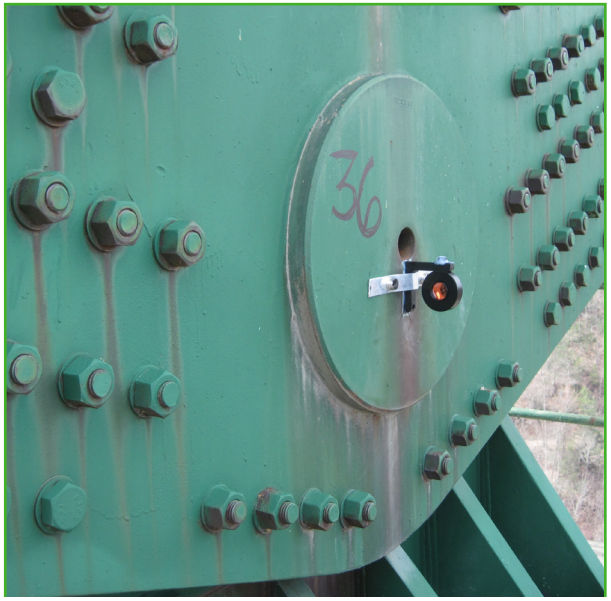
Submitted To:
Louisiana Department of Transportation and Development

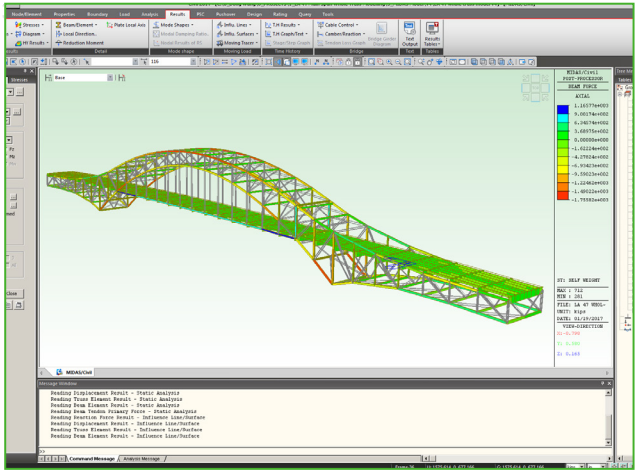
DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Qualifications Statement

IDIQ Contract for Bridge Load Rating Services, Statewide

Contract No. 4400025865





TRC

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TRCcompanies.com

January 11, 2023

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
IDIQ Contract for Bridge Load Rating, Statewide
Contract No. 4400025865

Dear Mr. Gorbaty,

TRC Engineers, Inc. (TRC) 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 contract. We acknowledge receipt of Addendum No. 1 issued on December 15, 2022. Highlights of our qualifications to deliver all work under this contract to the complete satisfaction of the LA DOTD include the following:

- Accomplished Project Manager with more that 36 years of bridge-related engineering experience who has led the load rating of numerous off-system and on-system bridges of varying complexity for the LA DOTD. He is a 17-year veteran of TRC and has a clear understanding of your needs and expectations.
- Well-staffed Baton Rouge office which has delivered challenging and complex projects for the LA DOTD over the past 17 years, including bridge load rating assignments. The majority, if not all, of the work required under this contract will be performed right here in Louisiana.
- In-depth experience with the LA DOTD's ProjectWise and AssetWise sites, along with the Load and Resistance Factor Design (LRFD) method and AASHTOWare BrR/BrD software.
- Demonstrated success with the management of several previous LA DOTD IDIQ retainer contracts, including statewide bridge load rating work.

TRC is highly appreciative of your review and consideration of our team's credentials and looks forward to your decision.

Sincerely,

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

DOTD FORM: 24-102

PROPOSAL TO PROVIDE CONSULTANT SERVICES

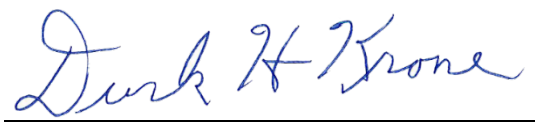
(Revised January 1, 2023)

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.

