. The bridge designed to provide adequate vertical clearance for traffic coming from I-40 East and existing to 50TH St. /Ramp "J". This bridge length is more than half mile.

17. Firm Experience:

Firm name	TRC Engineers, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Retainer Contract for Bridge Preservation (On-System)**	Firm responsibility (prime or sub?)	Prime
Project number	700-99-0429	Owner's name	Louisiana Department of Transportation and Development
Project location	Statewide	Owner's Project Manager	Kian Lam Yap, P.E.
Owner's address, phone, email	1201 Capital Access Rd., Rm 405-T, Baton Rouge, LA 70802-4438 | (225) 379-1330 Kian.Yap@LA.gov		
Services commenced by this firm (mm/yy)	01/08	Total consultant contract cost ($1,000's)	$2,400
Services completed by this firm (mm/yy)	01/14	Cost of consultant services provided by this firm ($1,000's)	$2,000

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)
* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.



Project Relevance:
- Structural rehab/repair plans (fixed and movable)
- Task order based contract
- Permit tasks
- MOT plans
- Lighting

Provided engineering and related services under a retainer contract that included roadway design, roadway lighting design, fixed and movable bridge design, permit sketches, drafting, and construction related services at proposed bridge sites throughout Louisiana. A sampling of the Task Orders completed under the contract includes:

- Rehabilitation of I-10 Mississippi River Bridge at Baton Rouge - False chord expansion devise modifications and drainage system modifications; floor beam and floor beam connection distortional crack retrofit repairs; crack treatment and 1-3/8" epoxy-urethane co-polymer overlay system for bridge decks; overall maintenance of traffic scheme; and construction engineering related services.
- Little Caillou Bayou Bridge (movable), Bayou Lacarpe Bridge (movable) - Structural repair engineering services, cleaning and painting, construction cost estimate
- Bayou Queue De Tortue Spot Replacement on LA 705, Route LA 705, Vermilion Parish
- West Choudrant Creek Relief Bridge Scour Repairs, Route 1-20, Lincoln Parish
- Beaver Creek Scour Repairs, Route LA 1051, Tangipahoa Parish
- Scour Repair at Pier 2 and 3 Middle Pearl River, Route US 90, St. Tammany Parish
- Bear Creek Relief Bridges Scour Repair, Route 1-20, Bienville Parish
- Bear Creek, Young's Bayou, Dugdemona River and Flagon Bayou Scour Repairs, Routes US 165 and LA 6, Grant, Natchitoches, Winn and Rapides Parishes
- Coulee De Manuel, Anselm Coulee and Long Point Gully Scour Repairs, Routes LA 29, LA 733 and LA 13, Evangeline, Lafayette and Acadia Parishes
- Union Pacific Railroad near Greenwood - Complex structural analysis and plan preparation for a heavily-skewed, 345-foot shallow steel plate girder superstructure (110', 125', 110') using MDX software)
- LA 77 & 78 Left Turn Lanes (design of 285', 3-span continuous prestressed concrete girder bridge on prestressed concrete pile trestles)

STAFF TO BE USED IN THIS PROPOSAL: D. Krone; J.D. Richard; D. Clayton; M. Paul; X. Liu

17. Firm Experience:

Firm name	TRC Engineers, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Retainer Contract for Bridge Preservation (On-System)**	Firm responsibility (prime or sub?)	Prime
Project number	700-99-0429	Owner's name	Louisiana Department of Transportation and Development
Project location	Statewide	Owner's Project Manager	Kian Lam Yap, P.E.
Owner's address, phone, email	1201 Capital Access Rd., Rm 405-T, Baton Rouge, LA 70802-4438 | (225) 379-1330 Kian.Yap@LA.gov		
Services commenced by this firm (mm/yy)	08/12	Total consultant contract cost ($1,000's)	$11,300
Services completed by this firm (mm/yy)	08/17	Cost of consultant services provided by this firm ($1,000's)	$8,441

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)
* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:
- Structural rehab/repair plans (fixed and movable)
- Task order based contract
- Permit tasks
- Mechanical and electrical rehabilitation (movable)
- Load ratings
- Bridge inspection
- Lighting
- Instrumentation & load testing

Provided engineering and related services under a retainer contract that includes roadway design, roadway lighting design, fixed and movable bridge design, preliminary and final bridge designs, topographic surveying, bridge structural inspections and evaluations and load ratings, testing and sampling, instrumentation and non-destructive load testing, environmental permit services, drafting, and construction related services to include shop drawing reviews at proposed bridge sites throughout Louisiana.

TRC was assigned a total of eight (8) Task Orders under this contract, the most relevant of which consists of the following:

- H.003866.5, I-49 North / I-220 interchange - ramp structures, new bridge design
- H.002133.5, Bayou Queue De Tortue - roadway and bridge replacement design
- H.002562.5, Bayou LaLoutre Vertical Lift Bridge - condition assessment, rehabilitation design, electrical system design, operator house design and foundation
- H.001234.5, LA 1 Port Allen Canal Bridge - preliminary design and roadway design, including traffic studies and counts
- H.003495.6, I-49 North, Segment K, Phase 1 - construction services, RFI and submittal reviews
- H.011111.6, I-49 North, Segment K, Phase 2 - construction services, RFI and submittal reviews
- H.009106.5, US 90 over Bayou Ramos - live load testing and bridge monitoring
- H.009859.5, US 90 over Bayou Ramos and US 61 over Bonnet Carre Spillway - bridge load monitoring and maintenance

STAFF TO BE USED IN THIS PROPOSAL: D. Krone; J.D. Richard; D. Clayton; M. Paul; X. Liu; M. Schrepfer;

17. Firm Experience:

Firm name	TRC Engineers, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Retainer Contract for Complex Bridge Rating On-System Trusses and other Complex Bridges**	Firm responsibility (prime or sub?)	Prime
Project number	400004920	Owner's name	Louisiana Department of Transportation and Development
Project location	Statewide	Owner's Project Manager	William Metcalf, P.E.
Owner's address, phone, email	1201 Capital Access Rd., Rm 405-T, Baton Rouge, LA 70802-4438 | (225) 379-1741 William.Metcalf@LA.gov		
Services commenced by this firm (mm/yy)	03/15	Total consultant contract cost ($1,000's)	$4,784
Services completed by this firm (mm/yy)	03/20	Cost of consultant services provided by this firm ($1,000's)	$3,532

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)
* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:
- Complex bridge structures
- Load rating
- Task order based contract
- Development of repair strategies
- Bridge inspections

TRC performed engineering services associated with the completion of complex bridge rating (on-system trusses and movable bridges per MBE) for statewide projects covered by a Retainer Contract under separate Task Orders. Services being completed under this 5-year contract include: **Plan and Document Retrieval and Review**; **Bridge Inspection** for the purpose of producing the most accurate rating by accounting for field conditions and gathering field measurements to assist with load rating and record recovery; performance of a **System Structural Modeling and Analysis** of each assigned bridge to determine dead load and live load effects in the members, including the use of a three-dimensional structural model for complex bridges when required; **Load Rating** of each assigned bridge based on present condition, capacity and loading using AASHTOWare BrR software, with all structures being rated using the load rating provisions in the Current AASHTO Manual for Bridge Evaluation and the DOTD Policies and Guidelines for Bridge Rating and Evaluation; **Peer Review Ratings**, other reviews of ratings performed by others; Quality Assurance reviews of all load ratings; generation of **Repair Strategies and Plan Documents** for bridges when needed; and the **Sampling, Instrumentation and Non-destructive Testing** of existing materials for evaluation as needed. The bridges assigned to TRC under the two Task Orders to date included the following:

- Bridge over Bayou Teche at Adeline (movable)
- LA 47 Gulf Intracoastal Waterway (tied arch/deck truss)
- LA 27 over Intracoastal Waterway Bridge (movable)
- LA 657 over Bayou LaFourche (movable)
- LA 319 Intracoastal Canal Bridge (movable)
- LA 1 Bridge over Atchafalaya River (truss)
- US 90 Riverbound Expressway (deck truss)
- LA 654 over Bayou LaFourche (movable)
- LA 83 over Patout Bayou (movable)
- Local Road over Bayou Terrebonne (movable)

TRC also coordinated work on the following bridges which were completed on behalf of the TRC team by our sub-consultants under the two assigned Task Orders: Charenton Bridge, Jackson Street Bridge, West Middle Pearl River Bridge, and LA 2 Millers Bluff bridge

STAFF TO BE USED IN THIS PROPOSAL: Durk Krone, J. Dallas Richard, Xianzhi Liu, Michael Paul, Mark Castay, Dong Wang, Michael Schrepfer, Nichole Caiazzo, Robert Schamber, David DeLeeuw

17. Firm Experience:

Firm name	TRC Engineers, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**LA 47: IWGO Bridge Rehabilitation**	Firm responsibility (prime or sub?)	Prime
Project number	H.011965.5 | H.011965.5-2	Owner's name	Louisiana Department of Transportation and Development
Project location	Orleans Parish	Owner's Project Manager	Kelly Kemp
Owner's address, phone, email	1201 Capital Access Road, Baton Rouge, LA 70802-4438 | (225) 379-1809 Kelly.Kemp@LA.gov		
Services commenced by this firm (mm/yy)	03/17	Total consultant contract cost ($1,000's)	$2,382
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$1,955

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)
* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:
- Bridge inspection
- Structural rehabilitation plans
- MOT plans
- Temporary jacking scheme
- Coating study

TRC was responsible for preliminary and final plans to address the repair and rehabilitation of all substructure and superstructure elements of this historically designated bridge consisting of 1,248 feet of steel main spans with cantilevered arms and tied-arch (main span); 3,304 feet of welded steel girder approaches; 1,590 feet of prestressed girder approach spans; and 480 feet of concrete slab spans. Work items associated with the repair, cleaning and painting of the structure were defined using on-site inspections supplemented with previous DOTD and consultant developed inspection reports, non-destructive testing reports, load rating reports, and as-built and widening plans. The resulting deliverables included preliminary and final plans along with pay items and quantities.

Repair locations were identified through inspection of the main spans, including upper and lower chords, laterals, struts, and floor beams. TRC staff analyzed the deficiencies and provided typical repair details, many to final plan level. A proposed jacking scheme was also developed. Associated repairs included:

- approach steel girder splice and web repairs
- cross-frame repairs
- prestressed girder repairs

A computer model was also developed to conduct a gusset plate condition analysis, along with the identification locations and quantities with respect to pavement concrete patching, bent and riser patching, deck patching and substructure patching. Maintenance of traffic plans were developed for right-lane and left-lane closures, NB and SB ramp closures, and total closure with detour. Engineering support is presently being provided during construction.

As a separate Task Order during preliminary engineering, TRC managed the completion of a study to identify and conduct testing on various coating systems to determine their potential to provide 50 years of maintenance-free service life. TRC managed and coordinated with a paint consultant to carry out the study which identified a coating manufactured by TNEMEC Company, Inc. as being superior to the other 13 systems evaluated.

STAFF TO BE USED IN THIS PROPOSAL: D. Krone; J.D. Richard; M. Paul; M. Schrepfer; X. Liu

17. Firm Experience:

Firm name	TRC Engineers, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Mississippi River Bridge Rehabilitation, US 190**	Firm responsibility (prime or sub?)	Prime
Project number	H.004266 (700-24-0031)	Owner's name	Louisiana Department of Transportation and Development
Project location	East Baton Rouge Parish	Owner's Project Manager	Chris Guidry, P.E.
Owner's address, phone, email	1201 Capital Access Road, Baton Rouge, LA 70802-4438 | (225) 379-1328 Chris.Guidry@LA.gov		
Services commenced by this firm (mm/yy)	07/10	Total consultant contract cost ($1,000's)	$3,579
Services completed by this firm (mm/yy)	08/16	Cost of consultant services provided by this firm ($1,000's)	$2,979

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)
* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:
- Bridge inspection
- Structural rehabilitation plans
- MOT plans
- Bridge coating / containment
- Jacking and temporary support systems

TRC was responsible for preliminary engineering and final design associated with the structural rehabilitation, cleaning, and painting of this major railroad/highway bridge across the Mississippi River. The bridge consists of 8,884 feet of railroad approach spans; 2,552 feet of highway approach spans; and 3,326 feet of cantilever steel truss main spans. Rehabilitation / replacement work included:

- cross frame chord members and connection angles
- top lateral bracing members
- main truss vertical and diagonal lacing bars
- deteriorated interior stiffeners of main truss verticals
- deteriorated diagonals at portals
- anchor bolt and column rehabilitation for approach bents
- bearing pins and corroded bearings
- false chord expansion devices
- cracked gusset plates
- patching of concrete spalls at bearings and retaining walls
- removal of existing lead-based paint and the application of a new coating system.

Schemes for jacking and temporary support of members during rehabilitation and structural analysis for traffic reduction during phases of construction were included, as was traffic control and phasing for maintenance of traffic. As the structure carries rail as well as vehicular traffic, TRC assisted the DOTD in coordinating all work with the Union Pacific and Kansas Southern Railroads.

In addition to the above work, special bridge inspections were required for Phases 1 (highway approaches and truss spans) and 2 (railroad approaches). TRC performed these inspections using in-house NBIS inspectors, provided and operated all access equipment, and coordinated and provided all traffic control operations with DOTD, parishes, and state police.

STAFF TO BE USED IN THIS PROPOSAL: D. Krone; J.D. Richard; M. Paul; X. Liu; M. Schrepfer

17. Firm Experience:

Firm name	Wiss, Janney, Elstner Associates, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Danziger Lift Bridge Repair**	Firm responsibility (prime or sub?)	Prime
Project number	Contract 4400009424, H.000303	Owner's name	Louisiana Department of Transportation and Development
Project location	New Orleans, LA	Owner's Project Manager	Zhengzheng (Jenny) Fu
Owner's address, phone, email	1201 Capitol Access Rd., 6th floor, Baton Rouge, LA 70802 | (225) 379-1321 ZhengZheng.Fu@LA.GOV		
Services commenced by this firm (mm/yy)	07/19	Total consultant contract cost ($1,000's)	$1,386
Services completed by this firm (mm/yy)	Present	Cost of consultant services provided by this firm ($1,000's)	$1,386

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:

- Movable bridge (vertical lift)
- In-depth inspection
- Rehabilitation design of electrical and mechanical systems
- Construction phase support and testing

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

- Improving the lift span riding surface on the orthotropic deck through polyester polymer concrete repairs.
- Identification of water and other damage, design of repairs, and replacement of pinion shafts and bearings.
- Identification of the approach span expansion joints being packed with debris. Cleaning of the expansion joints mitigated movement at the lift span joints.
- Design of a new lift span skew control system that was required after existing components were removed from the bridge and could not be relocated or replaced in kind. The design is complete. Implementation is ongoing.
- Design of electrical controls for the clutches associated with the span drive differentials. The design is complete. Implementation is ongoing.
- Strain gage testing to measure span balance and implementation of weight changes to improve seating of the span. Testing also showed that span drive differentials on both towers were not functioning properly. WJE worked with the manufacturer to sort out how to adjust the clutches in the differentials to function properly.

STAFF TO BE USED IN THIS PROPOSAL: John Williams, Gareth Rees, Yang F. Zheng

17. Firm Experience:

Firm name	Wiss, Janney, Elstner Associates, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Columbus Road Lift Bridge**	Firm responsibility (prime or sub?)	Sub
Project number	PID 5383	Owner's name	Ohio Department of Transportation / City of Cleveland
Project location	Cleveland, OH	Owner's Project Manager	Wes Weir (WSP)
Owner's address, phone, email	Skylight Office Tower, 1660 W. 2nd Street, Suite 820, Cleveland, OH 44113 | (216) 416-1418 Wesley.Weir@wsp.com		
Services commenced by this firm (mm/yy)	08/08	Total consultant contract cost ($1,000's)	$647.5
Services completed by this firm (mm/yy)	08/18	Cost of consultant services provided by this firm ($1,000's)	$647.5

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:

- Movable bridge (vertical lift)
- Historic structure
- Scoping inspection/condition assessment
- Replacement design of electrical and mechanical systems
- Construction phase support and testing

WJE personnel provided engineering services for all phases of the Columbus Road Bridge rehabilitation project, from inception through completion of construction. The objective of the mechanical design was to maintain the historic character of the structure from a visual perspective, while significantly reducing maintenance requirements and improving overall system efficiency.

A scoping inspection of the mechanical machinery and electrical systems determined their suitability for continued long-term service and compliance with current AASHTO code requirements. A comprehensive report was then prepared that included a condition assessment of the bridge, rehabilitation alternatives, and associated cost estimates. All work was closely coordinated across disciplines with the engineers responsible for the rehabilitation of the structure, which required major rehabilitation of the lift span towers and complete replacement of the lift span.

The new mechanical design provided for a complete replacement of all span support machinery, span drive machinery, and span locks. The new electrical design provided for a complete replacement of the bridge electric utility service; new standby generator service; and control system, including all field feedback devices; and replacement of traffic gates and traffic barriers. Control system technology uses relay interlocking with a Programmable Logic Controller for system monitoring, including the capability for remote monitoring and diagnostics. The span drive system uses digitally controlled variable speed motor drives.

Construction services included review of shop drawings and Requests for Information (RFIs), shop inspection of all mechanical fabrications, and field inspection of machinery installation.

STAFF TO BE USED IN THIS PROPOSAL: Robert Tosolt, Gareth Rees, John Williams, Yang F. Zheng

17. Firm Experience:

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

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:

- Movable bridge (swing span)
- Historic structure
- Scoping inspection
- Rehabilitation design of electrical and mechanical systems
- Construction phase support and testing

Wiss, Janney Elstner Associates provided the mechanical and electrical engineering for the replacement of all machinery on this center bearing swing span bridge and the structural engineering for rehabilitation of the movable swing span and fixed approach spans.

Movable bridge services included a scoping inspection, bridge design report, preparation of plans, specifications, and cost estimates for all machinery, as well as provisions for construction services. The intent of the project was to rehabilitate this historic structure to provide long-term reliable service. Essential design objectives were to replace the deteriorated and outmoded machinery systems with current state-of-the-art systems that would require less maintenance and be more reliable and efficient than the existing drive which had experienced failures and was in a state of advanced wear.

The **mechanical design** provided complete details for new span drive machinery and span support machinery in accordance with the current AASHTO requirements. The span drive machinery was comprised of components with a proven history of use on movable bridges and was powered by an electric motor. The span support machinery included a new bronze plain center bearing, balance wheels, and a wedge at each corner driven by an electro-mechanical drive train. The design also included center pier live load support rollers. The machinery and structure were protected from risks due to over-travel with energy absorbing end of travel bumpers at the full-open and the full-closed positions. Elastomeric bumpers were provided as a simple low-cost solution with minimal maintenance requirements. The **electrical design** included the provision of new drives, motors, control system, and field devices for the span drive machinery and the end wedge machinery. Electrical design details also included design and integration of new traffic control features, bridge and maintenance lighting, and a CCTV system.

WJE services also included a review of existing coating systems, specifications of new coatings, metalizing and galvanizing, and construction administration and consulting during installation of new coatings.

STAFF TO BE USED IN THIS PROPOSAL: Gareth Rees, Robert Tosolt, John Williams, Yang F. Zheng

17. Firm Experience:

Firm name	KTA-Tator, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**I-310 Luling Bridge and US90 Morgan City Bridges**	Firm responsibility (prime or sub?)	Sub
Project number	4400005960 (TO #2)	Owner's name	Louisiana Dept. of Transportation and Development
Project location	Luling and Morgan City, LA	Owner's Project Manager	James P. Gregg (HNTB)
Owner's address, phone, email	10000 Perkin Rowe, Suite 640, Baton Rouge, LA 70810 | (225) 368-2815 jgregg@HNTB.com (Prime)		
Services commenced by this firm (mm/yy)	02/17	Total consultant contract cost ($1,000's)	$5,000
Services completed by this firm (mm/yy)	05/17	Cost of consultant services provided by this firm ($1,000's)	$27

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:

- Corrosion assessment

The I-310 Bridge over the Mississippi River is referred to as the Hale Boggs Bridge or the Luling Bridge. The bridge is a cable stayed design with two main towers; two large box girders run along the underside of the entire bridge deck. The bridge members, including the towers, box girders and cross girders, are fabricated from weathering steel. The bottom six feet of the tower interiors and the interiors of the cross girders are coated. In 2017, as a subconsultant under a task order agreement, KTA performed a corrosion assessment of the weathering steel towers and girders, performed laboratory testing, and prepared a report detailing the conditions found and providing recommendations for the remediation of the corrosion problems.

In 2017, KTA performed a corrosion assessment of the US 90 Morgan City Bridge over the Atchafalaya River located in Morgan City, Louisiana. Ramp A, Ramp F, span over LA 182, Ramp I, Ramp J, span over Victor II, Crook Collins Canal, Levy Canal, East approach, and West approach spans were also included in the assessment. KTA also performed laboratory testing, and prepared a report that detailed the conditions found and provided recommendations for remediation of the coating problems.