1. Contract title as shown in the advertisement	**IDIQ Contract for Bridge Load Rating, Statewide**
2. Contract number(s) as shown in the advertisement	4400025865
3. State Project Number(s), if shown in the advertisement	N/A
4. Prime consultant name (name must match 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	4545 Sherwood Common Blvd., Building 3, Suite A Baton Rouge, LA 70816
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) 229-2968 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) 229-2968 e-mail: dkrone@trccompanies.com

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

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 above shall be the same person listed in Section 9: January 11, 2023 Date:
11. If a Disadvantaged Business Enterprise (DBE) goal has been set for this advertisement, indicate which firm(s) will be used to meet the DBE goal and each firm(s)' percentage.	Firm(s): N/A (Good Faith Effort documentation enclosed) Firm(s)':%: N/A

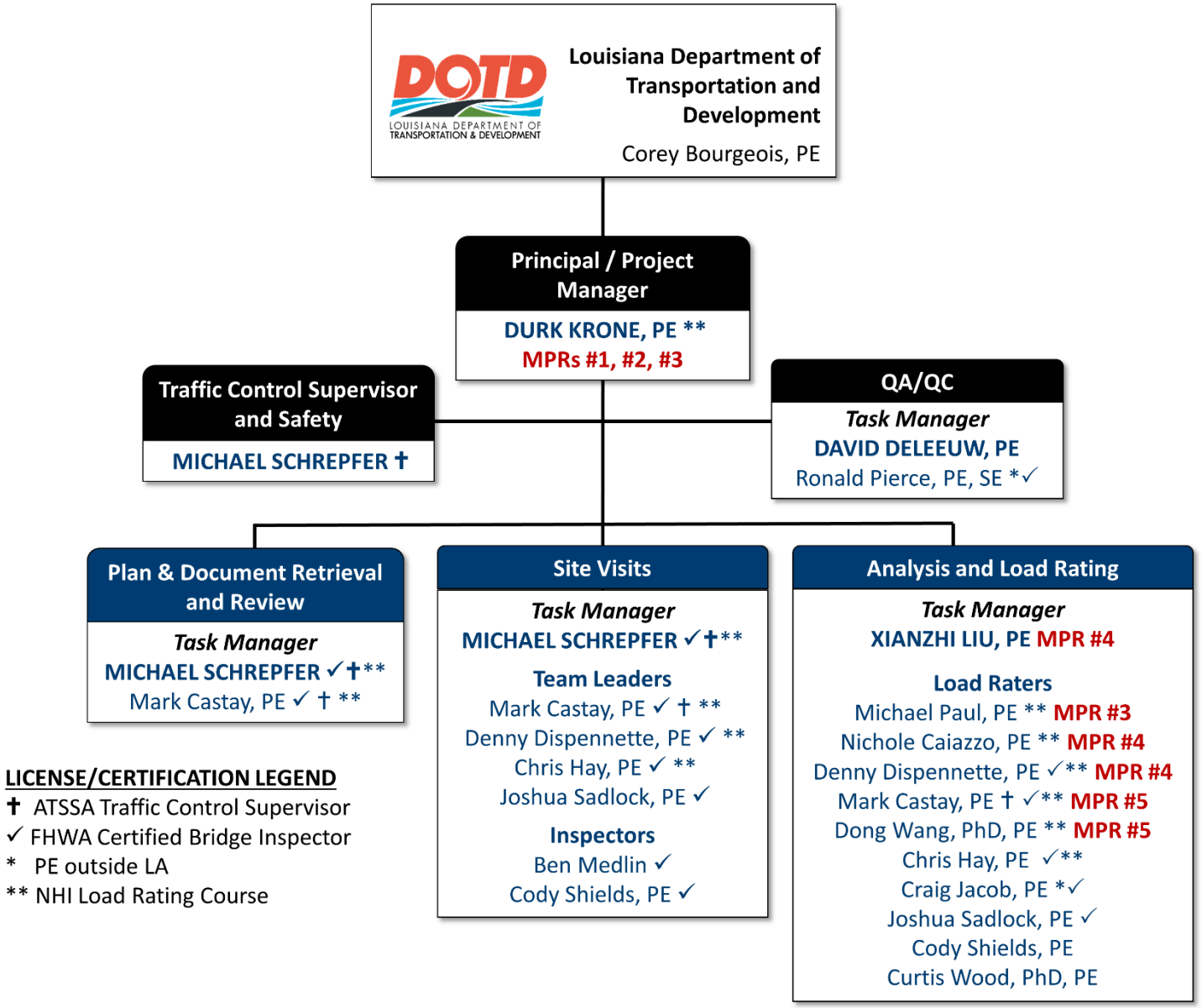
12. Past Performance Evaluation Discipline Table:

Past Performance Evaluation Discipline(s)	% of Overall Contract	TRC					Each Discipline must total to 100%
Bridge	100%	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%**	100%					