STAFF TO BE USED IN THIS PROPOSAL: Robert Lanterman

17. Firm Experience:

Firm name	KTA-Tator, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Jackson Avenue (Red River) Lift Bridge**	Firm responsibility (prime or sub?)	Sub
Project number	4400013322 (TO #1)	Owner's name	Louisiana Dept. of Transportation and Development
Project location	Alexandria, LA	Owner's Project Manager	John Weres, PE (Gresham Smith)
Owner's address, phone, email	10000 Perkins Rowe, Suite 280, Baton Rouge, LA 70810 | (225) 960-5480 john.weres@greshamsmith.com (Prime)		
Services commenced by this firm (mm/yy)	02/20	Total consultant contract cost ($1,000's)	$5,000
Services completed by this firm (mm/yy)	05/20	Cost of consultant services provided by this firm ($1,000's)	$12

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:

- Coating Condition assessment
- Maintenance painting recommendations

The Jackson Avenue (Red River) Lift Bridge in Alexandria, Louisiana carries two lanes of traffic over the Red River. The main span is a through truss design with a 300' vertical lift span centered between the two towers.

Under Gresham Smith's task order agreement, KTA completed a coating condition assessment of the Red River Lift Bridge located in Alexandria, Louisiana. The coating condition assessment was performed on February 18 -19, 2020. The purpose of this assessment was to determine the condition of the existing coatings on the structure in order to develop a maintenance painting strategy for the bridge.

A visual assessment of the coated surfaces was conducted to determine the type, extent, and location of coating breakdown and corrosion on the structure. Coating thickness, number of coats, and adhesion were determined using appropriate instrumentation. Samples were removed for further laboratory examination to determine if toxic metal concentrations were present in the existing coatings and to generically identify the coating type. Photographs of typical coating conditions were taken. The results of the field and laboratory testing, a discussion of those results, and photographs were included in a report prepared and submitted to Gresham Smith. A discussion of various maintenance painting options was presented along with recommendations for the maintenance painting on this structure.

STAFF TO BE USED IN THIS PROPOSAL: Robert Lanterman

17. Firm Experience:

Firm name	Holden Architects, A.P.C.	Past Performance Evaluation Discipline(s)*	Architect
Project name	**Judge Seeber Bridge Repair**	Firm responsibility (prime or sub?)	Sub
Project number	046-31-0053	Owner's name	Louisiana Department of Transportation and Development
Project location	New Orleans, LA	Owner's Project Manager	John Guidry, P.E.
Owner's address, phone, email	1201 Capital Access Road, Baton Rouge, LA 70802-4438 | (504) 437-3112 John.Guidry@LA.GOV		
Services commenced by this firm (mm/yy)	09/09	Total consultant contract cost ($1,000's)	N/A
Services completed by this firm (mm/yy)	06/11	Cost of consultant services provided by this firm ($1,000's)	$8

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:

- Movable bridge rehabilitation
- Architectural design plans for building renovation

Holden Architects served as the architect-of-record under a contract held by ABMB Engineers to renovate the main operation facilities of the Judge Seeber Bridge in New Orleans. A vertical drawstring lift bridge opened in 1957, the Judge Seeber Bridge averages 27,000 commuters daily with additional boat traffic via the Industrial Canal. The primary focus of the project team was to restore all damaged and deteriorated elements of the operation facilities building systems that would assist in preserving the life of the existing bridge. The $500,000 rehabilitation, which was part of a $6.7 million complete bridge renovation, consisted of two portions: the Operator House and the Machinery Rooms.

The Operator House (Part 1) scope of work included new interior walls and finishes; new ceiling systems and lighting fixtures; new plumbing fixtures; replacement of all existing windows with hurricane complaint window systems; door, frame, and replacement hardware for all doors; a new roofing system; complete HVAC system replacement; re-painting of the existing roof access ladder; and repairs to damaged exterior concrete. The Machinery House (Part 2) consisted of restoring the interior and exterior façade of the two deteriorated rooms atop the bridge's east and west banks that house the bridge's vertical lifting equipment. The scope of work included the cleaning of the existing machinery equipment and flooring; replacement of all existing windows with hurricane complaint window systems; door, frame, and replacement hardware; and replacement and painting of the existing galvanized roofing/exterior surfacing. Along with a complete restoration of the bridge components, the rehabilitation of the Operator's House and Machinery Rooms allowed the Judge Seeber Bridge to continue to serve the New Orleans area for years to come.

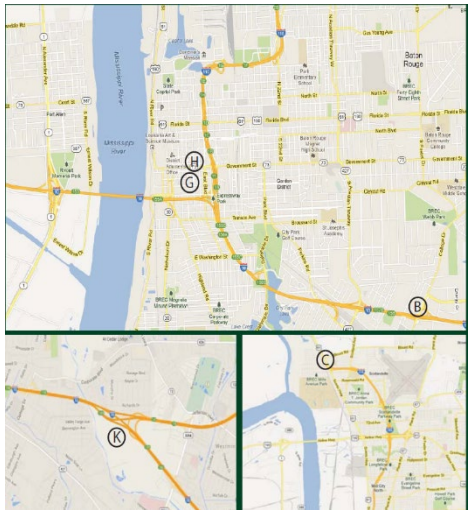
STAFF TO BE USED IN THIS PROPOSAL: Thomas Holden

17. Firm Experience:

Firm name	Urban Systems, Inc.	Past Performance Evaluation Discipline(s)*	Traffic
Project name	**Bridge Preventative Maintenance - District 61**	Firm responsibility (prime or sub?)	Sub
Project number	F.A.P. and SP H.000351	Owner's name	Louisiana Department of Transportation and Development
Project location	Baton Rouge, LA	Owner's Project Manager	Danny Tullier
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70804 | (225) 379-1355 Danny.Tullier@la.gov		
Services commenced by this firm (mm/yy)	11/12	Total consultant contract cost ($1,000's)	Unknown
Services completed by this firm (mm/yy)	09/16	Cost of consultant services provided by this firm ($1,000's)	$69.8

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.



Project Relevance:

- Transportation Management Plan based on LADOTD requirements

The objective was to conduct a **Level 4 Transportation Management Plan** (TMP) based on LADOTD EDSM VI.1.1.8 for bridge component repairs at five (5) locations on I-10, I-110 and I-12 in Baton Rouge. A TMP was critical for these locations as the interstates serve up to 85,000 vehicles per day and closing lanes and/or ramps would have a significant impact on mobility.

Seven-day hourly volume counts were collected and adjusted using LADOTD seasonal and axle factors. A queue analysis was conducted, as specified in LADOTD EDSM VI.1.1.4, to determine when the proposed lane closures could be implemented with the least impact with the high interstate volumes. A safety analysis was conducted based on the LADOTD's Guidelines for Crash Data Analysis, June 2014. Crash rates were calculated for each location and compared to LADOTD's statewide averages and to LADOTD's High Potential for Safety Improvements (formerly the Abnormally High Crash) List. Charts were developed at each location based on collisions by type, log mile and time. An important strategy to minimize work zone impacts was an evacuation plan as I-10 and I-110 are critical arteries during a hurricane evacuation.

A stakeholders meeting was held during the TMP process to obtain input and share information with:

- LADOTD Headquarters
- LADOTD District 61
- LADOTD TMC
- East Baton Rouge Sheriff's Office
- Louisiana State Police
- Baton Rouge Police Department
- Prime and sub consultants.

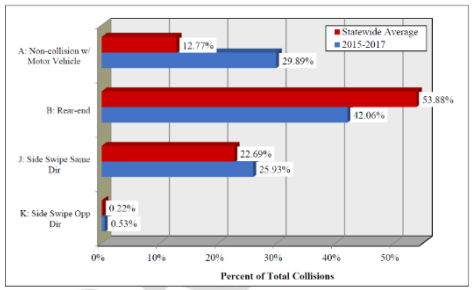
STAFF TO BE USED IN THIS PROPOSAL: Alison Michel, Nichole Stewart

17. Firm Experience:

Firm name	Urban Systems, Inc.	Past Performance Evaluation Discipline(s)*	Traffic
Project name	**I-10 West of LA 108 and I-210 Interchange Improvements**	Firm responsibility (prime or sub?)	Sub
Project number	H.009620.5-1	Owner's name	Louisiana Department of Transportation and Development
Project location	Calcasieu Parish, LA	Owner's Project Manager	Hadi Shirazi
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70804 | (225) 379-1929 | Hadi.Shirazi@la.gov		
Services commenced by this firm (mm/yy)	05/18	Total consultant contract cost ($1,000's)	Unknown
Services completed by this firm (mm/yy)	04/19	Cost of consultant services provided by this firm ($1,000's)	$70

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.



Project Relevance:

- Transportation Management Plan (TMP) based on LADOTD requirements

The objective of this project was to assist with conducting a **Level 4 Transportation Management Plan (TMP)** based on LADOTD EDSM VI.1.1.8 for rubblize and overlay work on US 90 over I-10 in Calcasieu Parish, Louisiana. The objective of the TMP was to identify the challenges and to address strategies to minimize the traffic delays associated with the lane closures, demand volumes and incidents within the construction limits and primary detour roadways on I-10 and I-210 within the Lake Charles Metropolitan Area. This project also updated a TMP performed for the I-210 Prien Lake Bridge Re-Decking and Safety Improvement Project (H.010916.5) dated January 2016.

Traffic data was reviewed within the study area and a field visit was conducted to verify information on roadway geometrics and traffic conditions. A traffic data was report was developed and submitted for inclusion in the TMP document.

A safety analysis was conducted based on LADOTD guidelines. Crash rates were calculated for each location and compared to LADOTD's statewide averages and to LADOTD's High Potential for Safety Improvements (formerly the Abnormally High Crash) List. Charts were developed at each location and compared to statewide averages based on various categories. Crash diagrams were also developed to document the number, location and type of crashes. Each crash report was reviewed for accuracy.

An alternative route analysis was conducted for an assessment of the proposed detour routes. The analysis also included a safety and mobility plan to gather and address concerns for the detour routes.

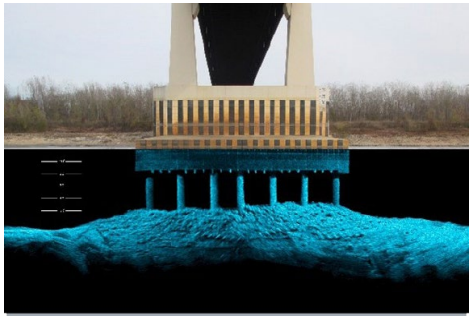
STAFF TO BE USED IN THIS PROPOSAL: Nichole Stewart

17. Firm Experience:

Firm name	Moffatt & Nichol	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**2017 Retainer Contract for Underwater Bridge Inspections, Statewide**	Firm responsibility (prime or sub?)	Prime
Project number	4400009104	Owner's name	Louisiana Department of Transportation and Development
Project location	Statewide Louisiana	Owner's Project Manager	Haylye Brown, PE
Owner's address, phone, email	1212 East Highway Drive, Baton Rouge, Louisiana 70802 | (225) 379-1500 haylye.brown@la.gov		
Services commenced by this firm (mm/yy)	06/17	Total consultant contract cost ($1,000's)	$1,346
Services completed by this firm (mm/yy)	12/21	Cost of consultant services provided by this firm ($1,000's)	$980

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.



Project Relevance:

- Underwater bridge inspection

In June 2017, Moffatt & Nichol (M&N) began a four-year statewide retainer contract with the LADOTD to provide Levels I, II, and III NBIS underwater bridge inspections throughout Louisiana. All inspections were completed in accordance with current FHWA, CFR, AASHTO, and LADOTD standards and guidelines. M&N has performed over 215 underwater bridge inspections under this contract and over 900 inspections total. For each inspection, M&N provided a detailed inspection report within 30 days and entered inspection data into LADOTD's asset management tool (AssetWise). As part of M&N's quality control process, each inspection report was reviewed a minimum of three times, with subsequent reviews performed by team members with increasing levels of experience/ qualifications.

Of particular note, Moffatt & Nichol was tasked with the development of the first comprehensive Bridge Inspection Manual (BIM) for the LADOTD's Bridge Program. Chace Hulon, PE, was Chief Editor. The BIM is designed as a single, centralized reference manual and aligns the goals of the Bridge Inspection Office Headquarters with all nine DOTD districts. It also allows for better communication and quality management between the DOTD project managers, their local bridge owners, and their consultants.

The BIM was designed to be used electronically on tablets as a reference file accessible to all DOTD bridge inspection team leaders. It includes nine chapters intuitively ordered in a systemic fashion with hyperlinks throughout for quick referencing to vital documents. It also allows for documented annual revisions or critical updates following federal policy changes.

Moffatt & Nichol compiled all DOTD reference material, outlined the BIM, held routine (weekly) progress meetings with DOTD PM, FHWA representative, & subject matter experts on the committee, provided statewide programmatic guidance with a national perspective, verified compliance with FHWA's 23 National Bridge Inspection Program Metrics, & presented BIM at a DOTD statewide conference.

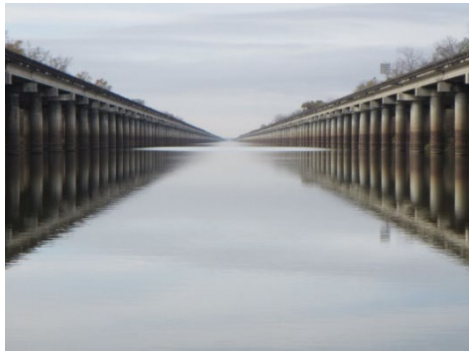
STAFF TO BE USED IN THIS PROPOSAL: Chace Hulon, PE; Steven Armstrong, PE; Joshua Martinez, PE; Jeffrey Gazarek

17. Firm Experience:

Firm name	Moffatt & Nichol	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**Retainer Contract for Underwater Bridge Inspections, Statewide**	Firm responsibility (prime or sub?)	Prime
Project number	4400003533	Owner's name	Louisiana Department of Transportation and Development
Project location	Statewide Louisiana	Owner's Project Manager	Haylye Brown, PE
Owner's address, phone, email	1212 East Highway Drive, Baton Rouge, Louisiana 70802 | (225) 379-1500 | haylye.brown@la.gov		
Services commenced by this firm (mm/yy)	03/14	Total consultant contract cost ($1,000's)	$3,243
Services completed by this firm (mm/yy)	12/17	Cost of consultant services provided by this firm ($1,000's)	$2,822

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.



Project Relevance:

- Underwater bridge inspection

As part of the previous five-year retainer contract, Moffatt & Nichol has performed 10 task orders related to underwater bridge inspections throughout Louisiana. Teams of ADCI-certified engineer- divers provided Level I, II, & III underwater inspections in accordance with the National Bridge Inspection Standards and LADOTD PONTIS Inspection Manual. 687 bridges were inspected statewide. Bridge types inspected consisted of movable swing span bridges, bascule bridges, truss bridges, timber stringer bridges, cable-stayed bridges, single and multi-span girder bridges up to 8 miles in length, constructed of concrete, steel and timber materials. Site conditions included salt, brackish, and freshwater and riverine conditions with varying levels of current having low to no visibility.

Underwater Acoustic Imaging (UAI) was performed in response to emergency investigations following major flood events to inspect scour around the substructure units.

Report submittals included a description of each structure and elements inspected and existing conditions, shoreline conditions, presence of debris in the waterway, with NBIS ratings for Item 60 - Substructure and Item 61 – Channel condition, element level condition states for all elements inspected, and recommendations for repair and maintenance. Three Quality Control reviews were performed for each bridge report by the inspection team and Quality Assurance reviews were performed on 5% of the reports by an independent NBIS team leader.

STAFF TO BE USED IN THIS PROPOSAL: Chace Hulon, PE; Steven Armstrong, EI; Josh Martinez, PE; Jeffrey Gazarek

17. Firm Experience:

Firm name	APS Engineering & Testing, LLC	Past Performance Evaluation Discipline(s)*	Geotech
Project name	**Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge**	Firm responsibility (prime or sub?)	Sub
Project number	H.001352 and H.002273	Owner's name	Louisiana Department of Transportation and Design (sub to Huval & Associates)
Project location	East Baton Rouge Parish, LA	Owner's Project Manager	Thomas M. Gattle, III, P.E.
Owner's address, phone, email	1201 Capitol Access Rd., Baton Rouge, LA 70802-4438 | (337) 234-3798 tgattle@huvalassoc.com		
Services commenced by this firm (mm/yy)	05/20	Total consultant contract cost ($1,000's)	N/A
Services completed by this firm (mm/yy)	Present	Cost of consultant services provided by this firm ($1,000's)	$115

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:

- Geotechnical analyses
- Geotechnical borings
- Lab testing

APS was retained to perform a geotechnical investigation associated with developing the necessary geotechnical recommendations for the design and construction of new bridge structures over the future Comite River Diversion Canal at LA 67 and LA 19, and a new railroad bridge structure over the future Comite River Diversion Canal at LA 19. Work includes embankment slope stability, MSE wall settlement analysis, and a retaining wall. Foundations included PPC piles and drilled shafts. APS also completed the associated borings and lab testing for the project through their Statewide Retainer for Geotechnical Services.

STAFF TO BE USED IN THIS PROPOSAL: Sergio Aviles, Sai Eddanapudi, Surendra Raj Pathak

17. Firm Experience:

Firm name	APS Engineering & Testing, LLC	Past Performance Evaluation Discipline(s)*	Geotech
Project name	**I-10 Widening, LA 415 to Essen Lane**	Firm responsibility (prime or sub?)	Sub
Project number	H.004100	Owner's name	Louisiana Department of Transportation and Design
Project location	Baton Rouge, LA	Owner's Project Manager	Kristy Smith, P.E.
Owner's address, phone, email	1201 Capitol Access Rd., Baton Rouge, LA 70802-4438 | (225) 379-1016 | Kristy.Smith2@la.gov		
Services commenced by this firm (mm/yy)	09/19	Total consultant contract cost ($1,000's)	$400
Services completed by this firm (mm/yy)	Present	Cost of consultant services provided by this firm ($1,000's)	$400

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:

- Geotechnical investigation for structures over waterway

APS was retained through their Statewide Retainer Contract for Geotechnical Services to complete a geotechnical investigation that will provide the LADOTD with the needed information for project planning and design. As part of the Task Order, APS was engaged to drill and sample a total of 52 deep borings starting as the Washington Exit and ending at the LSU Lakes. Along with this drilling and sampling program, APS also tested retrieved soil samples for strength and engineering characteristics. The entire program consists of eight (8) over the water borings and 44 land borings, along with approximately 1,000 tests consisting of Triaxial Compression, Unconsolidated Drained or Undrained, and Atterberg Limits.

STAFF TO BE USED IN THIS PROPOSAL: Sergio Aviles, Sai Eddanapudi, Surendra Raj Pathak

17. Firm Experience:

Firm name	NTB Associates, Inc.	Past Performance Evaluation Discipline(s)*	Survey
Project name	**Retainer Contract for Hydrographic Monitoring of Bridges**	Firm responsibility (prime or sub?)	Prime
Project number	4400012669	Owner's name	Louisiana Department of Transportation and Development
Project location	Statewide, Louisiana	Owner's Project Manager	Joe Arretteig, PLS
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70804 | (225) 379-1105 | joseph.arretteig@la.gov		
Services commenced by this firm (mm/yy)	08/18	Total consultant contract cost ($1,000's)	$1,000
Services completed by this firm (mm/yy)	11/21	Cost of consultant services provided by this firm ($1,000's)	$977.3

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

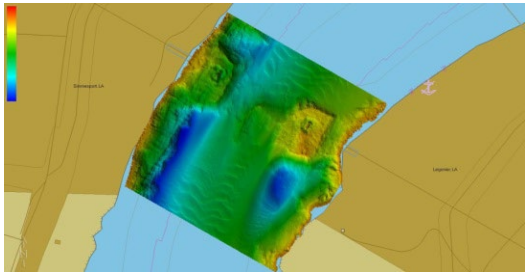
* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

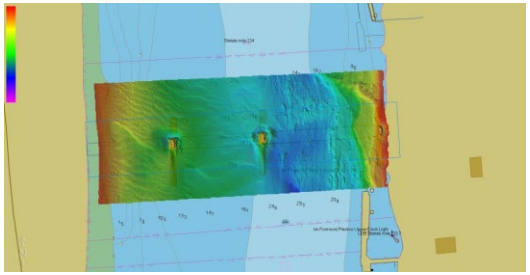
Project Relevance:
- Hydrographic Surveys

NTBA performed upstream and downstream **hydrographic surveying services** for 320 bridge sites throughout the State. The **hydrographic survey** duties included training crews in methods consisting of running range lines at predetermined stations over the water and on the banks and recovering baseline and pre-determined range lines utilizing **LaDOTD** benchmarks, determining water elevations, performing fathometer bar check to ensure correct speed of sound, running and charting predetermined range lines, obtaining marks at predetermined distances along the range lines, and obtaining photographs of the bridge and any debris or adverse conditions. Duties also included the preparation of sketches of the water body surveyed, reduction of chart data from depths to elevations, preparation of a data chart with the depths, elevations, and locations of the data obtained, and preparation of written reports on each survey noting field conditions and findings.

All charts, field notes, photographs, data charts, sketches, and reports were submitted electronically to the State's ProjectWise site.

STAFF TO BE USED IN THIS PROPOSAL: G. Gilleon (PM), J. King (Survey Manager)





17. Firm Experience:

Firm name	NTB Associates, Inc.	Past Performance Evaluation Discipline(s)*	Survey
Project name	**LA 6: Youngs Bayou Bridge Rehabilitation**	Firm responsibility (prime or sub?)	Prime
Project number	4400017713 & H.013821.5	Owner's name	Louisiana Department of Transportation and Development
Project location	Natchitoches Parish, LA	Owner's Project Manager	Barrett Smith, PLS
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802 | (225) 379-1133 barrett.smith@la.gov		
Services commenced by this firm (mm/yy)	12/20	Total consultant contract cost ($1,000's)	$108.1
Services completed by this firm (mm/yy)	03/21	Cost of consultant services provided by this firm ($1,000's)	$108.1

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

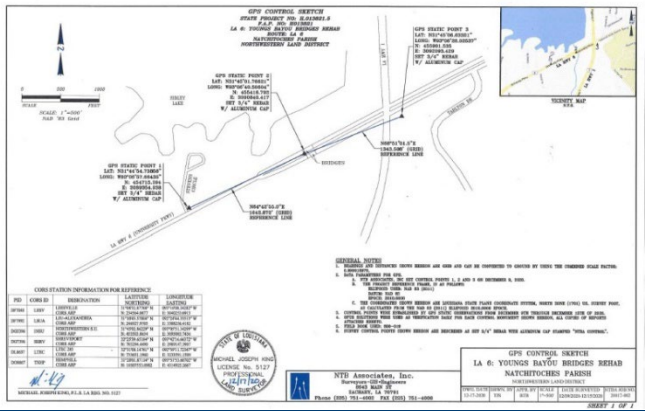
Project Relevance:

- Topographic Survey
- HDS 3D Terrestrial Laser Scanning

NTBA performed topographic surveying services and HDS 3D Terrestrial Laser Scanning for this bridge rehabilitation along LA Hwy. 6 near the intersection of LA Hwy. 1 and LA Hwy. 6. The project began approximately 1,000 feet before the start of each bridge and ended approximately 1,000 feet after the end of each bridge with a total linear distance on 2,120 feet. The width of the survey and DTM was approximately 290 feet.

The complete topographic survey included all utilities with depths and drainage along with finish floor elevations of all buildings within the survey limits. Bridge sub-structures were located. The survey also included under and around the bridge abutment and bridge deck surface. This project was completed in accordance with the most current edition of the Location and Survey Manual and all currently accepted Location and Survey Automation procedures.

STAFF TO BE USED IN THIS PROPOSAL: B. Bunch (Asst. PM), G. Gilleon (QC Surveyor), J. King (Survey Staff/ Scanner Manager)



17. Firm Experience:

Firm name	Bridge Diagnostics, Inc. (BDI)	Past Performance Evaluation Discipline(s)*	Bridge
Project name	**IDIQ Contract for Complex Bridge Load Rating Services Task 5 – Off-System Bridge Ratings and Evaluation Statewide**	Firm responsibility (prime or sub?)	Sub
Project number	4400010099	Owner's name	Louisiana Department of Transportation and Development
Project location		Owner's Project Manager	Wei Peng
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802 | (225) 379-1486 | wei.peng@la.gov		
Services commenced by this firm (mm/yy)	10/21	Total consultant contract cost ($1,000's)	Unknown
Services completed by this firm (mm/yy)	Present	Cost of consultant services provided by this firm ($1,000's)	$456

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

* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Project Relevance:

- Instrumentation plan preparation
- Field instrumentation installation
- Data acquisition and communication
- Load testing, data analysis and load rating

As part of the scope of Task Order 5 of this contract, BDI performed live-load testing and field-verified load ratings on 10 off-system structures. These structures were selected from a list of structures that were determined to require load posting based on load ratings previously performed in this contract and included three reinforced concrete slab bridges and seven metal culverts of various types/configurations. These selected structures were intended to be representative of a larger sample set of similar structures that the results are intended to make broader assumptions about the group of bridges as a whole.

Live load tests were performed to aid in evaluating the structures in their current condition. The overall goal of these tests was to better understand the structure's behavior and in turn provide field-verified load ratings for each structure. To achieve this goal, the collected structural responses were used to generate a field-verified finite-element model (FEM) of the structure. This field-verified FEM was then used to compute field-verified load ratings according to the AASHTO Manual for Bridge Evaluation (MBE) and the LADOTD Bridge Design and Evaluation Manual (BDEM).

STAFF TO BE USED IN THIS PROPOSAL: Brett Commander, Brice Carpenter

18. Approach and Methodology:

TRC brings years of successful LADOTD experience to this contract and has assembled a team whose members all bring proven success at completing similar bridge preservation design projects in accordance with the Scope of Services noted in Attachment A and in accordance with all requirements of the LADOTD. Each subconsultant team member was selected based on our previous working relationships as a team, their LADOTD transportation project success, and their availability and depth of staffing resources to support a contract of this nature. Our team's staff are very familiar with the preferences and expectations of the Department and the approach discussed here will guide us in exceeding those expectations in every aspect of our work.

APPROACH TO THE PROJECT

CONTRACT SCOPING MEETING

Following selection and contract execution that will include a comprehensive QA/QC Plan that has been reviewed and approved by LADOTD, the TRC team will participate in a scoping meeting with the appropriate DOTD technical and support personnel to develop a Task Order (TO) specific scope of services that will include a detailed schedule and compensation. Each TO will include a Project Work Plan as well as Project Design Criteria that will include compliance with the preapproved QA/QC plan. Once approved by LADOTD, the documents will be issued to CCS for execution.

PROJECT KICKOFF MEETING FOR IDENTIFIED TASK ORDERS

Following Notice-to-Proceed, TRC will request a TO kickoff meeting with the DOTD PM and key personnel to request the necessary data and finalize the important items and dates for schedule and deliverables. This kickoff meeting will be used to **(1)** establish project design criteria, **(2)** determine the frequency for project coordination meetings, **(3)** schedule an on-site meeting with DOTD, and **(4)** review questions that the project team may have after reviewing existing documents. TRC will develop a Critical Path baseline schedule using decisions made in the Kickoff Meeting. Before finalizing the schedule, we will coordinate with key stakeholders to consider requirements and restrictions imposed by the US Coast Guard, DOTD Districts, local agencies and others for each submittal, along with potential alternatives that could help reduce construction time, costs, and disruptions to the public on both highways and waterways.

SCOPE OF WORK

Based on our combined resources, the TRC team is able to address the expected scope of services for individual task orders under this project. Such services may include:

- Bridge and Roadway Preliminary and Final Design Services including load rating evaluation; condition rating; peer reviews; electrical, mechanical, and architectural designs; and in-depth and underwater bridge inspections.
- Sampling, Instrumentation, and Non-destructive Testing, including material and coating testing, installation and maintenance of data acquisition systems, proof loading, and concrete and steel members.
- Geotechnical services, including field investigations, laboratory testing, analysis, and design.
- Traffic engineering, traffic control design, and Transportation Management Plans.
- Hydraulic analysis and design.
- Surveying and Title Work Services, including 3D laser scanning; underwater acoustical imaging; property/boundary and hydrographic surveys; and property title research.
- Environmental and Permitting Services as may be required by state and federal agencies.

The TRC team will address any critical issues impacting the preventative maintenance, repair, and rehabilitation of Louisiana's key infrastructure and transportation assets. TRC will provide our team's approach to identifying successful design solutions for the chosen fixed and movable bridges. Project success relies on communication and coordination between our team, DOTD's Project Manager and Districts, US Coast Guard, US Army Corps of Engineers, DEQ and EPA, as well as private and public entities using these transportation links. TRC's detailed and effective interaction with these agencies for previous complex bridge and roadway design projects provides DOTD with the confidence that our team will effectively and efficiently deliver the best value for each transportation asset.

METHODOLOGY

To deliver the needed site inspections/ratings, repair and rehabilitation work, TRC will undertake the following methodologies with respect to each of the required work disciplines.

Bridge Inspection and Load Rating: TRC will perform the NBIS and DOTD required bridge inspections to gather detailed information on the condition of load carrying members that will aid in the analysis and load rating (if needed)

of each bridge and needed repairs due to deterioration and damage. All inspection work will be conducted in accordance with all relevant DOTD, FHWA, and AASHTO codes/standards including: AASHTO Movable Bridge Inspection, Evaluation and Maintenance Manual; MBE, NBIS, NEC, NFPA, etc. TRC will leverage our previous experiences inspecting and load rating a number of Louisiana's complex bridges that have included five cantilever trusses, four vertical lifts, one bascule, and three swing spans, as well as other complex (truss, cable stayed, box girders and movable) fixed bridges in California, Ohio, Virginia, West Virginia.

Due to the complexity of the expected structures under this project, including high ADT, railroad and waterway crossings, TRC employs the most efficient and least traffic impeding inspection access techniques which include rope access climbers, boats, UAS/drones, 3D scanning, and acoustic imaging. A current condition structural analysis and load-carrying capacity rating, if required, will be provided for all superstructure and substructure structural components. TRC has extensive experience with the current AASHTOWare Bridge Rating (BrR) software as well as other modeling software on the DOTD's pre-approved list such as MIDAS CIVIL and STAAD when BrR cannot be used.

As part of this effort, we recommend that bridge cleaning and washing services also be considered for incorporation. Our team will review previous inspection reports, determine locations where members/joints need to be cleaned, and include those services in our scope and cost proposal. Cleaning and washing will aid in the execution of a more complete condition assessment by uncovering hidden deficiencies which can then be addressed in the development of repair plans and mitigate costly change orders from occurring during construction. This service proved successful on our recent LA 47 IWGO Bridge Rehabilitation Project for the LADOTD where TRC, through DOTD's leadership, was requested to provide this service.

Surveying: TRC has had a long and successful relationship with NTB & Associates who will be conducting all survey and scanning services for this IDIQ Contract. For bridges that may have issues associated with previous substructure movements, etc., we have successfully incorporated 3-D scanning services to assist with determining probable causes for bridge component issues and to establish a baseline for future reference to determine if movements have ceased. Such services were recently conducted by NTB on behalf of TRC for the LA 47 IWGO (HBI) Rehabilitation Project.

Environmental & Permitting, and ROW/Title Services: Should the need arise to obtain project permits, TRC employs local staff who have an in-depth knowledge of the types of permits that might be required from such agencies as the LADNR, US Army Corps of Engineers, LADEQ, LADWF, US Coast Guard, and various Levee Boards. Such documents may include Coastal Use Permits, Wetland Permits, Scenic Stream Permits, Levee Permits, and Bridge Permits. ROW/Title Services can also be addressed if needed using in-house staff that meet the LADOTD's minimum educational and experience requirements for such work.

Bridge and Roadway Design Services: As presented in Section 17 of this Form 24-102, TRC has successfully led the completion of several large waterway bridge rehabilitation projects, including I-10 MRB, LA 47 over IWGO and US 190 MRB, along with several movable bridges as well as bridge replacements such as LA 77 & 78 Left Turn Lanes and Union Pacific Railroad near Greenwood. As a result, TRC and its team members are well-versed with implementing non-traditional approaches to evaluate and develop the most economical replacement/rehabilitation/repair solutions while adhering to best practices and constructability constraints. It is through this approach that we can provide aesthetically appealing and cost-effective solutions to each bridge, including the preservation of a structure's historical significance and character where applicable. The TRC team will create a complete list of recommended repairs, improvements or replacements. Each repair will be given a priority designation to ensure that all high-level defects can be addressed as soon as possible. Once the surveying, geotechnical analysis, and environmental compliances are completed, a complete set of preliminary plans, final construction plans, construction cost estimates, design calculations, etc. will be submitted as required by the contract.

During the Preliminary Design Phase, TRC will develop 30% through 100% Preliminary Plans that will include all repair/rehabilitation items, including proposed geometric alignments and vertical profiles for a bridge replacement. For replacement projects, we will determine viable bridge structure types and construction sequencing to consider during the project development. This will allow the TRC team to coordinate with DOTD and key stakeholders to select the most economical structure types for this project. Maintaining traffic during construction will be crucial to project success and will rely on the implementation of a traffic management plan that evaluates phased bridge construction vs. single bridge closures with temporary roadway crossovers; maintaining access control for adjacent detours; and maximizing safety of vehicle, railroad, and marine traffic. General bridge plans will be developed to show the horizontal configuration of the bridge, along with vertical profiles featuring the top of rail/water and required height clearances and freeboard to the superstructure of the proposed bridge. We will coordinate horizontal and

vertical alignments through DOTD, USCG and railroads as needed for their approval to ensure that project design criteria are met. A preliminary hydraulics design report is included with the 60% Preliminary Plans delivery. As part of the 100% Preliminary Plans submittal, TRC will prepare any required railroad or environmental clearance permits and begin developing any SWPPP plans.

The Final Plans stages, for preliminary as well as rehabilitation plans, include the following submittals: 30%, 60%, 90%, 95%, 98%, and 100%. TRC will work with the DOTD's PM to finalize roadway typical sections, roadway alignments, and access tie-ins to confirm ROW design requirements. TRC will develop detailed bridge construction plans for the superstructures and substructures, along with a suggested sequence of construction phasing presented in the Preliminary Plans. Hydraulic design will also be finalized. After receiving 60% Final Plan comments, TRC will develop the 90% Final Plans, Summary of Quantities sheets, finalized bridge plans, and as-designed bridge load rating report. A 95% Final Plan Review meeting will be held before the 98% Final Plans submittal, including construction cost estimates and special provisions. We will work with the DOTD's PM to ensure all necessary submittals are made to prepare for 100% Final Plans. After comment resolutions, the TRC team will stamp and seal all construction plan sheets for submittal.

Sampling, Instrumentation, and Non-destructive Testing: TRC has teamed with the respected firm of *Bridge Diagnostics, Inc*. (BDI) to provide any needed sampling, instrumentation, and NDT. Field installation techniques and the selection of software and hardware will be tailored to each project's objective for both temporary and permanent applications. NDT methodologies and unmanned aerial vehicles may also be used which may include ground penetrating radar, radiographic testing, ultrasonic tomography, magnetic flux leakage, deck acoustic response system, and NIRAS type testing.

Paint and Coating Assessment, Design, Construction Inspection: Based on our work with long-term coating and painting evaluations for the DOTD, it is our belief that low maintenance, 50-year plus paint systems will be highly desirable as was recently incorporated into our maintenance solutions for the LA 47 IWGO (HBI) Bridge Rehabilitation Project for the DOTD. TRC has incorporated those types of paint systems for other bridge rehabilitations along with developing plans that included complete full containment cleaning and painting lead during removal of the existing coatings. Adding to our expertise in this regard is subconsultant team member *KTA-Tator, Inc*. who will provide an experienced Protective Coating Specialist to lead this critical, cost saving work.

Transportation Management Plan / MOT: To identify the challenges and address strategies to minimize the traffic delays associated with lane closures, demand volumes and incidents within the construction limits, *Urban Systems, Inc*. (USI) will prepare a Transportation Management Plan (TMP) on behalf of the TRC team for each project. This TMP will be based on the DOTD EDSM VI.1.1.8 for bridge component repairs. USI has prepared similar TMPs for TRC on other maintenance/rehabilitation bridge projects.

Construction Services: Key members of the TRC team will attend the preconstruction meeting as well as complete all required construction-related engineering services including: pre-bid and on-call support; shop drawing review; responses to RFIs; change order approvals; shop inspections/reports; erection and installation procedures; factory testing of completed electrical control and hydraulic circuits; and commissioning and start-up to include initial testing of individual components/systems (mechanical, hydraulic and electrical).

Historic Bridge Obligation: TRC previously partnered with Mead & Hunt, Inc. (Prime Consultant) while performing professional services associated with the evaluation of approximately 5,428 Louisiana bridges built before 1970 in the DOTD's inventory. TRC assisted with project initiation and tracking, public involvement, development of the contextual study, development of methodology, execution of bridge surveys, and analysis of inventory data to make selection and non-selection determinations. As a result of such experience, our engineers are uniquely qualified to undertake the needed rehabilitation designs while maintaining a bridge's historic context. In fact, several of our staff have **completed the DOTD's "Maintenance and Rehabilitation of Historic Bridges" training** and are familiar with procedures outlined in the ***Programmatic Agreement Regarding Management of Historic Bridges in Louisiana***. TRC will approach each bridge designated as "Preservation Candidate" or "Preservation Priority" following the DOTD's Management Plan ("Preservation Priority") and the procedures laid out in the Programmatic Agreement to ensure that each historic bridge is properly maintained. TRC understands that bridges designated "Preservation Priority" may not be subject to replacement and must be approached and handled as a rehabilitation assignment only.

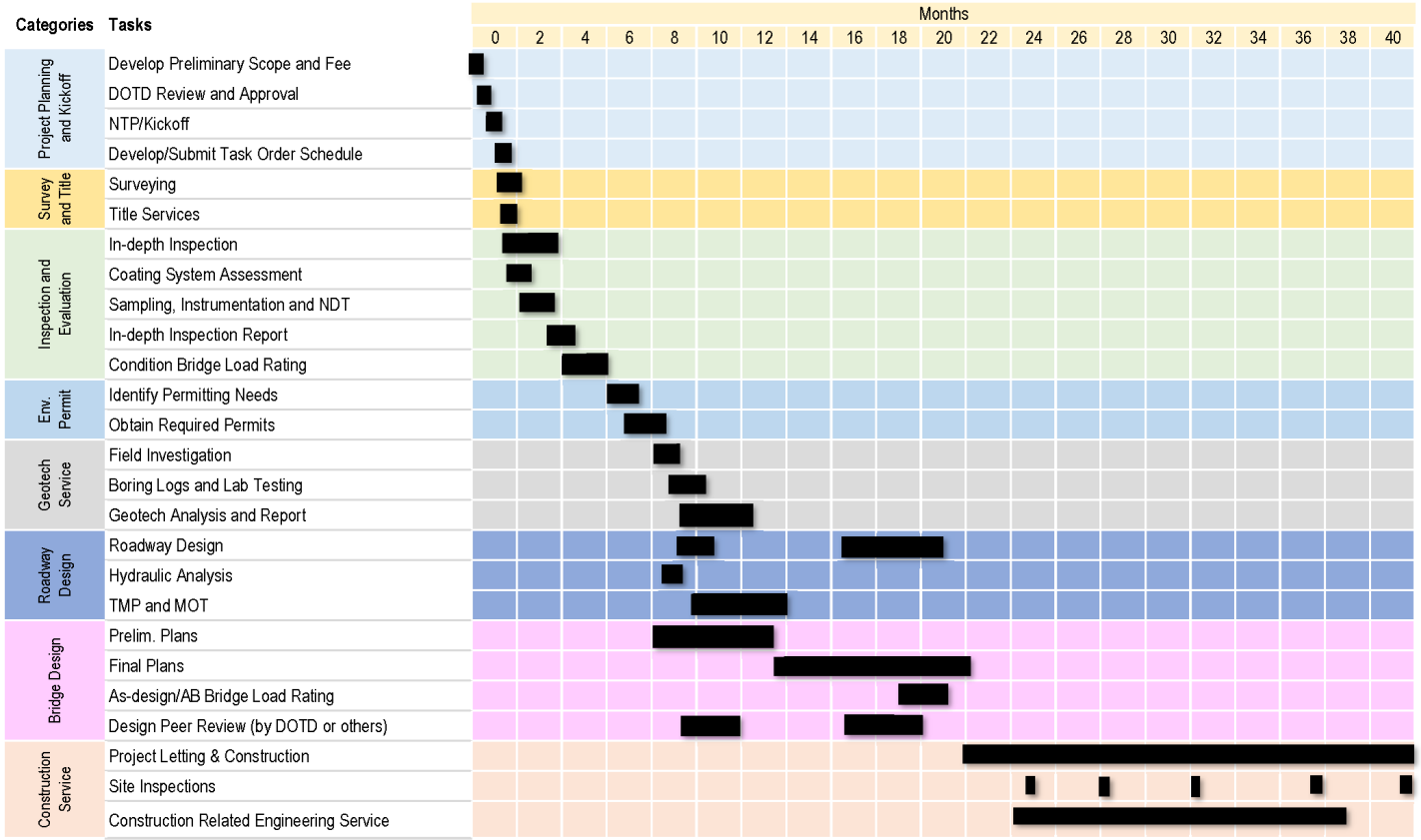
Commitment to Safety: TRC is committed to providing superior safety performance and is confident that our safety culture, management, and oversight will allow for a working environment that identifies and eliminates unsafe conditions. TRC employees have completed the most up-to-date safety training programs including Louisiana "Safety Practices", ATSSA TCS/TCT/flagging, and federal (OSHA) specific training requirements. TRC

also has specific tracking mechanisms to ensure that all subcontractors have current health and safety training and certifications.