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 - Engineer	7	9
	Supervisor - Other	1	1
	Engineer	8	21
	CADD Technician	0	7
	Administrative	1	4
	Engineer - Other	0	34
	Inspector - Bridge	2	20

14. Organizational Chart:



LICENSE/CERTIFICATION LEGEND

† ATSSA Traffic Control Supervisor
✓ FHWA Certified Bridge Inspector
* PE outside LA
** NHI Load Rating Course

15. Minimum Personnel Requirements:

MPR No. Do not insert wording from ad	Personnel being used to meet the MPR (Individual(s) may not satisfy more than one MPR unless specifically allowed by Attachment B of the advertisement)	Firm employed by	Type of license and discipline meeting MPR/ certification & number (Ex: PE # - Civil)	State of license	License / certification expiration date
1	Durk Krone, PE	TRC Engineers	PE - #PE.0031955 – Civil	LA	3/31/2024
2	Durk Krone, PE		PE - #PE.0031955 – Civil	LA	3/31/2024
3	Durk Krone, PE Michael Paul, PE		PE - #PE.0031955 - Civil PE - #PE.0032172 – Civil	LA LA	3/31/2024 3/31/2024
4	Xianzhi “Sage” Liu, PE Nichole Caiazzo, PE Denny Dispennette, PE		PE - #PE.0034727 - Civil PE - #PE.0041078 - Civil PE - #PE.0042845 – Civil	LA LA LA	9/30/2023 3/31/2023 3/31/2023
5	Dong Wang, PhD, PE Mark Castay, PE		PE - #PE.0044141 - Civil PE - #PE.0039430 - Civil	LA LA	3/21/2024 9/30/2023

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Durk Krone, P.E.**	Years of experience with this employer	17
Title	Vice President	Years of experience with other 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 #130092 – Fundamentals of LRFR, 2015
Contract role(s) / brief description of responsibilities		**MPRs #1, #2, #3 -** Principal-in-Charge/Project Manager	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
02/21 – 12/21	**Broadmore Bridge Assessment and Special Haul Load Rating, Lake Arthur, LA (Private Client)** – Principal-in-Charge/Project Manager responsible for performing the load rating and assessment of an **off-system concrete slab bridge** for special hauling vehicles. Performed **QA/QC** for the pre- & post-inspection reports with load ratings and special haul vehicle movement recommendations.
10/19 - 01/21	**Contract No. H.012485.1 Off-system Load Rating, Statewide, LA (DOTD) –** Principal-in-Charge/Project Manager responsible for the assessment and load rating of **426 off-system bridges (COSLAB, COPCSS, steel and concrete girders, railroad flat cars, culverts).** He managed two engineering sub-consultants and five teams of TRC load raters. Services included: Plan and Document Retrieval and Review; Bridge Inspections; Structural Modeling and Analysis; Load Rating of each assigned bridge based on present condition. The load ratings were performed using the current LADOTD BDEM, AASHTO MBE and DOTD *Policies and Guidelines for Bridge Rating and Evaluation.* He ensured the project was completed on under budget and met the accelerated schedule**.**
03/18 - 05/18	**Contract No. 4400010099 (H.009859.5), Complex Off-system Bridge Rating and Evaluation, Statewide, LA (DOTD) –** Principal-in-Charge/Project Manager for the inspection and load rating of an **off-system truss bridge** over the Tensas River. Services completed included Plan and Document Retrieval and Review; Bridge Inspection; Structural Modeling and Analysis; and development of CAD drawings for bridge without as-built plans. He performed **QC/QA** of the inspection and load rating reports for the Prime consultant.
09/17 – 06/18	**Office of State Aid and Construction, Bridge Inspection and Off-system Load Rating Contract, Statewide, MS -** Principal-in-Charge for this contract to provide **160 off-system routine bridge inspections and load ratings** in accordance with the National Bridge Inspection Standards (NBIS) and AASHTO MBE. Services included: Plan and Document Retrieval and Review; Bridge Inspection; Structural Modeling and Analysis; and Repairs. He performed **QC/QA** on the inspection and load rating reports. The project was on an **accelerated schedule** and he ensured the project was **delivered on schedule and under budget**.
03/17 – 12/22	**S.P. No. 44-17264; H.011965.5, LA 47 over IWGO Rehabilitation, New Orleans, LA (DOTD) -** Project Principal for structural rehabilitation, cleaning and painting of this historic bridge (1,248 feet of steel main spans with cantilevered arms and tied-arch). Preliminary and final plans address the repair and rehabilitation of all substructure and superstructure elements using LA Specs for Roads and Bridges, LA DOTD BDEM, and AASHTO MBE. A preliminary jacking analysis and repair scheme for the tied-arch tie girder (chord) repairs was provided. Served as Team Leader during a bridge inspection in advance of the design. He also provided **QC/QA reviews** of the inspection and 3D scanning reports. Serving as Principal for the ongoing Construction Support Services.