For each inspection project, the project manager and senior team leader will develop a Site-Specific Health and Safety Plan (HASP) and Job Safety Analyses (JSAs) which address medical service locations/emergency procedures, aerial access/working at heights, confined space, traffic control, and equipment use. Each day of the inspection will involve detailed pre-job safety meetings to identify potential safety hazards and include all DOTD, TRC and subcontract employees. The potential, yet manageable, hazards associated with these bridge inspections may include, but not be limited to marine, pedestrian, and vehicular traffic; environmental (animals, chemical, vegetation, and weather); and interaction with mechanical systems (bridge components, equipment, and vehicles). TRC has a **proven safety track record of no lost workday injuries or reportable accidents while performing all types of bridge inspections with traffic control** while utilizing multiple means of access throughout Louisiana and the United States.

PROJECT SCHEDULE

Given that the work will be executed under an IDIQ contract, the schedule shown below reflects an expected Task Order for a bridge replacement or rehabilitation design project, understanding that some tasks will be modified accordingly, showing discipline tasks, major milestones, and deliverables. With an IDIQ contract time of 5 years, as well as our available staff, we can conduct multiple projects of this type as well as multiple smaller duration projects such as isolated repairs, emergency repairs, or assessment and evaluations that include scope development for future repair projects as well as peer review services for other consultant designed projects.



19. Workload:

Firm(s)	Past Performance Evaluation Discipline(s) *	State project number	Project name	Remaining unpaid balance**
TRC Engineers	Bridge	H.009730.5	Retainer Contract for In-depth Bridge Inspections (On-Sys)	$192,386
	Road	44-21128	LA 1: Port Allen Canal Bridge Replacement (Phase 1 & 2)	$57,720
	Other	H.009859.5	Bonnet Carre Spillway and Bayou Ramos Monitoring System Maintenance	$23,254
	Bridge	44-17327	IDIQ Contract for Innovative Procurement and Alternative Delivery Support Services	$114,459
	Bridge	H.005121.5	LA 1/LA 415 Connector	$510,250
	Bridge	44-20156	LA 47: IWGO Bridge Rehabilitation (HBI) - Final Plans	$258,584
	Bridge	44-17264	IDIQ Contract for Bridge Preservation – LA 47 Clean/Insp.	$242,927

DO NOT SUM

* The only past performance evaluation disciplines to be used are: Road, Bridge, Traffic, CE&I/OV, Geotech, Survey, Environmental, Data Collection, Planning, Right-of-Way, CPM, ITS, Appraiser and Other. If a firm has more than one past performance evaluation discipline for any single project, the firm can use multiple rows to express the remaining unpaid balance per evaluation discipline.

** Round to the nearest dollar. **Do not** round to the nearest thousands. If there are no active contracts with a remaining unpaid balance, please place N/A in the remaining unpaid balance column.

19. Workload:

Firm(s)	Past Performance Evaluation Disciplines(s) *	State project number	Project name	Remaining unpaid balance**
Moffatt & Nichol	Bridge	H.009730.5	In-Depth Inspection of Complex Bridges, Task Order 4 (10801.04)	$252,121
	Bridge	H.009730.5	In-Depth Inspection of Complex Bridges, Task Order 5 (10801.05)	$654,279
	Bridge	H.009730.5	IDIQ Contract for Underwater Bridge Inspection, Statewide (10801.05)	$726,212
	Bridge	H.011331.5	LADOTD Inventory and Inspection of Sign Trusses (11168.00)	$420,203
	Bridge	H.009730.5	LADOTD In-Depth Bridge Inspection, Task Order 3 (10938.04)	$473,944
	Data Collection	H.971294.1	LADOTD RIMS (7634.01)	$79,996

DO NOT SUM

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19. Workload:

Firm(s)	Past Performance Evaluation Disciplines(s) *	State project number	Project name	Remaining unpaid balance**
Urban Systems, Inc.	CE &I/OV	H.004791	Belle Chasse Bridge and Tunnel	$116,574
	Traffic	H.011309.5	Mac Arthur Final Design	$30,687
	Traffic	H.012812	US 190: Northshore and Camp Villere	$11,014
	Traffic	H.004891	Reserve to I-20 Connector	$51,641
	Traffic	H.010571	Williams Traffic Signal Design	$22,750
	Traffic	H.011965.5	IWGO Bridge Rehabilitation	$4,411

DO NOT SUM

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19. Workload:

Firm(s)	Past Performance Evaluation Discipline(s) *	State project number	Project name	Remaining unpaid balance**
Bridge Diagnostics, Inc.	Bridge	H.009730.5 44 17163	IDIQ Non Destructive Evaluation of Structures via SounDAR Whiskey Bay and Pilot Channel – Task Order 10	$47,870
	Bridge	H.014703.5 44-17163	IDIQ for Non-Destructive Evaluation of Structures Calcasieu Parish – Task Order 9	$25
	Bridge	H.009730.5 44-17163	IDIQ I-10 for Non Destructive Evaluation of Structures Atchafalaya Floodway and I-10 over Whiskey Bay Pilot Channel Bridge decks – Task Order 8	$69,198
	Bridge	H.012280.1 44-09224	IDIQ for testing of Unknown Foundations, Statewide – Task Order 3 – 1802005	$0
	Bridge	H.009730.5 44-17163	Retainer for Non Destructive Evaluation of Structures Task Order 1 General Services BDI1904004	$3,679
	Bridge	H.009730.5 44-17163	Retainer for Non Destructive Evaluation of Structures Task Order 7 Bonnet Carre Spillway 2006002	$94,864
	Bridge	H.009859.5 44-02791	Bonnet Carre & Bayou Ramos Monitoring System Maintenance	$0
	Bridge	H.010603.6 44-02538	Mississippi Bridge at Vicksburg GPS Monitoring – 150901	$2,933
	Bridge	H.012485.1 44-10099	IDIQ for Bridge Load Rating Services Statewide	$0

DO NOT SUM

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19. Workload:

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

DO NOT SUM

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19. Workload:

Firm(s)	Past Performance Evaluation Disciplines(s) *	State project number	Project name	Remaining unpaid balance**
KTA-Tator, Inc.	Bridge	4400013321	IDIQ Contract for In-Depth Bridge Inspection Statewide (sub to HNTB) – KTA has not received any task order assignments on this contract to date.	N/A
	Bridge	4400013322	IDIQ Contract for In-Depth Bridge Inspection Statewide (sub to Gresham, Smith & Partners) Task Order #4 – In-Depth Inspection of Complex Structures	$59,234
	Bridge	4400020156	State Project No. H.011965.5, LA 47; IWGO Bridge Rehabilitation (sub to TRC)	$11,294

DO NOT SUM

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19. Workload:

Firm	Past Performance Evaluation Disciplines(s) *	State project number	Project name and location	Remaining unpaid balance**
NTB Associates, Inc.	Survey	4400019338	Contract for Rural Bridge Replacement Initiative Phase II, Districts 05, 08, 58 (Sub to Sigma)	$60,321
	Survey	4400019337	Contract for Rural Bridge Replacement Initiative Phase II, Districts 02, 03, 07, 61, & 62 (Sub to BKI)	$603,690
	Survey	4400017713	IDIQ Contract for Professional Surveying Services – Task Order No. 5 – Monkhouse to I-49, Caddo Parish	$1,355,838
	Survey	4400017713	IDIQ Contract for Professional Surveying Services – Task Order No. 6 – I-10 Additional Topographic Surveys	$24,827
	Survey	4400019175	IDIQ Contract for Hydrographic Surveying Services – Task Order No. 3 – Spring Bridges	$31,881
	Survey	4400019715	IDIQ Contract for Hydrographic Surveying Services – Task Order No. 4 – Summer Bridges	$66,205
	Other	4400014660	IDIQ Contract for Subsurface Utility Engineering (SUE) Services – Task Order No. 2 – I:10 LA to Essen Additional SUE Services	$14,017

DO NOT SUM

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19. Workload:

Firm(s)	Past Performance Evaluation Disciplines(s) *	State project number	Project name	Remaining unpaid balance**
Holden Architects				N/A

DO NOT SUM

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19. Workload:

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

DO NOT SUM

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19. Workload:

Firm(s)	Past Performance Evaluation Disciplines(s) *	State project number	Project name	Remaining unpaid balance**
Regis Infrastructure Group				N/A

DO NOT SUM

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20. Certifications/Licenses:

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/4/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Mr. Durk Henry Krone
19113 Hickory Bay Court
Baton Rouge, Louisiana 70817

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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/4/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Mr. Michael Dean Paul
8550 United Plaza Boulevard, Suite 502
Baton Rouge, Louisiana 70809

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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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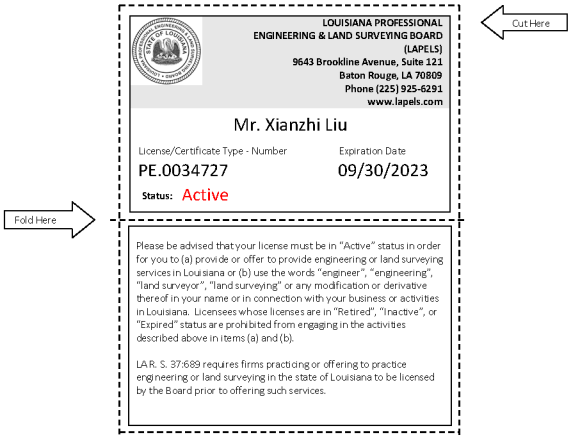
Mr. Xianzhi Liu
7321 Doswell Lane
Austin, Texas 78739



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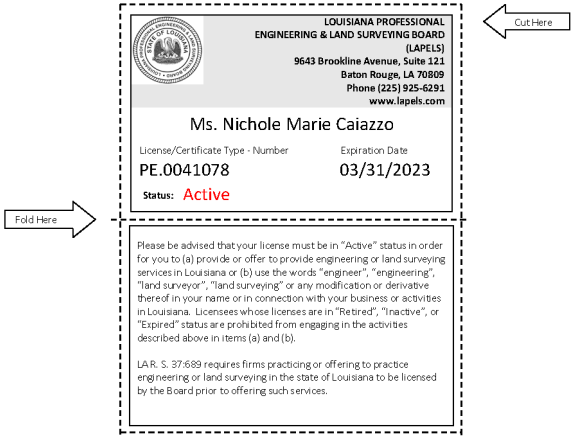
LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/4/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Ms. Nichole Marie Caiazzo
208 Verlin Drive
Greenville, South Carolina 29607



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20. Certifications/Licenses:

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/4/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Mr. Dong Wang
10787 Springtree Avenue
Baton Rouge, Louisiana 70810

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

Mr. Dong Wang

License/Certificate Type - Number: PE.0042845
Expiration Date: 03/31/2023
Status: Active

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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/4/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Mr. Denny Wayne Dispennette
135 Corporate Center Drive, Suite 540
Scott Depot, West Virginia 25560

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

Mr. Denny Wayne Dispennette

License/Certificate Type - Number: PE.0044141
Expiration Date: 03/31/2024
Status: Active

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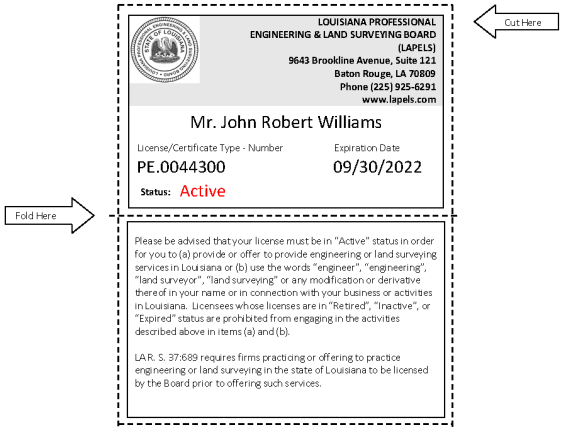
LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/4/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Mr. John Robert Williams
170 West Court Street
Doylestown, Pennsylvania 18901



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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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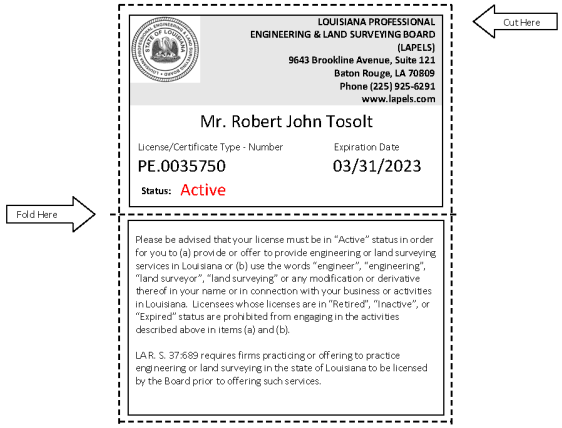
Mr. Robert John Tosolt
218 Forest Park Drive
Chalfont, Pennsylvania 18914



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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/4/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Mr. Gareth Thomas Rees
710 Maple Avenue
Cape May, New Jersey 08204

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ENGINEERING & LAND SURVEYING BOARD
(LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
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Mr. Gareth Thomas Rees

License/Certificate Type - Number	Expiration Date
PE.0040754	09/30/2022

Status: Active

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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/7/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Mr. Yang Feng Zheng
31-01 42nd Street, 2nd Fl.
Astoria, New York 11103

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(LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
www.lapels.com

Mr. Yang Feng Zheng

License/Certificate Type - Number	Expiration Date
PE.0045341	09/30/2023

Status: Active

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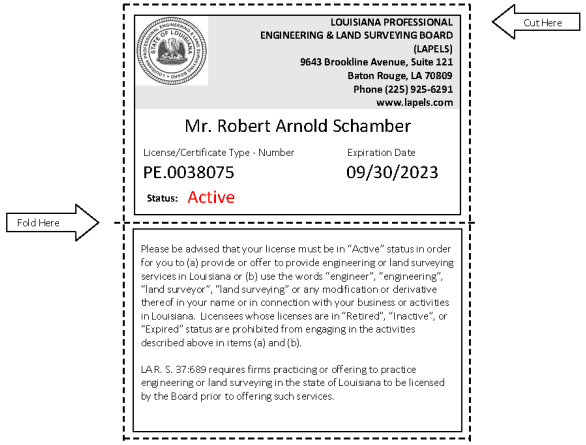
Mr. Robert Arnold Schamber
10680 White Rock Road, Suite 100
Rancho Cordova, California 95670



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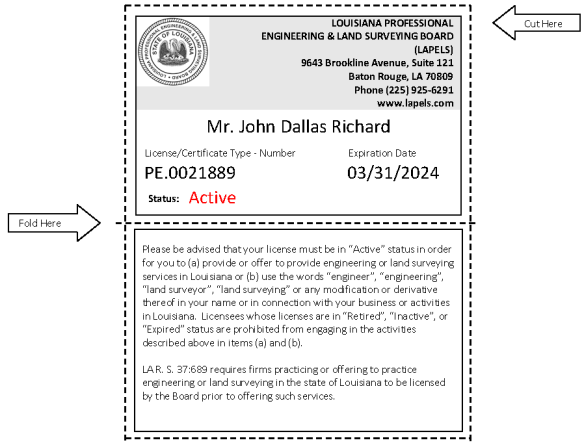
Mr. John Dallas Richard
5445 Melrose Boulevard
Baton Rouge, Louisiana 708063523



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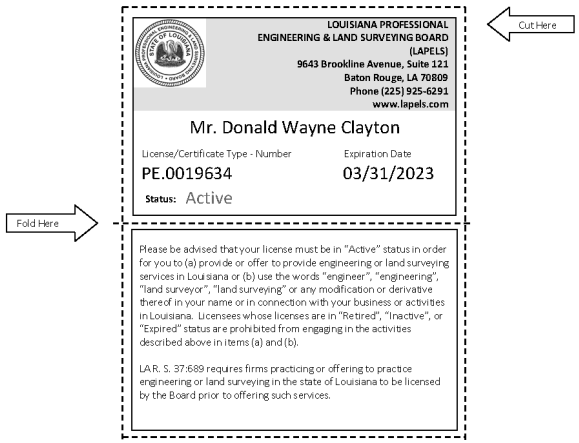
LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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

Mr. Donald Wayne Clayton
4607 Waverly Boulevard
Alexandria, Louisiana 713032604



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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

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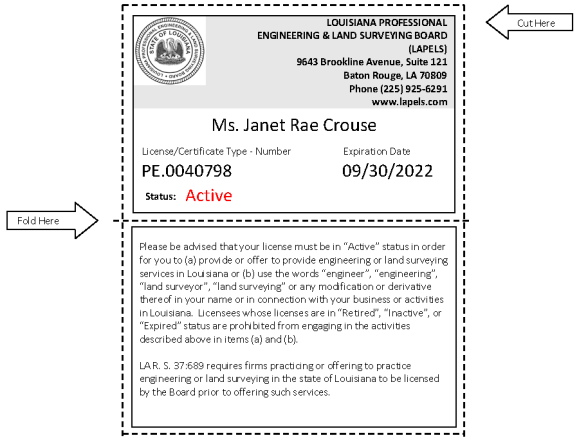
Ms. Janet Rae Crouse
6246 Westridge Drive
Baton Rouge, Louisiana 70817



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20. Certifications/Licenses:

LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/7/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Mr. Sergio L. Aviles
5261 Highland Road PMB #320
Baton Rouge, Louisiana 70808

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ENGINEERING & LAND SURVEYING BOARD
(LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
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Mr. Sergio L. Aviles

License/Certificate Type - Number: PE.0033571
Expiration Date: 03/31/2024
Status: Active

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LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD

As of 5/7/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Mr. Sairam Venkata Eddanapudi
1645 Nicholson Drive
Baton Rouge, Louisiana 70802

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

Mr. Sairam Venkata Eddanapudi

License/Certificate Type - Number: PE.0035129
Expiration Date: 03/31/2024
Status: Active

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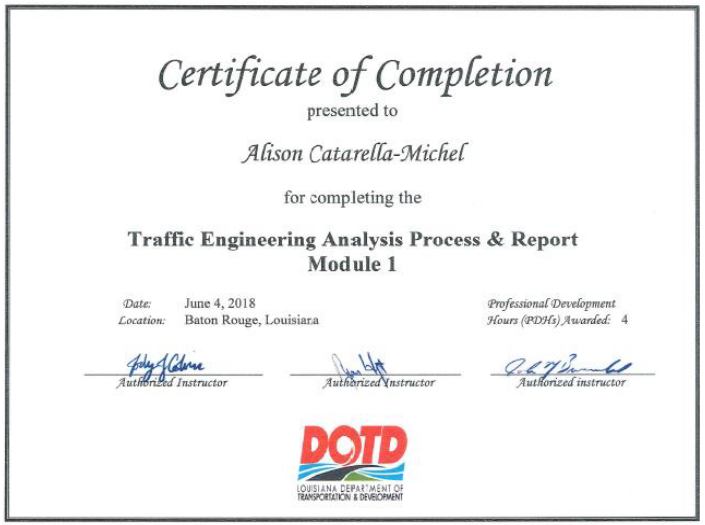


Certificate of Completion

presented to

Alison Catarella-Michel

for completing the

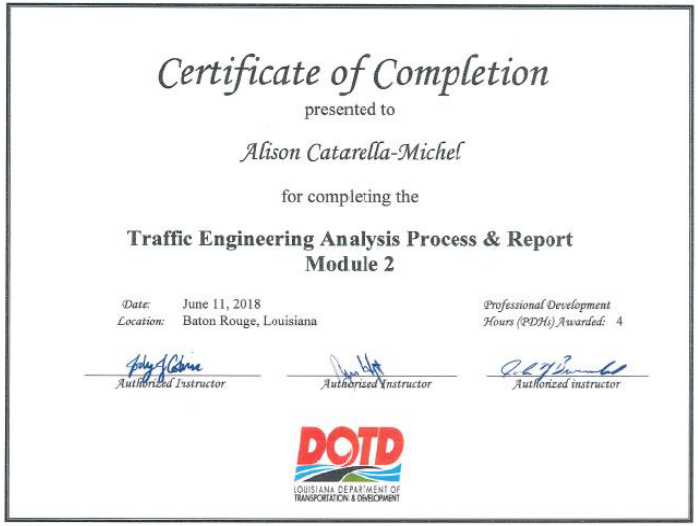
Traffic Engineering Analysis Process & Report
Module 1

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

Professional Development Hours (PDHs) Awarded: 4

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



Certificate of Completion

presented to

Alison Catarella-Michel

for completing the

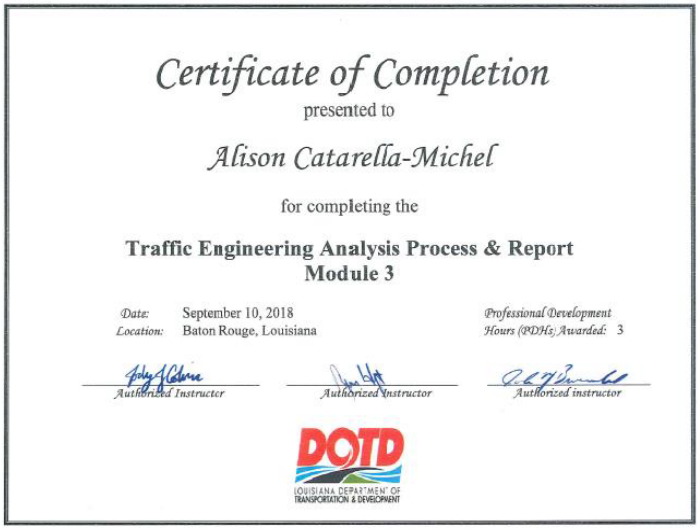
Traffic Engineering Analysis Process & Report
Module 2

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

Professional Development Hours (PDHs) Awarded: 4

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



Certificate of Completion

presented to

Alison Catarella-Michel

for completing the

Traffic Engineering Analysis Process & Report
Module 3

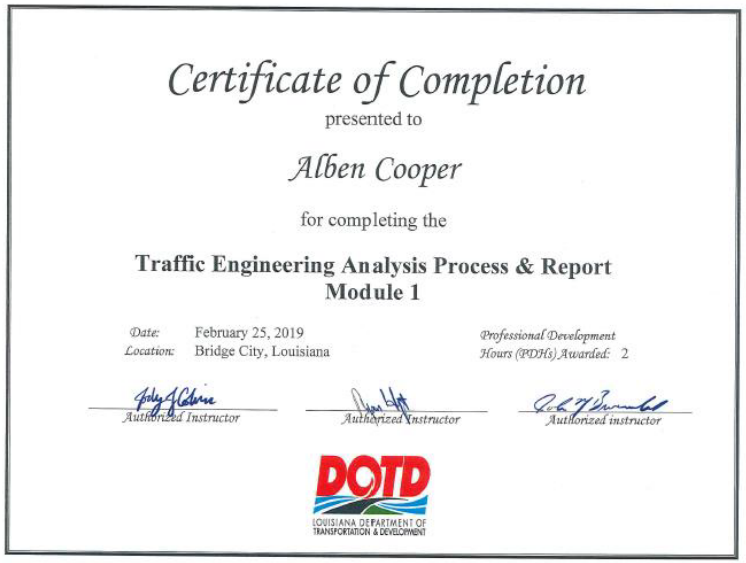
Date: September 10, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

20. Certifications/Licenses:



Certificate of Completion

presented to

Alben Cooper

for completing the

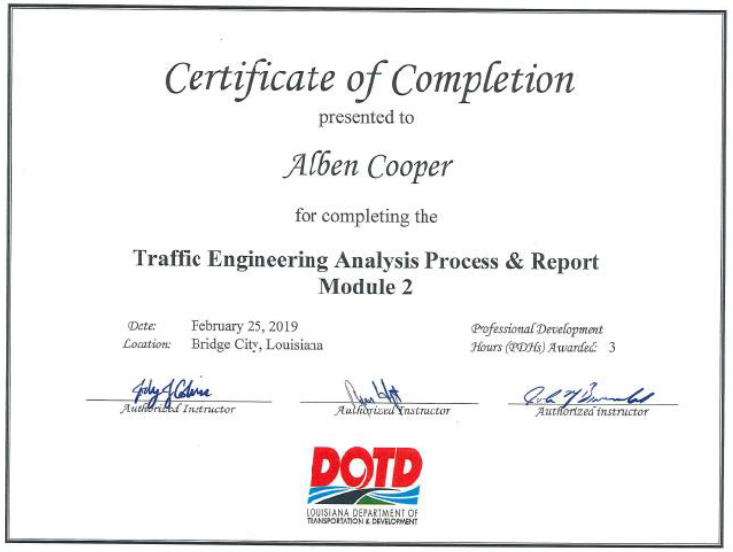
Traffic Engineering Analysis Process & Report
Module 1

Date: February 25, 2019
Location: Bridge City, Louisiana

Professional Development Hours (PDHs) Awarded: 2

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



Certificate of Completion

presented to

Alben Cooper

for completing the

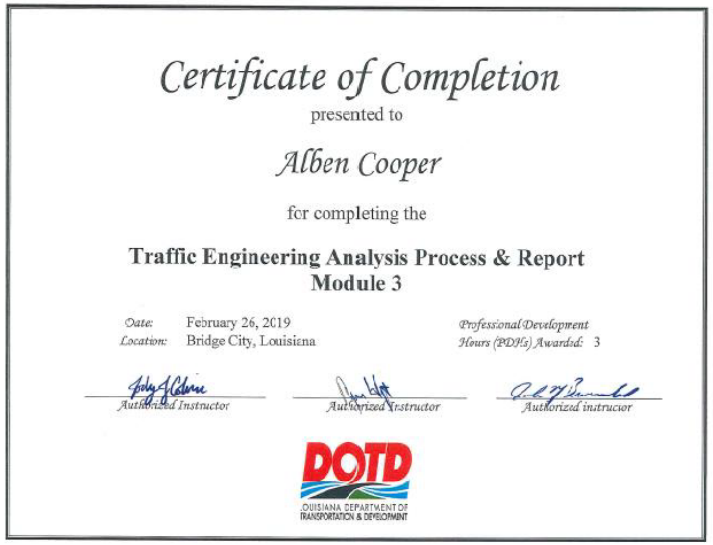
Traffic Engineering Analysis Process & Report
Module 2

Date: February 25, 2019
Location: Bridge City, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



Certificate of Completion

presented to

Alben Cooper

for completing the

Traffic Engineering Analysis Process & Report
Module 3

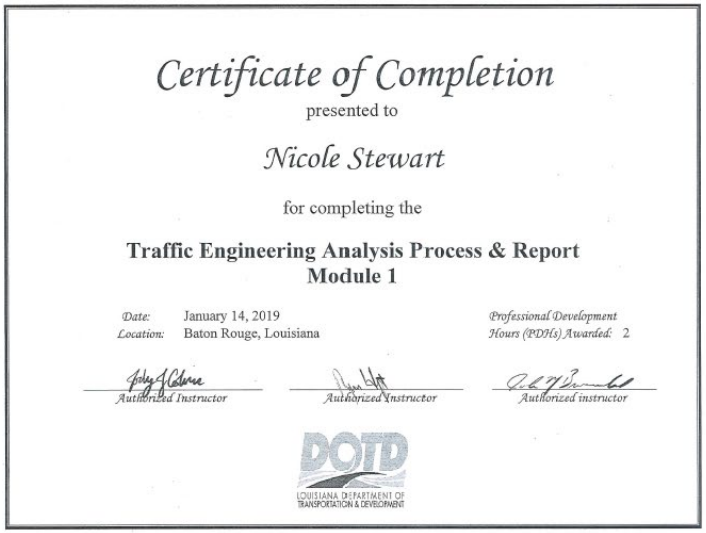
Date: February 26, 2019
Location: Bridge City, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

20. Certifications/Licenses:



Certificate of Completion

presented to

Nicole Stewart

for completing the

Traffic Engineering Analysis Process & Report
Module 1

Date: January 14, 2019
Location: Baton Rouge, Louisiana

Professional Development Hours (PDH(s) Awarded: 2

Authorized Instructor | Authorized Instructor | Authorized instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Nicole Stewart

for completing the

Traffic Engineering Analysis Process & Report
Module 2

Date: January 14, 2019
Location: Baton Rouge, Louisiana

Professional Development Hours (PDH(s) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Nicole Stewart

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: January 15, 2019
Location: Baton Rouge, Louisiana

Professional Development Hours (PDH(s) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

21: QA/QC Plan and/or Work Plan:

Attached

BRIDGE DESIGN QUALITY ASSURANCE / QUALITY CONTROL PLAN

Contract Nos. 4400023921, 4400023922, 4400023923, 4400024185, 4400024186, 4400024187, 4400024188 & 4400024189

IDIQ Contracts for Bridge Preservation Statewide

Prepared For

State of Louisiana
Department of Transportation and Development
Baton Rouge, Louisiana

Revision No. 00
May 10, 2022

Table of Contents

List of Appendices

1.0 INTRODUCTION AND PROJECT OVERVIEW

This Project Quality Assurance/Quality Control Plan establishes the minimum requirements for the Quality Assurance (QA) and Quality Control (QC) for the Bridge Preservation Projects and provides guidance to the project team regarding responsibilities and procedures for the QA/QC process. Any individual who performs work on this project shall comply with these minimum requirements. The QA/QC requirements shall be implemented for all design activities in both the design phase and construction support phase of the project. The QA/QC requirements shall be implemented for all load rating activities of the project.

This Project QA/QC Plan is consistent with and also meets or exceeds the requirements of the State of Louisiana Department of Transportation and Development (LA DOTD) *Bridge Design and Evaluation Manual* (Revision No. 9) and the FHWA/AASHTO *Guidance on QC/QA in Bridge Design In Response to NTSB Recommendation (H-08-17)* (August 2011) documents.

The main objective of a Project QA/QC Plan is to provide a mechanism by which the design, rating and plan development can be subject to a systematic and consistent review process. The QA/QC process does not solely consist of a review after a product is completed, but is a process that occurs throughout the design development.

Any questions about this Project QA/QC Plan should be directed to the Project Manager (PM). The PM is to be contacted if there are quality-related issues or concerns that aspects of the project appear to be inconsistent with the quality principals and procedures described in this Project QA/QC Plan.

1.1 Defining Project Quality

The following six characteristics, as defined below, will be used as a guide to focus the quality of engineering services provided to the LA DOTD by the TRC Team on this project.

Complete: Design documents, load rating documents and plans will be an accurate and thorough representation of the existing project features. Construction plans will be an accurate and thorough representation of the proposed project features and details to be constructed. The design and load rating documents will be developed with the active involvement of all affected parties throughout all stages of development.

Consistent: Design documents, load rating documents and plans will be consistent in format and in content and will comply with all standards and guidelines set by the LA DOTD design manuals, AASHTO guidelines and electronic standards.

Clear: Information provided in the design documents, load rating documents and plans will leave little room for subjectivity.

Correct: Design documents, load rating documents and plans will not contain errors or omissions.

Constructible: The TRC Team will implement this Project Quality Control Plan to minimize and/or mitigate the occurrence and magnitude of design errors or omissions which would require a significant number of change orders during the construction phase, or would result in a significant increase in the contract bid award amount, or would significantly affect the time of the construction contract period.

Timely: All submittals will be completed and delivered in the allotted timeframe.

1.2 Definitions of QA and QC

The definitions of QA and QC in bridge design, as defined in the LA DOTD Bridge Design Section *Policy on Quality Control and Quality Assurance,* are shown below.

- Quality Assurance (QA) – Procedures of reviewing the work to ensure the quality control procedures are in place and effective in preventing mistakes, and consistency in the development of bridge design, plans, load ratings and specifications that meets LADOTD policies and FHWA requirements.

- Quality Control (QC) – Procedures of checking the accuracy and consistency of the calculations and drawings, detecting and correcting design and load rating omissions and errors before the design plans and rating reports are finalized, and verifying the specifications for the load-carrying members are adequate for the service and operation loads. Furthermore, quality control consists of procedures for ensuring that the management of the bridge inventory ratings meets LADOTD policies and FHWA requirements.

1.3 Consultant Responsibilities

TRC is fully responsible for the QA/QC of its work and the work of its sub-consultants and is also responsible for all expenses incurred from omissions, ignorance or errors. The LA DOTD is not responsible for the QA/QC of their consultant's work. The individual roles, responsibilities and requirements of the TRC design team and the LA DOTD Bridge Task Manager are described in Section 3.0. All personnel working on the project shall follow the design policies and procedures described herein.

1.4 Summary of Project Scope of Work

The selected Consultant shall provide the following scope of engineering services. The selected Consultant should expect to perform task orders for individual services for specialized work.

Bridge Design Services

General Bridge Engineering Services

Provide bridge engineering services for fixed and movable bridges. Bridge project types may include, but are not limited to, new bridges, bridge replacements, bridge rehabilitation, bridge preventive maintenance and repair, and roadway lighting. Bridge engineering services include, but are not limited to, structural, mechanical, electrical, and architectural feasibility, design, and plan development and the following:

- Bridge/structural inspection and evaluation of existing bridges or other structures (sign trusses, fender systems, etc.). Associated reports shall be provided as required
- As-designed, as-built, and condition bridge ratings
- Design peer review of developed plans or conceptual designs to verify concept, constructability, and accuracy of designs along with associated reports, conclusions, calculations, and recommendations as needed
- Construction engineering support including construction drawing review, shop drawing review, request for information support, contractor proposals, etc.

Sampling, Instrumentation, and Non-destructive Testing

Provide sampling, instrumentation, and non-destructive testing services. These services may include, but are not limited to, collection of samples of materials from existing structures for evaluation, diagnostic and/or proof testing to determine specific structure response characteristics and/or to determine the causation of observed distresses, instrumentation, and the following:

Sampling

- Collection of samples
- Evaluation of protective coating material samples for determination of compatibility with proposed coatings, analysis for heavy metals, proper procedures for treatment, handling, disposal of waste, etc.

Instrumentation

- Design of instrumentation plans. Installation of instrumentation, data acquisition, analysis, and evaluation of structure based on instrumentation plan
- Provision and installation of instrumentation, including all materials required to mount the instrumentation provision of data acquisition systems, software updates, power supplies, communication to data servers, data hosting services, maintenance, and data access to DOTD
- Calibration services for instrumentation systems and sensors
- Maintenance services to repair and/or replace sensors, data acquisition systems, and power supplies
- Analysis and evaluation of accumulated data and final assessments and development of corresponding reports based on data and associated calculations

Non-destructive Testing

- Proof loading
- Estimation of concrete strength
- Assessment of reinforcement condition, cover, location, and diameter
- Detection of cracks, voids, and delamination in concrete
- Assessment of steel member condition

Geotechnical Services

Provide all geotechnical services necessary to perform geotechnical investigations, analysis, and design. These services may include, but are not limited to, the following:

- Geotechnical field investigations including both shallow and deep soil borings
- Geotechnical laboratory testing and analysis
- Preparation of soil boring logs
- Geotechnical analysis and design based on obtained data or data furnished by the DOTD
- Construction related engineering services

Road Design and Traffic Services

Provide all services necessary to perform hydraulic, road, and traffic investigation, analysis, and design. These services may include, but are not limited to, the following:

- Preliminary and final roadway design and plan development
- Hydraulic analysis and design
- Traffic engineering, traffic control design, and data collection
- Transportation Management Plan (TMP) development

Surveying and Title Work Services

Provide all surveying and title work services necessary to perform topographic, and boundary surveying, develop right-of-way maps, and provide other existing site data. These services may include, but are not limited to, the following:

- Topographic surveying, 3D laser scanning, and underwater acoustical imaging including both multi-beam and side scan hydrographic surveys
- Property and boundary surveying
- Property title work including title research and reports
- Construction related surveying services

Bridge Inspection Services

Provide all services required to perform Statewide NBIS In-Depth Inspections of complex structures. These services may include, but are not limited to, the following:

- Detailed in-depth field inspection on all bridge components, including an element level inspection. An NBIS underwater bridge inspection may be required for submerged elements.
- Assessment of the coating system, conducted by a certified SSPC Protective Coating Specialist or a certified NACE Bridge Coating Inspector
- In-depth inspection report outlining recommended repairs, rehabilitation, and corrections.

Environmental and Permitting Services

Provide all environmental and permitting services necessary to obtain project permits. Required permits may include, but are not limited to, the following:

- Coastal Use permits (CUP) from the LA Department of Natural Resources
- Wetland permits (404 and Nationwide) and Section 10 permits from the US Army Corps of Engineers
- Water Quality Certification from the LA Department of Environmental Quality
- Scenic Stream permits from the LA Department of Wildlife and Fisheries
- Bridge permits from the US Coast Guard
- Levee permits from various levee boards

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 submittals, associated schedule, and format shall be established in each Task Order. At minimum, all bridge plan submittals shall be submitted in pdf format and the 100% signed final plans shall be submitted both in full size paper and in pdf format. Design and rating calculations shall be submitted in pdf format no later than 30 days after the 100% final plan submittal.

Unless waived by the Task Order Project Manager, ProjectWise shall be utilized for all pdf submittals and electronic plan delivery will be required. See the following website for details on electronic plan delivery: http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Electronic_Plans_Delivery/Pages/default.aspx

2.0 PROJECT TEAM

TRC recognizes that the selection of a qualified project team is an essential element of a successful project. The table below provides a summary breakdown of the project team in terms of primary roles and points of contact for key project personnel. A preliminary outline is presented in this Section for the purposes of showing the team hierarchy and anticipated work distribution.

Group	Role	Name
Project Management	LA DOTD Project Manger	TBD
	LA DOTD Bridge Task Manager	TBD
	Consultant Project Manager	Durk Krone, PE
QA Review	QA Manager	David DeLeeuw, PE
Bridge Design & Load Rating	Team Leader	Mike Paul, PE
	Designers/Raters	Mark Castay, PE
		Josh Sadlock, PE
		Dong Wang, PhD, PE
		Nichole Caiazzo, PE
		Denny Dispennette, PE
		Chris Hay, PE
		Paul Misch, Jr., PE
		Cody Shields, PE
		Xianzhi ‘Sage’ Liu, PE
		J. Dallas Richard, PE
		Robert Schamber, PE
		Cameron Pinkerton, PE
		Mark Christianson, PE
		Gareth Reese, PE
		Yand Feng Zheng, PE
		Robert Tosalt, PE
		John Williams, PE

Bridge Inspection	Team Leader	Michael Schrepfer
	Inspectors	Michael Paul, PE
		Mark Castay, PE
		Paul Misch, PE
		Joshua Sadlock, PE, Sprat
		Chris Hay, PE
		Denny Dispennette, PE
		Steven Armstrong, PE, Sprat
		Jeffrey Gazarek, Sprat
		Mike Russell, EIT, Sprat
Bridge Inspection (Underwater)	Team Leader	Jeffrey M. Gazarek, ADCI
	Inspectors	Steven B. Armstrong, PE, ADCI
		Joshua L. Martinez, PE, ADCI
Instrumentation & NDT	Team Leader	Brice Carpenter, PE
	Technicians	B. Commander, PE
		Jessie Sippie, PhD, PE
		Allen Sindel, ASNT
Roadway Design	Team Leader	Donald Clayton, PE
	Designers	Mark Jusselin, PE
		Janet Crouse, PE
		Raul H. Regis, PE
Architectural Design	Team Leader	Thomas Holder, RA
	Architect	Kyle Daroca, RA
Traffic Analysis	Team Leader	Alison Michel, PE, PTOE
	Designers	Nicole Stewart, PE, PTOE
		Alben Cooper, PE, PTOE
Geotech Design	Team Leader	Sergio Aviles, PE
	Designers	Sai Eddanapudi, PE
		Surendra Pathak, PE
Lighting Design	Team Leader	John Mekari, PE
	Designer	Orien Butler, PE
Coatings Inspection	Team Leader	Robert Lanterman, NACE, SSPC
	Designer	Richard Burgess, NACE, SSPC
Permitting/ Environmental	Team Leader	Staci Danna, PE
	Designers	James LeBlanc
		Keith Suderman, PhD
		Michael Schrepfer
		Michael Paul, PE

3.0 QUALITY ROLES, RESPONSIBILITIES AND REQUIREMENTS

All individuals working on this project will contribute directly to the overall quality of the final deliverables. As such, each individual is responsible and accountable for the quality of his or her work products, whether for internal or external use. Individuals must not rely on others to catch mistakes or omissions. Before a work product is submitted to someone else for review or to be used as part of the program, the individual preparing the work is responsible to make sure it is complete and its quality is acceptable by personally back-checking the work for correctness and completeness.

Overall project quality requirements will be met if each team member takes responsibility for the quality of their portion of the work.

While all project team members are responsible for quality, certain key team members also have specific responsibilities for implementing the QC process on this project. The following sections summarize those responsibilities.

3.1 LA DOTD Bridge Task Manager

The responsibilities of the LA DOTD Bridge Task Manager are as follows:

- Develop the scope of work, man-hour estimate, minimum personnel requirements, and evaluation criteria, and obtain agreement from the direct supervisor on these items. Provide the information required for the project manager to prepare the advertisement and review the draft advertisement to ensure that all bridge design requirements are included.
- Serve as a member of the proposal evaluation committee and select the most qualified consultant team. Evaluate DOTD Form 24-102 and QA/QC plan document in accordance with the policies and procedures established by CCS and the instructions included in Appendix A. The final rating for DOTD Form 24-102 and the QA/QC plan document shall be reviewed by the direct supervisor and the Bridge Design Engineer Administrator. DOTD Form 24-102 for the selected consultant shall be retained for the duration of the Project.
- Initiate a kick-off meeting with the consultant as soon as the project is awarded to meet key bridge design team members (supervisor or team leader, designers, design checkers, and reviewers); discuss staffing plan and implementation of QA/QC plan document; determine submittal schedules; share expectations and consultant rating criteria; discuss bridge design criteria; and discuss bridge design budget, supplemental requests, invoices, and the importance of avoiding claims. Reach an early agreement regarding bridge type, size and location (TS&L). A bridge design kick-off meeting agenda checklist is included in Appendix B.
- Review and approve design criteria and TS&L and ensure the design criteria is updated as the project progresses.
- Monitor consultant's implementation of the QA/QC plan document. Ensure each consultant submittal includes a Consultant Project Interim Submittal QA/QC certification included in Appendix K.
- Keep a project log sheet to record all major project activities such as project meetings, consultant submittals, DOTD review comments, major decisions made, etc. A project log sheet template is included in Appendix C.
- Review consultant's submittals. Selectively check dimensions and details as a cursory review of the plans for constructability, consistency, and clarity but not as QA/QC of consultants' work. Communicate with consultants any concerns and schedule a face-to-face meeting if required to

resolve differences in a timely manner. A consultant submittal review checklist is included in Appendix D.

- Monitor project schedule and ensure on time delivery of project submittals.
- Monitor budget, process supplemental agreements in a timely manner, and avoid claims. Ensure the consultant performs work with a signed contract in place.
- Review and approve invoices. Ensure the original staff proposed in DOTD Form 24-102 is reflected in the invoices. If personnel changes are required, the credentials of replacement staff must be equal to or exceed the qualifications of the original staff. The resumes of replacement staff must be approved by LA DOTD.
- Perform a consultant rating for each major submittal for the quality of work. The major project submittals include, but not limited to, the following items:
    - Design Criteria
    - Bridge Type, Size and Location (TS&L)
    - 30%, 60%, 90%, 100% Preliminary Plans
    - 30%, 60%, 90%, 100% Final Plans
    - Design Calculation Book(s)
    - Consultant ratings performed by the bridge task managers must be reviewed and approved by their direct supervisor; a copy of the rating must be sent to the Consultant.
- Archive final bridge design files in accordance with Bridge Design Section record retention policy (Appendix E).

3.2 TRC Project Manager

The Project Manager (PM) is the individual responsible for the planning, coordination and controlling of the project from inception to completion, meeting the project's requirements and ensuring that each project is completed on time, within budget and to the required quality standards. The PM is responsible for the distribution of review prints at the interim QA plan reviews prior to the milestone submittals. The PM may review plans for general quality, appearance, accuracy and completeness. The PM confirms that interim QA plan reviews for milestone submittals are included in the project schedule and confirms that all have occurred and have been completed, that all comments have been satisfactorily addressed and that all forms and checklists have been completed by the appropriate personnel. The PM is responsible for selecting the Team Leaders and Reviewers. The PM is ultimately responsible for adherence of the Project to this Project QA/QC Plan. The PM will lead the effort of preparing written bridge design criteria described in Section 4.3.

The Project Manager is responsible for delivering all bridge design files to the LA DOTD Bridge Project Manager no later than 30 calendar days after the stamped final plans are delivered.

3.3 Team Leaders

Team Leaders are the individuals that are responsible for a specific portion of the project. They have the primary responsibility for producing high quality deliverables on schedule and within the budget. Specific quality-related responsibilities include the following:

- Assigning design, rating, detailing and QC activities to individual team members. The assigned activities need to be specific and definable portions of the project.
- Assembling the design calculations and development of the calculation books and any other required design documentation.

- Assembling the load rating calculations and development of the load rating report.
- Confirmation that all calculations, and plan sheets are prepared, checked and reviewed in accordance with the guidelines in Section 4.0.
- Meeting or talking with the Reviewer at the QA review stage for each milestone submittal. Especially in the early phases of the project, Team Leaders are expected to be proactive in soliciting Reviewer input on advance copies or summaries of the design approach (as appropriate) and when making critical design decisions.
- Meeting or talking with the Reviewer after each milestone QA review to discuss major comments and come to a consensus as to how they will be addressed.
- Coordination with the other Team Leaders and the PM. Team Leaders are expected to communicate as frequently as needed to ensure that each team has the information needed to perform their designated work.
- Preparing and providing the QA Information Package (Appendix F) to the Reviewer.

3.4 Designers

A Designer is an individual directly responsible for the development of design calculations, drawings, special provisions including Non-Standard items, and cost estimate for the particular elements he/she has been assigned. The Designer is responsible for supervising the Detailer in development of the plans. Designers must be licensed by the State of Louisiana as a professional engineer or certified as an engineer intern.

3.5 Raters

A Rater is an individual directly responsible for the development of the load rating calculations. Raters must be licensed by the State of Louisiana as a professional engineer or certified as an engineer intern.

3.6 Checkers

A Checker is an individual responsible for performing a full technical review of the design calculations, load rating calculations, load rating report, special provisions including Non-Standard items, and cost estimating for the particular elements he/she has been assigned. The Checker shall ensure that the load rating calculations accurately represent the actual bridge condition. The Checker is responsible for conducting the QC check of the calculations as described in Section 4.0. Checkers must be licensed by the State of Louisiana as a professional engineer or certified as an engineer intern; if the Designer or Rater is an engineer intern, the Checker must be a professional engineer. The Checker shall not be the same individual who performed the original design or load rating.

3.7 Detailers

The Detailer is the individual directly responsible for the creation of plan CAD drawings. It is the responsibility of Detailers to work with the Designer and Detail Checker to prepare CAD drawings that accurately reflect the design and are consistent with all applicable LA DOTD CAD standards and any designated TRC project-specific CAD templates and/or base files except when LA DOTD has permitted an alternate standard.

3.8 Detail Checkers

A Detail Checker is the individual responsible for performing a full review of the plan sheets he/she has been assigned to check as described in Section 4.0. The Detail Checker shall ensure that the drawings

adequately and accurately present the design information. The Detail Checker should either be the Designer or Design Checker. The Detail Checker shall not be the same individual who performed the original detailing.

3.9 Detail Back-Checkers

A Detail Back-Checker is the individual responsible for verifying the Detail Checkers plan sheet mark-ups are correct.

3.10 Reviewers

The Reviewer is the engineer responsible for performing the QA Review. Reviewers must be licensed by the State of Louisiana as a professional engineer and must have substantial experience in the design of similar structures. For load rating projects, the Reviewer must have at least 2 years of experience in bridge rating.

Reviewers have the following responsibilities:

- Being familiar with the project scope and project personnel.
- Confirm that the QC process is being implemented and the design calculations, load rating calculations, drawings, special provisions, and cost estimate are in accordance with LA DOTD Bridge Design Practices, policies and procedures and this Project Quality Control / Quality Assurance Plan.
- Providing periodic input to the design process by providing the Team Leaders and PM with review comments on proposed design concepts and the evaluation of design alternatives, especially in the early phases of the project.
- Performing thorough and timely reviews in accordance with the project schedule. Reviewers are expected to present clearly written review comments which are succinct and within the project schedule.
- Verify with the Team Leader that all required calculations and plans have been prepared and checked in accordance with the guidelines in Section 4.0.
- Verify with the Team Leader that all applicable codes and standards have been followed in performing the tasks.
- Meeting with the Team Leader to discuss major review comments, confirming that the Team Leader understands the comments and that a consensus as to how to address them is reached. Verifying that all major review comments are adjudicated, and their resolution is documented and implemented.

3.11 Peer Reviewer

The Peer Reviewer is an independent engineering entity, with no prior involvement in the project, who performs a check of the designs by producing an independent set of calculations based on the drawings or performs a review as specified in the scope of work.

The Peer Reviewer shall not be employed by the same consultant with whom the Designer or Checker is employed. The Peer Reviewer must be licensed by the State of Louisiana as a Professional Engineer and must have substantial experience in the design of similar structures.

3.12 Engineer of Record

An Engineer of Record (EOR) is the individual designated to be responsible for accuracy and completeness of the plans and related designs prepared by their designated team. For load rating projects, the EOR is responsible for the accuracy of the load rating and completeness of the load rating report. The EOR shall have responsible charge of the portion of work he/she is designated to be responsible for. The EOR must be licensed by the State of Louisiana as a Professional Engineer and must have commensurate experience in the design of similar structures. The EOR is typically the Team Leader, but can be the Designer, Rater, Checker or Reviewer who is most directly involved in the project design/rating activities.

Responsibilities of the EOR include the following:

- Confirming that the QA/QC certification is signed by all responsible parties.
- Confirming that the geotechnical design information shown on bridge plans is co-stamped by a Geotechnical Engineer and the hydraulic information shown on bridge plans is co-stamped by a Hydraulic Engineer. If practical, the hydraulic information and geotechnical information should be presented on separate sheets to reduce the engineering stamps on a sheet.
- Confirming that when more than one engineering stamp is required on a sheet, the responsibilities for each engineering stamp shall be clearly defined.
- Working with the Team Leader to ensure the calculation book and rating report are correct and complete and include the final geotechnical analysis report and the hydraulic report from the geotechnical engineer and the hydraulic engineer, respectively.
- Reviewing the load rating report for conformance with the Load Rating Report Checklist (Appendix P).
- Verifying that the names of the Designer, Design Checker, Detailer, Detail Checker, and Reviewer are correctly shown on the title block of each plan sheet.
- Confirming all special provisions are accurately shown in the construction proposal. The special provisions are typically stamped by the Specification Engineer as part of the construction proposal; however, if the Specification Engineer is not qualified to stamp the special provisions, the EOR must stamp these provisions.
- Sealing all plan sheets or designate a Designer, Checker or Reviewer to seal the sheets developed under their supervision. Sealing the general notes sheets, calculation book, load rating report and special provisions (if required).

4.0 PROCEDURAL REQUIREMENTS

4.1 Selection of a Qualified Design Team

The PM will select a Team Leader for each discipline of each Task Order. The PM will select a Reviewer for each of discipline of each Task Order. With concurrence from the PM, each Team Leader will select a team (Designers, Raters, Checkers, Detailers, Detail Checkers and EOR) with qualifications and experience that are adequate for the complexity of the bridge to be designed and/or load rated. The PM will work with the LA DOTD in selecting a Peer Reviewer if a peer review is required.

4.2 Project Kick-Off Meeting

A kick-off meeting will be initiated soon after the notice to proceed date for the LA DOTD to meet key bridge design team members (Team Leader, Designers, Raters, and Reviewers); discuss a staffing plan and implementation of a QA/QC plan document; determine submittal schedules; share expectations and consultant rating criteria; discuss bridge design criteria; and discuss bridge design budget, supplemental

requests, invoices, and the importance of avoiding claims. Reach an early agreement regarding bridge type, size and location (TS&L). A bridge design kick-off meeting agenda checklist is included in Appendix B.

4.3 Development of Bridge Design and Load Rating Criteria

The Project Manager will take the lead in development of the Bridge Design Criteria will work with the project design team and the LA DOTD Bridge Task Manager in the preparation of this document. The Bridge Design Criteria will include the required criteria for Load Rating. A copy will be submitted to the Task Leaders, Reviewers and EOR's for review and comment at the onset of work for the project. Once the Bridge Design Criteria has been finalized, it will be submitted to the LA DOTD for review, comment and acceptance. Bridge Design Criteria accepted by the LA DOTD will be distributed to all team members and will serve as the basis for design, load rating, and plan sheet development.

Though the Bridge Design Criteria may change throughout the project, an up-to-date version shall be maintained at all times and available to the design teams. The Bridge Design Criteria checklist used to guide the development process is included in Appendix G.

4.4 Plan Development and Conformance to CAD Standards

The Designer will work with the Detailer to develop the plans. All plan drawings will be developed in MicroStation and will comply with LA DOTD CAD standards and will be certified through a CAD standardization package as described in the LA DOTD document titled "Electronic Standards for Plans" found on the LA DOTD web site.

TRC is responsible for ensuring that sub-consultants submit their electronic deliverables in conformance with the same standards. The DOTD Software and Deliverable Standards for Electronic Plans document and DOTD CAD Standards Downloads are available via links on the LA DOTD web site.

Patches shall be applied to CAD Standard Resources and incremental updates installed to the CAD software as needed or required. Major updates shall be installed to software versions and CAD Standard Resources in a timely manner and shall be applied per directive or approval of the LA DOTD Design Automation Manager. Prior to proceeding with plan development, the PM shall contact the Bridge Design Manager for any special instructions regarding project-specific requirements.

In the event that any electronic standard conflicts with written documentation, including DOTD plan-development Manuals, the electronic standard typically governs. The Consultant is responsible for contacting the PM should questions arise.

Electronic deliverables shall be uploaded (or checked-in) directly into the DOTD ProjectWise repository at each plan delivery milestone. The following operations are to be performed at each milestone including, but not limited to, the following:

- Upload (or check in) CAD plan deliverables to the discipline "Plans" folder
- Apply and maintain indexing attributes to CAD plans (and other deliverables as needed)
- Publish PDF format plan submittals in ProjectWise using automated publishing tools
- Digitally sign PDF format plan submittals in ProjectWise according to DOTD standards and procedures (Final Plans, Revisions and Change Orders). Signatures shall be applied in signature blocks provided with electronic seals and Title Sheets.

Additionally, after reviewing deliverables for each submittal milestone, the LA DOTD Project Manager shall notify TRC regarding the availability of two automatically generated informational reports in ProjectWise. These reports document the completion status and other information regarding indexing attributes and CAD standards. Consultants shall take these reports into account and make any necessary adjustments to plans before the next submittal milestone; or sooner, if directed by the LA DOTD Project Manager.

4.5 Calculation Development

Calculations are essential to the design and load rating process and have two purposes:

- To act as a tool to obtain an answer to a design or load rating task.
- To serve as a permanent record of the objective and/or a statement of purpose (i.e., overview of what the calculation is trying to determine), assumptions, the steps performed to obtain the answer, and the conclusion.

In general, the design and load rating documentation packages need to articulate the process and computations using notes and/or references regarding:

- Objective of the Analysis
- Assumptions
- Design/Load Rating Criteria
- Code Requirements
- Specifications
- LA DOTD Policies and FHWA requirements
- Other Aspects/Elements Important to the Design

Bridge type, size and location (T, S &L) must be developed first and approved by the Team Leader and PM prior to proceeding with the design of structural components.

The Designer is the individual responsible for development of the design, geometric and quantity calculations. The Rater is the individual responsible for development of the load rating calculations. The Designers and Raters shall check his/her own work to minimize errors and must follow the Design Criteria established for the project. Design and calculations shall be conducted for all load carrying members and shall show good engineering judgment and be in conformance with the specified code requirements. Rating calculations shall be conducted for the load carrying members as specified by LA DOTD. Geometric calculations or CAD sketches shall be developed to verify the geometry shown on the plans. Quantity calculations shall be developed for all bridge quantities shown on the plans. Calculations shall be organized and maintained in a standard calculation book format. Hand calculations will be documented on a standardized engineering calculation pad. The calculation book checklist is included in Appendix H.

4.6 Quality Control

The quality control (QC) process includes a full technical review of the calculations, plan sheets, special provisions including non-standard items, and cost estimates. The main objective of the QC process is to provide a mechanism for design work to receive a systematic and consistent review. A secondary objective of the QC process is to provide a well-documented trail of the design process.

The Checker is responsible for verifying the accuracy by conducting a QC check of the design calculations, load rating calculations, load rating report, quantity calculations, geometric calculations, pay items, special provisions including NS items and cost estimate. The Checker is required to perform a redline check of the calculations (as described in Section 4.6.2) or produce an independent set of calculations and compare the results (as described in Section 4.6.1). The Team Leader and EOR will determine the QC checking method that will be used depending on the complexity of the design/rating task. Regardless of the checking method employed, the Designer's/Rater's calculations are the calculations of record and must be updated to correct any errors or omissions discovered by the Checker. Calculations of the Checker should also become a part of the calculation of record when independent checking calculations are produced. The Checker should also ensure that the drawings adequately and accurately represent the design information.

During the QC plan sheet check process, the Detail Checker must ensure the drawings are in accordance with the design information and CAD standards as described in Section 4.6.3. All information on the plan sheets shall be checked and all necessary information shall be shown.

The Checkers may begin the QC checking process at the completion of the entire design/detail/rating process or may check components of the work as it is completed. Any discrepancies that arise shall be resolved between the Designer, Rater, Checker and Detailer, and the calculations and plan details shall be corrected accordingly. If a resolution cannot be reached, the issue shall be brought to the attention of the Team Leader.

After the Designer, Checker, Detailer, and Detail Checker are satisfied with the state of the design calculations, drawings, special provisions, and cost estimate as appropriate, and all QC checks have been completed, the design and detail QC check shall be considered complete and the final submittal QA Review will be conducted for the design documents.

For milestone plan submittals, the QC check of the plan sheets should be completed for those sheets that are indicated to be completed in the Plan Payment Milestone Tables in the LA DOTD Bridge Design Manual. Other sheets that are under development are to undergo a cursory check prior to milestone plan submittals. All plan sheets are to be QC checked prior to the 95% Final Bridge Plan Submittal.

If design revisions are required after the QA information package has been submitted, the Reviewer shall be notified of such revisions and supplied with the revised information.

After the Rater, Checker and Team Leader are satisfied with the state of the load rating calculations and the Load Rating Report and all QC checks have been completed, the load rating QC check shall be considered complete and the final submittal QA Review will be conducted for the load rating.

The Team Leader is required to maintain the status of the Internal Submittal Tracking Checklist (Appendix J). The Team Leader shall modify the list as needed to include all required design and rating tasks.

4.6.1 Independent Calculation Method of Checking Design Calculations

Calculations that are to be checked using the independent calculation method shall be done in accordance with this Section. Using Plans that contain the required amount of design information, the Checker will prepare independent design calculations for the selected bridge element. Next, the Checker marks-up the

plans and compares the independent design calculation results with the information shown in the plans. If the difference in results is in excess of 5%, the original calculations will be resolved with the Designer as to method and accuracy. Once resolved, if necessary, the design calculations and plans will be revised to reduce or eliminate the difference in design results and the Design Checker will sign the original design calculations. The independent design calculations and plan marks shall be archived.

It is at the discretion of the Team Leader to determine the necessity of utilizing different means and design tools for developing independent calculations.

4.6.2 Redline Method of Checking Design Calculations

Calculations that are to be checked using the redline method shall be done in accordance with the following procedure.

1. The Designer/Rater develops calculations on engineer paper using pencil. The Designer/Rater initials and dates each sheet of the calculations. If spreadsheets, MathCAD or other software is used to develop calculations, these documents shall be formatted similar to handwritten calculations. If a software design program is used, the input/output shall be printed and the Designer/Rater shall initial and date the input/output cover sheet.
2. Once the calculations are complete, the Designer/Rater provides photocopies of the original calculations to the Checker. The photocopies are considered to be the checkprints. The Checker uses a red pencil or pen and yellow pencil or highlighter during their initial check of the calculations. Items and values found to be correct are to be highlighted in yellow to indicate that they have been checked and are correct. If an item or value is incorrect, a red line is drawn through it such that the original data is legible and the correct data is written in red nearby. The Checker initials and dates each sheet of the checkprints using red pen or pencil.
3. Upon completion of the checking procedure, the Designer/Rater reviews the red marks made by the Checker and works with the Checker to reconcile disagreements. Upon agreement, the Designer/Rater revises the original calculations. For significant changes, entire sheets of the original calculations may need to be redrafted in order to keep the set of calculations neat and legible
4. Once the calculations are revised, the Designer/Rater provides the original calculations and checkprints to the Checker. The Checker verifies the changes have been made and that the calculations are complete.
5. If additional revisions are required, photocopies of the revised calculations shall be made and the redline check shall be repeated until complete.
6. Once the calculations are correct and complete, the Checker will initial and date each sheet of the original calculations. The signature and date of the Checker are to be handwritten; electronic signatures for the Checker are not acceptable. For design software input/output documents, the Checker need only initial and date the input/output cover sheet.

The Designer/Rater shall provide the calculations and checkprints to the Team Leader and EOR upon completion. The Team Leader will assemble and organize all calculations and checkprints and provide them to the EOR who will be responsible for archiving these documents (electronic and hard copies) as evidence the QC check was conducted.

4.6.3 Redline Method of Checking Plan Sheets

Plan sheets shall be checked using the red-line procedure described below. Plan sheets shall be red-line checked for compliance with internal and project CAD standards and detailing practices, compliance with design requirements and dimensional checks. The redline check is considered the QC check of the plan sheets.

Plan Checking QC Procedure:

1. The Designer works with the Detailer to develop the plan sheets as described in Section 4.4. Once the plan development is at a satisfactory completion level, the detailer plots the sheet and adds the Check Print seal (electronically or rubber stamp) shown below to each sheet. The Detailer initials and dates the "DRAWN" row in the Check Print seal. These sheets are considered to be the checkprints.

CHECK PRINT		
DRAWN	by: _____	date: _____
CHECKED	by: _____	date: _____
BACKCHECKED	by: _____	date: _____
CHANGED	by: _____	date: _____
COMPLETE	by: _____	date: _____

2. The Detail Checker checks the sheet. All information shown on the sheet shall be checked. The Detail Checker should be the Designer or Checker. A yellow pencil or highlighter is used to indicate information that is correct. If an item or value is correct, a yellow line is struck-through that item or value. A red pencil is used to indicate a correction or addition is required. If an item or value is incorrect, a red line is drawn through it, such that the original data is legible and the correct data is written in red nearby. Notes and comments to the Detailer are clouded. The Detail Checker initials and dates the "CHECKED" row in the Check Print seal.
    a. The Detail Checker shall reference Chapter 1 of the LA DOTD Bridge Design Manual and the LA DOTD Plan Constructability/Bidability Review form and also use their judgment to ensure the minimum amount of information is shown for bidibility/constructible plans. The detail checker shall verify the details shown are consistent with the information shown in the design calculations and quantity calculations.
3. Upon completion of detail checking, the checkprint(s) are provided to the Back-Checker. The Back-Checker checks all red-lines made by the Checker. The Back checker places a green checkmark next to the red-lines made by the Detail Checker to indicate agreement. If there is a disagreement, the Back-Checker shall work with the Detail Checker to reconcile the disagreement. The Back-Checker initials and dates the "BACKCHECKED" row in the check print seal.
4. Upon completion of back-checking, the checkprints(s) are provided to the Detailer. The Detailer makes changes to the CAD file for the items marked in red and with a green checkmark. The Detailer places a blue checkmark next to the red-lines to indicate the change was made. The Detailer shall only make changes indicated with red marks; no other items are to be modified. If the Detailer has questions or believes there are unmarked errors, it shall be brought to the attention of the Checker. The Detailer initials and dates the "CHANGED" row in the Check Print seal.
5. The Detailer provides both the original checkprint and revised sheet to the Detail Checker. The Detail Checker verifies all changes have been made using red and yellow as described in Step 2.

6. If additional revisions are required, the process (Steps 2-5) continues until complete. Once complete, the Detail Checker initials and dates the "COMPLETE" row in the Check Print seal.

The Detail Checker shall provide the checkprints to the Team Leader and EOR upon completion. The Team Leader will assemble and organize all checkprints and provide them to the EOR who will be responsible for archiving these documents (electronic and hard copies) as evidence the QC check was conducted.

Once the plan sheet QC check is complete, the sheet title block will be populated for the Designer, Design Checker, Detailer and Detail Checker.

All bridge plan sheets must include the names of the Designer, Design Checker, Detailer, Detail Checker and Reviewer. The names shown on the bridge plans must be consistent with those shown on the QA/QC Certification, design calculations and plan check prints.

4.6.4 Document Reviews

Project documents (e.g., reports, specifications, design criteria, etc.) will, at a minimum, be reviewed by a second individual appropriately qualified to understand the subject matter of the document and familiar with the scope and requirements of the project. The document originator is responsible for incorporating review comments into the final document. Any differences between the originator and reviewer will be discussed and a consensus achieved prior to submittal of the document to the LA DOTD.

4.6.5 Construction Related Engineering Services Reviews

The construction submittals are typically reviewed by the Designer is to ensure conformance with the contract documents. The Contractor is responsible for the correctness of their submittals.

The DOTD PM or appropriate Task Manager shall direct the TRC PM to review each construction submittal. The TRC PM will review the assigned construction submittals to ensure that TRC and/or their subconsultants are responsible for review of the submittal. The TRC PM will assign the construction submittal review to the responsible party. The Engineer or EIT who prepared the engineering drawings shall generally be responsible for reviewing and responding to the corresponding construction submittal. Responses to reviewed construction submittals shall be provided to the TRC PM for review. The TRC PM will submit the construction submittal response or designate an engineer to do so.

Reviews for specific construction submittals shall be as follows:

- Shop drawings – Review of drawings shall be done in a similar manner as Section 4.6.3 Step 2. The submittal review need only verify correctness of pertinent design information such as plate sizes, material strengths, number of bolts, bolt diameter, splice locations, weld sizes, number and size of P/S strands, etc.
- RFI's – The RFI response shall be provided by the designer most directly responsible for the design of the corresponding RFI. The RFI response shall be reviewed by the Team Leader or an Engineer or EIT designated by the Team Leader. The engineer providing the response shall sign the RFI response.
- Design documents (Contractor design calculations, erection calculations, erection plans, temporary works, etc.) – Review of drawings shall be done in a similar manner as Section 4.6.3

Step 2. Review of calculations shall be done in a similar manner as Section 4.6.2 Step 2. The checking of contractor design documents is to be cursory in nature and focusing on areas of critical importance.

- Document submittals (O&M manuals, material submittals) – Reviews for document submittals shall be done in a similar manner to Section 4.6.4.

Engineers and Engineer Interns reviewing construction submittals shall review and comply with 2016 LSSRB Subsections 101.03, 105.02 and 801.05. Procedural requirements for Working Drawing review shall be in accordance with BDTM 75 unless the DOTD PM indicates otherwise.

Reponses to contractor submittals shall be stamped with one of the following designations:

- Returned for correction
- Ready for acceptance
- Accepted in accordance with LSSRB 105.02

4.7 Quality Assurance

Every phase or milestone of the project will undergo a QA review prior to submittal to the LA DOTD. The Reviewer is responsible for conducting the QA Review.

QA reviews consist of the following:

- QC Audit - Ensuring that the QC process was performed (e.g., calculation sheets have been checked and initialed) and the calculations, load rating report, drawings, special provisions and cost estimate are in accordance with DOTD Bridge Design practices, policies and procedures.
- QA Review - Conducting a cursory review of all documents in the package submitted by the design team. This review should focus on the constructability of the plan details; areas of critical structural importance; areas where, based on the Reviewer's experience, mistakes may be typically found; and areas that may be new to the design practice. The Reviewer may, but need not, produce independent calculations to verify submitted information.
- Providing feedback and working with the design/rating teams to resolve all issues.

The Reviewer has the option to provide their comments on the standard review form included in Appendix I. Alternately, Reviewers can mark (hardcopy) or electronically insert (if a track changes feature is available and activated) their review comments on deliverables including reports, drawings, and specifications. If this option is used to communicate review comments, the standard review form should be used to direct the Team Leader to where the review comments can be viewed.

Inter-discipline reviews will be performed at every milestone to confirm that any design conflicts are resolved prior to the Final Submittal.

4.7.1 Interim Submittal QA Review

Interim submittal QA Reviews will be conducted for all milestone submittals prior to the 100% final submittal. Prior to each milestone submittal, the Team Leader will provide the Internal Tracking Submittal Checklist (Appendix J) to the Reviewer and PM.

The Reviewer will conduct a cursory review of the deliverables (plans, load rating reports, etc.) and check the Internal Tracking Submittal Checklist (Appendix J) to ensure the QC process is being implemented.

The Reviewer will also check the Consultant Submittal Review Checklist (Appendix D) to ensure the level of completion and amount of information shown on the plans is consistent with that required for each milestone submittal.

The Team Leader will confirm that calculations, checkprints and other applicable documentation (such as code reviews and design checklists) are archived and will be available to the Reviewer if requested. The Reviewer will provide comments to Team Leader and once a resolution is reached, the appropriate plan changes will be made and the Reviewer will sign the Interim Tracking Submittal Checklist and provide to the PM.

The Project Manager will utilize the Internal Tracking Submittal Checklist (Appendix J) to verify the project will meet the submittal schedule requirements, the QA/QC has been conducted and the information in the submittal was prepared in accordance with this Project QA/QC Plan and the applicable LA DOTD standards prior to each submittal. Each interim plan submittal is required to include a Consultant Project Submittal QA/QC Certification (see Appendix K) signed by the PM.

4.7.2 Final Submittal QA Review

Upon completion of all design and detail QC checks, which shall be no later than the 95% Final Plans stage, the Team Leader is responsible for preparing the QA information package, which includes the documents listed in below, and providing the package to the PM and the Reviewer.

QA information package checklist for design projects (see Appendix F):

- Calculation book
- Plans
- Special provisions including Non-Standard items
- Cost estimate
- Any relevant documents, such as checklists, review comments, etc. utilized by the Designer, Design Checker, Detailer, and Detail Checker.

The Team Leader will also provide the QA/QC Certification (Appendix L) signed by the Designer, Checker, Detailer and Detail Checker to the Reviewer. The Reviewer will conduct a review of all documents in the QA Information Package. The Reviewer will provide feedback to the Team Leader and resolve all issues. Once all issues have been resolved, the QA/QC Certification will be signed by the Reviewer and EOR.

The final plan and calculation submittal is required to include a Consultant Project Submittal QA/QC Certification (see Appendix K) signed by the PM and the Final Plan and Calculation QA/QC Certification (Appendix L) signed by the appropriate team members.

Upon completion of the load rating check, the Team Leader is responsible for delivering the Load Rating QA Package to the Reviewer and the PM.

QA information package checklist for load rating projects (see Appendix F):

- Scope of work required per contract
- Load rating report
- Electronic design files and influence line files

- Load Rating Checklist signed by the EOR (Appendix P)

The final Load Rating Report submittal is required to include a Consultant Project Submittal QA/QC Certification (see Appendix K) signed by the PM.

4.8 Peer Review

A peer review will be performed at the request of the LA DOTD Bridge Design Engineering Administrator for complex projects. A peer review will be performed by an independent engineering firm. The peer review will include a check of the design by producing an independent set of calculations based on the 95% drawings. Independent peer review calculations will not be formally checked, unless a discrepancy is discovered. Peer review comments will be documented and provided to the LA DOTD and TRC design team for evaluation. Resolutions agreed upon by all parties shall be incorporated into the final design. A Peer Review Resolution Agreement (Appendix M) must be signed by the Peer Reviewer, Team Leader or Project Manager of the design team and the LA DOTD Bridge Task Manager. The Peer Reviewer will also sign the Final Plan and Calculation Book QA/QC Certification.

4.9 QA/QC for Design Activities after Final Plans are signed by the Chief Engineer

The same QA/QC process shall apply to all design activities after the final plans are signed by the Chief Engineer.

Plan Revisions and Change Orders shall conform to LA DOTD EDSM No. I.1.1.28.

4.10 Documentation Requirements

4.10.1 Design Calculation Books

The Team Leader is responsible for assembling design calculations from all Designers (including the final geotechnical analysis report and the hydraulic report from the geotechnical engineer and the hydraulic engineer) and finalizing the calculation book in accordance with Appendix H. The EOR is responsible for archiving all design calculation, CAD files and checkprints. The EOR is responsible for sealing the cover sheet of the calculation book.

4.10.2 Load Rating Reports

The Team Leader is responsible for assembling load rating calculations from all Raters and finalizing the Load Rating Report. The EOR is responsible for archiving all rating calculation and checkprints. The EOR is responsible for sealing the Load Rating Report.

4.10.3 Review Comments and Responses

All comments made by DOTD phase reviewers will be recorded either by copy of memos, e-mail, letters and/or marked plans received from the reviewers. In the event that comments are received through meetings with reviewers the meeting minutes prepared will include a summary of the comments received. The TRC PM will be responsible for addressing all comments and providing responses. The response will be in writing and will be formatted in a manner that identifies the document review date, reviewer's comments and responses to the comments. All comments received will be copied to the Team and forwarded to the applicable team members. The TRC PM will be responsible for submittal of comment responses to the reviewing entity.

Where it is necessary and prudent to discuss the comments with the Team Leader or other team members prior to making a response, the PM will arrange for the meeting.

Copies of all comments and responses will be kept in the project files.

4.10.4 Requests for Changes in the Scope of Work

The LA DOTD Bridge Task Manager and the TRC PM will evaluate comments or requests that are not covered in the project scope. Additions to the scope usually increase the project costs (a.k.a., Scope Creep). These requests should be evaluated on a case by case basis. The LA DOTD Bridge task Manager may recommend changes to the scope of a project, but only the LA DOTD Chief Engineer (or his designee) has the authority for the approval/denial of a scope change

4.11 QA/QC Certification

All project submittals must include a QA/QC Certification that indicates the submittals meet the requirements of this Project Quality Control / Quality Assurance Plan.

- QA/QC Certification for Interim Plan Submittals - The Project Manager will utilize the Internal Tracking Submittal Checklist to verify that the QA/QC has been conducted and the information in the submittal was prepared in accordance with this Project QA/QC Plan and the applicable LA DOTD and FHWA standards prior to each submittal. Each milestone plan submittal will include a Consultant Project Submittal QA/QC Certification (Appendix K) signed by the TRC PM.
- QA/QC Certification for Final Submittals - Upon completion of the design work (design and detail development, QC checks, QA review and Peer Review if required), the Final Plan and Calculation Book QA/QC Certification (Appendix L) will be signed by the Designer, Design Checker, Detailer, Detail Checker, Reviewer, EOR and Peer Reviewer. The final plan and calculation book submittal shall also include a Consultant Project Submittal QA/QC Certification (Appendix K) signed by the TRC PM. The load rating report submittal shall include a Consultant Project Submittal QA/QC Certification (Appendix K) signed by the TRC PM.

4.12 Sealing of Calculation Books, Plans and Rating Report by the EOR

The EOR shall seal all plan sheets or designate a Designer, Checker or Reviewer to seal the sheets developed under their supervision. The EOR must seal the general notes sheets, calculation book, load rating report and special provisions (if required).

4.13 Archiving Bridge Design and Rating Documents

The EOR is responsible for archiving all bridge design and rating files including calculation books, load rating reports, plans, CAD files, special provisions, cost estimate, electronic analysis and design files and other pertinent documents in accordance with the Bridge Design Section records retention policy (Appendix E). The PM is responsible for delivering all bridge design files to the LA DOTD Bridge Task Manager no later than 30 calendar days after the stamped and final plans are delivered. Any revisions made to these documents due to plan revisions or change orders must be delivered in accordance with LA DOTD EDSM No I.1.1.28

4.14 Software

A pre-approved list of software is posted on the Bridge Design Section website under downloads (Appendix N). If any other software is required for unique applications for which pre-approved software

cannot be used, a synopsis of the software shall be submitted to the Bridge Design Engineer Administrator for approval prior to use. The synopsis shall include the name of the software and the developer, a general description of the functions, a certification from the software developer stating that it is maintained in accordance with the latest AASHTO LRFD Bridge Design Specifications, and an account of the requester's experience and the experience of other organizations or agencies that use the software. Data/results from in-house software will not be accepted as part of the deliverable.

APPENDIX A
EVALUATION INSTRUCTIONS FOR CONSULTANT'S QA/QC PLAN DOCUMENT

Instructions for Grading the QA/QC Plan Document

The Bridge Task Manager for the project is responsible for evaluating the QA/QC plan document in accordance with the QA/QC plan document rating matrix. A score shall be given for each of the six evaluation criteria. An average score of the six evaluation criteria will be calculated. If the average score is above or equal to 3.5, an overall rating of "Excellent" shall be given. If the average score is above or equal to 3 and below 3.5, an overall rating of "Good" shall be given. If the average score is above or equal to 2.0 and below 3, the overall rating of "Acceptable" shall be given. If the average score is below 2.0, the overall rating of "Not Acceptable" shall be given. If an overall rating of "Not Acceptable" is given, justifications must be provided. The grading sheet shall be filled out by the Bridge Task Manager and signed by both the bridge task manager and his or her direct supervisor. The grading sheet for the QA/QC plan document, along with justifications when required, must be transmitted to the Project Manager in writing through a transmittal letter. The overall rating for the QA/QC plan document for each consultant team will be presented to the Secretary in addition to the shortlist.

Prior to performing the evaluation, the Bridge Task Manager must review the FHWA/AASHTO "Guidance on QA/QC in Bridge Design In Response to NTSB Recommendations (H-08-17)" and LADOTD Bridge Design Section QA/QC policies, which are the references for the Consultant to develop their QA/QC plan document. These documents can be downloaded from DOTD Bridge Design website.

Evaluation Criteria	QC/QA Plan Document Rating Matrix			
	4 - Excellent	3 - Good	2 -Acceptable	1 - Not Acceptable
A. Understanding of Consultant's and DOTD's role in QC/QA of Consultant's work	Demonstrate clear understanding that the Consultant is fully responsible for QC/QA of their work and DOTD is not responsible for performing QC/QA of consultant's work.	Demonstrate good understanding that the Consultant is fully responsible for QC/QA of their work and DOTD is not responsible for performing QC/QA of consultant's work.	Demonstrate basic understanding that the Consultant is fully responsible for QC/QA of their work and DOTD is not responsible for performing QC/QA of consultant's work.	Demonstrate poor understanding that the Consultant is fully responsible for QC/QA of their work and DOTD is not responsible for performing QC/QA of consultant's work.
B. Understanding of the QC/QA concepts in Bridge Design	Demonstrate clear understanding of QC/QA concepts in bridge design. Definitions of QC/QA are clearly defined.	Demonstrate good understanding of QC/QA concepts in bridge design. Definitions of QC/QA are clearly defined.	Demonstrate basic understanding of QC/QA concepts in bridge design. The definitions of QC/QA are defined.	Demonstrate poor understanding of QC/QA concepts in bridge design. The definitions of QC/QA are not clearly defined.
C. Responsibilities of Designer, Checker, Reviewer, and Engineer of Record	Responsibilities of Designer, Checkers, Reviewer, and Engineer of Record are clearly defined.	Responsibilities of Designer, Checker, Reviewer, and Engineer of Record are well defined.	Responsibilities of Designer, Checker, Reviewer, and Engineer of Record are defined.	Responsibilities of Designer, Checker, Reviewer, and Engineer of Record are not clearly defined.
D. Description of the QC and QA processes and its effectiveness to ensure the accuracy of the design and the plan details	QC/QA processes are clearly described and should be very effective to ensure the accuracy of the design and the plan details.	QC/QA processes are clearly described and should be effective to ensure the accuracy of the design and plan details.	QC/QA processes are described and should be effective to ensure the accuracy of the design and the construction plan details.	QC/QA processes are not clearly described and do not seems to be effective to ensure the accuracy of the design and the construction plan details.
E. Identification of personnel qualified to perform the bridge design and QC/QA of the design and plan details	The designers and QC/QA personnel are clearly indentified and are exceedingly qualified to perform the work.	The designers and QC/QA personnel are clearly indentified and are qualified to perform the work.	The designers and QC/QA personnel are indentified and are qualified to perform the work.	The designers and QC/QA personnel are not clearly indentified or not identified and the qualifications of the personnel identified are questionable.
F. Use of QC/QA tools, such as Checklists, Standard Forms, Training materials, etc.	QC/QA tools, such as checklists, standard forms, training materials, etc., have been developed and well documented. These tools are well suited for the scope and the complexity of the project.	QC/QA tools, such as checklists, standard forms, training materials, etc., have been developed and documented. These tools are suitable for the scope and the complexity of the project.	QC/QA tools, such as checklists, standard forms, training materials, etc., have been developed and are acceptable to be used for this project.	QC/QA tools, such as checklists, standard forms, training materials, etc., have not been developed or the developed ones are not suitable for this project.

Grading Sheet for the QA/QC Plan Document

Project No.:
Project Description:

Prime Consultant	Evaluation Criteria	Score	Overall Rating	Justifications/Comments
Consultant 1	A			
	B			
	C			
	D			
	E			
	F			
	Average			
Consultant 2	A			
	B			
	C			
	D			
	E			
	F			
	Average			
Consultant 3	A			
	B			
	C			
	D			
	E			
	F			
	Average			
Consultant 4	A			
	B			
	C			
	D			
	E			
	F			
	Average			

Prepared by: _____ _____ _____
Name Signature Date

Approved by: _____ _____ _____
Name Signature Date

APPENDIX B
CONSULTANT KICK-OFF MEETING AGENDA CHECKLIST

Consultant Project Kick-Off Meeting Agenda Checklist

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

__ Introduce LADOTD Bridge Task Manager and the Consultant's Key Team Members (The Supervisor or Team Leader and Key Designers/Design Checkers/Reviewers)

__ Discuss Consultant's Staffing Plan and Implementation of QA/QC Plan Document
(The staffing plan should include names and responsibilities of the designers, detailers, checkers, reviewers, and the EOR.)

__ Determine Schedules for Project Submittals
(Design Criteria, TS & L, 30%, 60%, 90%, 100% of Preliminary Plans and Final Plans, Final Calculations, etc.)

__ Share Expectations and Consultant Rating Criteria
(Consultant rating will be performed for all project submittals shown on the project submittal schedule.)

__ Discuss Design Criteria

__ Discuss Budget, Supplemental Requests, Invoices, and Importance of Avoiding Claims
(Staff shown on invoices will be reviewed in accordance with the staffing plan.)

APPENDIX C
PROJECT ACTIVITY LOG SHEET

Project Activity Log Sheet

Project No.:

Project Name:

Bridge Task Manager:

Date	Project Activity	Comments

APPENDIX D
CONSULTANT SUBMITTAL REVIEW CHECKLIST

Consultant Submittal Review Checklist

Items	Submittals												
	Design Criteria	TS&L	30% PP	60% PP	90% PP	100% PP	30% FP	60% FP	90% FP	100% FP	Final Calculation Book	Plan Revisions	Change Orders
Consultant Submittal QC/QA Certification			R	R	R	R	R	R	R	R	R	R	R
Design Criteria	C												
TS&L		C											
Bridge Index			D	D	D	D	D	D	C	S			
General Notes			D	D	D	D	D	D	C	S			
Summary of Estimated Quantities			D	D	C	C	D	D	C	S			
General Plans			D	D	C	C	C	C	C	S			
Typical Sections			D	D	C	C							
Superelevation Diagram				D	D	C	C	C	C	S			
Construction Phasing Details				D	D	C	C	C	C	S			
Traffic Controls Details				D	D	C	C	C	C	S			
Foundation/Pile Layout				D	D	C	C	C	C	S			
Pile Loads/Details					D	D	D	C	C	S			
Pile Data Tables							D	D	C	S			
Bent Details							D	D	C	S			
Fender Details							D	D	C	S			
Girder Details							D	D	C	S			
Span Details							D	D	C	S			
Joint Details								D	C	S			
Bearing Details								D	C	S			
Approach Slab								D	C	S			
Guardrail Details								D	C	S			
Bridge Barrier/Railing Details								D	C	S			
Bridge Drainage Details								D	C	S			
Detour Bridge Details								D	C	S			
Revetment Details								D	C	S			
Signing/Lighting Details								D	C	S			
Year Plate								D	C	S			
Rebar Support								D	C	S			
Misc. Details								D	C	S			
Project Specific Standard Plans and Special Details								D	C	S			
Electrical/Lighting Details								D	C	S			
Mechanical Details								D	C	S			
As-Built Plans								D	C	C			
Special Provisions/NS-Items							D	D	C	C			
Cost Estimate					D	D	D	D	C	C			
Final Calculations											S		
Revised Plans/Calculations												S	S

Legends:

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

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

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

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

APPENDIX E
BRIDGE DESIGN SECTION RECORDS RETENTION POLICY

Bridge Design Section Records Retention Policy

(Updated 1/27/2012)

Item No.	Record Title	In Office Retention Period (by Bridge Design Section)	DOTD Total Retention (By General Files)	Archiving Instruction	Responsible Party
001	Design Manuals/Guidance and Bridge Design Technical Memoranda	Life of the Agency	Life of the Agency	Archive electronically in Project-wise under Documents\ Reference Materials\Bridge Design Section Archive\Design Manuals-Guidance	Assistant Bridge Design Administrator responsible for design manuals
002	Bridge Design Standard Plans and Special Details	Life of the Agency	Life of the Agency	Archive electronically in Project-wise under Documents\ Standard Drawings *(Instructions for archiving standards are posted on bridge design website under Standards/Revising or Creating Standards)*	Bridge Design Standards Manager
003	Final Plans, Revisions, and Change Orders (CAD files)	Life of the Agency	Life of the Agency	Archive electronically in Project-wise under Project folder\Bridge-Facilities\Discipline\Plans *(Subfolders for each revision and change order should be created under Plans)*	Bridge Task Managers
004	Final Plans, Revisions, and Change Orders (Original signed hard copies)	Life of the Agency	Life of the Agency	Transmit to General Files and archive electronically in DOTD Network Plan Room by General Files	Bridge Task Managers
005	Final Plans, Revisions, and Change Orders (Digital signed copies in pdf format, to be implemented)	Life of the Agency	Life of the Agency	Archive electronically in Project-wise under Project folder\ Published Submittals\Project Drawings\ Final Plans	Bridge Task Managers
006	Shop Drawings and Erection Drawings (Final Distribution Copy in pdf format)	Life of the Agency	Life of the Agency	Archive electronically in Project-wise under Project folder\ Published Submittals\Project Drawings\Construction Drawings\Shop Drawings *(See BDTM.26 for instructions)*	Bridge Task Managers
007	Shop Drawings and Erection Drawings (Final Control Set hard copies)	Life of the Agency	Life of the Agency	Transmit to General Files and archive electronically in DOTD Network Plan Room by General Files *(See BDTM.26 for instructions)*	Bridge Task Managers

Item No.	Record Title	In Office Retention Period (by Bridge Design Section)	DOTD Total Retention (By General Files)	Archiving Instruction	Responsible Party
008	Final Design Calculation Files for In-House and Consultant Projects (Stamped calculation book in pdf format, stamped final reports, and final electronic design models)	Life of the Agency	Life of the Agency	Archive electronically in Project-wise under Project Folder_ Published Submittals\Project Documents\Final Design Calculations & Reports	Bridge Task Managers
009	Bridge Rating Reports	Life of the Agency	Life of the Agency	Archive electronically in Project-wise under Documents_ Reference Materials\Bridge Design Section Archive\Bridge Rating Reports	Bridge Rating Engineer
010	Truck Permits	Life of the Agency	Life of the Agency	Archive electronically in Project-wise under Documents_ Reference Materials\Bridge Design Section Archive\Truck Permits	Bridge Rating Engineer
011	Chief Engineer Orders (Bridge Posting)	Life of the Agency	Life of the Agency	Archive electronically in Project-wise under Documents_ Reference Materials\Bridge Design Section Archive\Chief Engineer Orders (Bridge Posting)	Bridge Rating Engineer
012	Project Related Correspondences (Hard Copies)	Final project acceptance date + 3 years	Life of the Agency	Archive electronically in Content Manager under Design Projects. At the end of in office retention period, the hard copies shall be boxed, marked with project number and record item No. with description, and then transmitted to General Files for their handling.	Project Managers/Bridge Task Managers
013	Project Related Correspondences (Emails) *(Note: If the email is considered as important project correspondence and needs to be kept for the life of agency, then the email should be printed and treated as item 012.*	Final project acceptance date + 3 years	Final project acceptance date + 3 years	Archive electronically in Project-wise under Project Folder_ Published Submittals\Project Documents\Project Correspondence Emails	Project Managers/Bridge Task Managers
014	Administrative or Other Types of Correspondences	Life of the Agency	Life of the Agency	Archive electronically in Content Manager under Bridge Design Subject Files	Everyone

APPENDIX F
QA INFORMATION PACKAGE CHECKLIST

QA Information Package Checklist

Project No.:

Project Name / Description:

QA information package checklist for design projects

_____ Calculation Book

_____ Plans

_____ Special Provisions

_____ Cost Estimate

_____ Other Documents _____

QA information package checklist for load rating projects

_____ Scope of work required per contract

_____ Load rating report

_____ Electronic design files and influence line files

_____ Load Rating Checklist signed by the EOR

APPENDIX G
BRIDGE DESIGN CRITERIA CHECKLIST

Bridge Design Criteria Checklist

The project design criteria include, but are not limited to, the following sections:

__ **Cover sheet**

The following information must be included on the cover sheet:

- LADOTD project number
- Project name
- Revision date
- The Project Manager's signature and date

__ **Governing Design and Construction Specifications and Other References**

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

__ **Design Assumptions and Design Exceptions**

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

__ **General Information**

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

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

__ **Hydraulic Design Criteria**

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

__ **Design Factors**

The ductility factor η_D, redundancy factor η_R, and operational importance factor η_I shall be listed in this section.

__ **Design Loads**

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

__ **Limit States**

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

__ **Bridge Barrier**

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

__ **Guardrail**

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

__ **Approach Slab**

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

__ **Deck and Deck Drainage**

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

__ **Bearing**

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

__ **Joint**

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

__ **Superstructure**

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

__ **Substructure**

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

__ **Piles and Drilled Shafts**

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

__ **Geotechnical Design**

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

__ **Mechanical Design**

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

__ **Electrical/Lighting Design**

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

__ **Bridge Load Rating Criteria**

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

__ **Software**

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

APPENDIX H
FINAL CALCULATION BOOK CHECKLIST

Final Calculation Book Checklist

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

__ **Cover Sheet**

The following information must be included on the cover sheet:

- LADOTD project number
- Project name
- The title of "Final Calculation Book"
- The EOR's seal with signature and date

__ **Final Calculation Book Check List**

__ **QA/QC Certifications**

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

__ **Design Criteria**

__ **Final Hydraulic Analysis Report from Hydraulic Engineer**

__ **Final Geotechnical Analysis Report from Geotechnical Engineer**

__ **Superstructure Design Calculations**

__ **Substructure Design Calculations**

__ **Quantity Calculations**

__ **Special Provisions/NS-Items**

__ **Construction Cost Estimate**

__ **As-Designed Rating Report**

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

Consultants shall submit the final calculation book to LADOTD bridge task managers; the submittal shall be on a CD or Flash Drive or placed to a designated ProjectWise folder including the following information:

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

__ **All Electronic Design Files**

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

APPENDIX I
QA REVIEW COMMENT FORM

QA Review Comment Form

Date: _____

Sheet: _____ of _____

Project: _____ Task or Team: _____

Reviewer: _____ Phase: *(Pick One)* 30% 60% 90% 95% 100%

Indicate Yes or No:

Yes No I have Review Comments to provide to the author and/or design engineer.
Yes No Review Comments are handwritten on the document/sheet (see attached).
Yes No Review Comments are recorded in the electronic file of the document/sheet (see attached).

If yes to any, documenting Type 2 comments on this form is optional, if they are recorded elsewhere.
In ALL cases, Type 1 comments and responses must be summarized or listed below.

Reference Page/Sheet No.	Review Comment (*Reviewer*)	Type [a] 1 or 2	Response (*Task Manager*) C = Changes made as per comment. O = Other, describe or explain.

[a] List each item reviewed to document completeness of review process. Record "NA" if no comments.

[b] Type: 1 = Potentially serious quality issue. Responsible Engineer and Reviewer must discuss and agree on a resolution.
2 = Minor comment that can be readily addressed or a potential improvement to deliverables.

APPENDIX J
INTERNAL TRACKING SUBMITTAL CHECKLIST

Internal Submittal Status Tracking

Project:	
Team / Group:	

Items	Designer / Rater	Checker	Detailer	Detail Checker	Reviewer	Status
Consultant Submittal QC/QA Certification						
Design Criteria						
TS&L						
Bridge Index						
General Notes						
Quantity Calculations						
Construction Cost Estimate						
General Plans						
Typical Sections						
Superelevation Diagram						
Construction Phasing Details						
Traffic Controls Details						
Foundation / Pile Layout						
Pile Loads / Details						
Pile Data Tables						
Bent Design/Details						
Fender Design/Details						
Girder Design/Details						
Span Design/Details						
Joint Design/Details						
Bearing Design/Details						
Approach Slab						
Guardrail Design/Details						
Bridge Barrier / Railing Design/Details						
Bridge Drainage Design/Details						
Detour Bridge Details						
Revetment Details						
Signing / Lighting						
Misc. Details						
Project Specific Standard Plans and Special Details						
Electrical/Lighting Details						
Mechanical Details						
As-Built Plans						
Special Provisions / NS-Items						
Cost Estimate						
Final Calculations						
Load Rating Report						
Load Rating Calculations						
Revised Plans / Calculations						

Notes:
1) This sheet is intended to be used for internal status and QC/QA tracking.
2) Initials indicate the individual responsible for the task.

APPENDIX K
CONSULTANT PROJECT SUBMITTAL QA/QC CERTIFICATION

Consultant Project Submittal QA/QC Certification

Project No.:

Project Name:

Submittal Description:

I, the undersigned Project Manager for this project, certify that the information included in this submittal has been prepared in accordance with the approved TRC Project Quality Control / Quality Assurance Plan and LADOTD Bridge Design Section policy on QA/QC and the information presented is accurate and meets the requirements of this submittal. All CAD drawings meet LADOTD CAD standards.

_____

Submittal Description

_____	_____	_____
Project Manager Name	Signature	Date

APPENDIX L
FINAL PLAN AND CALCULATION BOOK QA/QC CERTIFICATION

Final Plan and Calculation Book QA/QC Certification

Project No.:

Project Name / Description:

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

Bridge: Segment:						
Team Members	Name	Louisiana PE Registration No.	Responsible Plan Sheets	Responsible Special Provisions	Construction Cost Estimate	Signature
Designers						
Design Checkers						
Detailers						
Detail Checkers						
Reviewers						
Peer Reviewer						
EOR						

APPENDIX M
PEER REVIEW RESOLUTION AGREEMENT

Peer Review Resolution Agreement

Project No.:
Project Name:

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

Team Members	Name	Signature
Peer Reviewer		
Team Leader		
LADOTD Representative		

APPENDIX N
LA DOTD PRE-APPROVED SOFTWARE LIST

Louisiana Department of Transportation and Development

Bridge Design Section

Pre-Approved Software List

Updated: March 10, 2021

Developer	Software Name
AASHTO, Inc.	AASHTOWare Bridge Design
AASHTO, Inc.	AASHTOWare Bridge Rating
AASHTO, Inc.	AASHTOWare PS Design Tool
Acuity Brands Lighting, Inc.	Visual
Bentley Systems, Inc.	CONBOX
Bentley Systems, Inc.	CONSPAN
Bentley Systems, Inc.	CONSPLICE
Bentley Systems, Inc.	GEOMATH
Bentley Systems, Inc.	Microstation
Bentley Systems, Inc.	OPEN Bridge Modeler
Bentley Systems, Inc.	RCPier
Bentley Systems, Inc.	RM Bridge
Bentley Systems, Inc.	STAAD
Bentley Systems, Inc.	STAAD Beava
Bentley Systems, Inc.	STAAD Section Wizard
Bridge Software Institute	FB-Pier
Computers and Structures, Inc.	CSiBridge
Computers and Structures, Inc.	CSiCOL
Computers and Structures, Inc.	SAP 2000
CSI, Ltd.	DDM
DOTD In-House	COMPSTIL
DOTD In-House	TimberC
Drive Systems Technology, Inc.	Power Gear
Elite Software	CHVAC 8
Ensoft, Inc.	L-Pile
Finite Element Analysis, Ltd.	LUSAS
LARSA, Inc.	LARSA 4D Bridge Plus
Lighting Analysts, Inc.	AGi32
MDX Software, Inc.	MDX
MIDASoft	Midas Civil
Operating Technology, Inc.	ETAP

Developer	Software Name
PTC, Inc.	MathCAD
Smart Bridge Technology	Smart Bridge Suites
SolidWorks Corporation	SOLIDWORKS
Structure Point, LLC	spColumn
University of Maryland	Sabre
Vista Data Vision	VDV
Wyoming DOT	BRASS-Culvert

Note:

1. **If any other software is required for unique applications for which pre-approved software cannot be used, a synopsis of the software shall be submitted to the Bridge Design Engineer Administrator for approval prior to use. The synopsis shall include the name of the software and the developer, a general description of the functions, a certification from the software developer stating that it is maintained in accordance with the latest AASHTO LRFD Bridge Design Specifications, and an account of the requester's experience and the experience of other organizations or agencies that use the software. Data/results from in-house software will not be accepted as part of the deliverable.**

2. **The cost of software shall be included in the overhead cost of the firm and not a direct expense for the projects.**

APPENDIX O
BRIDGE LOAD RATING SUMMARY SHEET

Bridge Load Rating Summary Sheet

Bridge Data

District		Structure Number				Bridge Name	
Parish		Recall Number				Inspection Date	
Route		Year Built				Overall	
Bridge Posting		Design Load				Deck	
Bridge Type		Roadway Width				Super	
Bridge Length		Plan Location	-			Sub	
Standard Plan	-	Std Plan Yr | Rev-	-	-		Culvert | Channel	-	-

Bridge/Culvert Load Rating Summary

Dead Load		LRFR Evaluation Factors		Traffic
Wearing Surface Thickness (in)	-	Condition Factor, super (ϕ_c)	1.00	ADTT (one way)
Wearing Surface Type		Condition Factor, sub (ϕ_c)		
Non-Structural Attachments	-	System Factor, super (ϕ_s)	1.00	
Fill Thickness (in)		System Factor, sub (ϕ_s)		

		Superstructure/Deck/Culvert				Substructure			
Vehicle Type	GVW (kips)	Rating Factor	Posting Weight (tons)	Controlling Member	Controlling Load Effect	Rating Factor	Posting Weight (tons)	Controlling Member	Controlling Load Effect
HL-93 (INV)	N/A								
HL-93 (OPR)	N/A								
LADV-11(INV)	N/A								
LA Type 3	41.0		-				-		
LA Type 3S2	**73.0**		-				-		
Type 3-3	**80.0**		-				-		
LA Type 6	**80.0**		-				-		
LA Type 8	**88.0**		-				-		
SU4	54.0		-				-		
SU5	62.0		-				-		
SU6	69.5		-				-		
SU7	77.5		-				-		
Lane-Type I	N/A								
Lane Type II	N/A								
EV2	57.5		-*				-*		
EV3	86.0		-*				-*		

* Informational purposes only

Posting Analysis Summary

	PV-Single	PV-Comb
Superstructure		
Substructure		
Recommended Posting Load		No Limit

As-Design Rating ☐

QC/QA

Rated By:

Checked By: Design Project Number:

QA By: Rating Software:

Date Rated:

NOTES

V2020-09-30 3/15/2021

APPENDIX P
BRIDGE LOAD RATING CHECKLIST

LOAD RATING REPORT CHECKLIST (LADOTD)

Project No. _____ Bridge _____

Submittals:

An Electronic Version of the Load rating Report including any computer models used in analysis		N/A*	
Hard Copy (one) [*for each bridge*]	☐	☐	_____
PDF Copy (one) [*for each bridge*] On removable storage: CD, Flashdrive, Projectwise, large file transfer	☐	☐	_____
All bridge plans on separate CD (or flashdrive if too large) to be included with rating documents	☐	☐	_____
Rating Report prepared for each bridge (this maybe each structure number)	☐	☐	_____
One AASHTOWare BrR/BrD model for each bridge Bridge span numbers shall follow the inspection report (NBI Inventory)	☐	☐	_____

Rating Report:

Cover sheet	☐	☐	_____
Recall Number on Cover Sheet	☐	☐	_____
Stamped and Signed Bridge Load Rating Summary Sheet with Engineering Seal and signature	☐	☐	_____
Rater Initials	☐	☐	_____
Checker Initials	☐	☐	_____
Reviewer Initials	☐	☐	_____
List all assumptions	☐	☐	_____
List all material values	☐	☐	_____
Discussion of current condition of bridge and any assumptions based on that	☐	☐	_____
Critical rating values	☐	☐	_____
Rating Output of every rated member	☐	☐	_____
Influence line (if applicable, see refined methods below)	☐	☐	_____
Hand calculations, sample calculations	☐	☐	_____

see next page for additional items

LOAD RATING REPORT CHECKLIST (LADOTD) (continued) Page 2 of 2

Project No. _____ Bridge _____

Rating Report (cont):

To be incorporated into Rating Report:

		N/A*	
Structure Description	☐	☐	_____
Vicinity Map	☐	☐	_____
Bridge Layout Plans	☐	☐	_____
Load Rating Inspection Reports	☐	☐	_____
Material and Load Test Data	☐	☐	_____
Supporting Calculations	☐	☐	_____
Clear Statement of all assumptions made for calculations	☐	☐	_____
Sketches to document section loss used in Analysis	☐	☐	_____
Previous Inspection Reports	☐	☐	_____
Testing Reports	☐	☐	_____
Reference Articles	☐	☐	_____
BrR/BrD Input Data File	☐	☐	_____

For Refined Methods:

Live Load Distribution Factors for all rated members	☐	☐	_____
Computer model files and associated documentation	☐	☐	_____
Influence line/surface submittal for any member not rated by BrR/BrD	☐	☐	_____

* For items marked N/A, include the reason for not including.

Engineer of Record: _____ _____
Print Signature

Company: _____


TRC

22. Sub-consultant information:

Firm Name (as registered with Louisiana's Secretary of State)	Address	Point of Contact and email address	Phone Number
Moffatt & Nichol, Inc.	301 Main Street, Suite 800 Baton Rouge, LA 70801	Chace Hulon chulon@moffattnichol.com	(225) 610-1932
Urban Systems, Inc.	2000 Tulane Avenue, Suite 200 New Orleans, LA 70112	Alison Michel Acmichel@urbansystems.com	(504) 569-3958
Bridge Diagnostics, Inc.	740 S. Pierce Ave, Unit 15 Louisville, CO 80027	Scott Aschermann scotta@bditest.com	(303) 494-3230
APS Engineering & Testing, LLC	1645 Nicholson Drive Baton Rouge, LA 70802	Sergio Aviles sergio@aps-testing.com	(225) 456-5714
KTA-Tator, Inc.	145 Enterprise Drive Pittsburgh, PA 15275	Leah K. Tipton, MPH, DrPH ltipton@kta.com	(412) 788-1300 x222
NTB Associates, Inc.	525 Louisiana Avenue Shreveport, LA 71101	John W. King jking@ntbainc.com	(225) 751-4002
Holden Architects, A Professional Corporation	9100 Bluebonnet Centre Blvd., Suite 401 Baton Rouge, LA 70809	Thomas S. Holden holden@holdarch.com	(225) 389-0077
Wiss, Janney, Elstner Associates, Inc.	330 Pfingsten Road, Northbrook, IL 60062	Jonathan McGormley jmcgormley@wje.com	(847) 753-7234
Regis Infrastructure Group, LLC	16851 Jefferson Hwy., Suite 6A, Baton Rouge, LA 70817	Raul H. Regis, PE rhregis@regisig.com	(225) 316-5842

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.