04/16 – 12/19	**Contract No. 4400004920 (H.009859.5) Complex Load Rating and Inspection, Statewide, LA (DOTD) –** Principal-in-Charge/Project Manager directing the load ratings and inspections of complex bridges that included **complex 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 **AASHTOWare BrR** and 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 three sub-consultants.
03/15 – 12/22	**Walter O. Bigby Carriageway, Bossier City, LA (Bossier Parish)** – Project Principal for design of the North Parkway Extension from North of Eatman Street to Benton Highway. The project follows the 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) using the LA Specs for Roads and Bridges, LA DOTD BDEM, and AASHTO MBE. Principal-in-Charge responsible for the load rating of **steel girder spans**, a load rating report, and **QA/QC of the load ratings**.
05/15 - 11/15	**Contract No. 4400002791 (H.003495 & H.011111), I-49 & I-220 Interchange, Caddo Parish, LA (DOTD)** – Principal-in-Charge/Project Manager responsible for **AASHTOWare BrR load rating** for I-49 over MLK Bridge and QC/QA of load rating report.
11/14 – 12/14	**Bayou Choctaw SPR Bridge Inspections and Load Ratings, Iberville Parish, LA (Dept. of Energy)** – Project Manager responsible for the **off-system load rating** and routine inspections of a M2 Bailey truss bridge, timber bridge, and two concrete girder bridges. He determined the bridge conditions that affected the load ratings and performed **QC/QA** of the inspection and load rating reports.
03/14 – 06/14; 07/10 – 11/10	**Kanawha Falls Steel Truss Bridge Rating, Kanawha Falls, WV (WVDOH) –** Task leader for the inspection, rehabilitation and load rating for this 985' **steel truss bridge**. Performed **QC for the load rating analysis** using STAAD and RISA and a 3-D model analysis for final design of the truss rehabilitation. Reviewed inspection reports and rating calculations based on the latest MBE.
03/20 – 12/22	**S.P. No.: H.005121, LA1/LA415 Connector, West Baton Rouge Parish, LA (LADOTD)** – Principal-in-Charge/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 that tie in at the I-10 ramps at LA 415.
12/10-12/22	**S.P. No.: H.001234, LA 1 Port Allen Canal Bridge Replacement, West Baton Rouge Parish, LA (DOTD)** – Principal-in-charge/Project Manager for development of two different bridge detour alignments. Each consisted of a 2,500' detour bridge over the Intracoastal Waterway using a proprietary Acrow system. Project Manager for a 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. 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 using Accelerated Bridge Construction techniques.
06/06-10/18	**S.P. No.: H.003886.5, I-49 & I-220 Interchange - Shreveport, Caddo Parish, LA (DOTD) –** Principal-in-charge/Project Manager on this new, multi-lane divided roadway, 4-level interchange project. Project was completed on an accelerated schedule and involved his management of five design teams to complete the work. Reviewed 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 using LA Specs for Roads and Bridges, LA DOTD BDEM, and AASHTO MBE. The project consisted of five new bridges and two bridge widenings.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**David DeLeeuw, P.E.**	Years of experience with this employer	10
Title	Senior Project Manager	Years of experience with other 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 / 3-31-2024	
Year registered	2013	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		QA/QC Task Manager	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience 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 **steel girder**, **railcar**, COSLAB and COPCSS bridges. He ensured that deliverables conformed to DOTD standards, requirements and TRC's Project Quality Control Plan. The project was **completed on-time and under budget** at an accelerated schedule.
09/17 – 06/18	**Office of State Aid and Construction. Bridge Inspection and Off-system Load Rating Contract –** Project Manager during the completion of **160 off-system bridge** routine bridge inspections and load ratings (concrete and timber superstructures and substructure) in accordance with the National Bridge Inspection Standards (NBIS) and AASHTO MBE. He **provided QA on all project deliverables**, inspection reports and load rating reports. Project was completed on an accelerated schedule. He ensured the project was **delivered on schedule and under budget**.
04/16 – 03/20	**Contract No. 4400004920 (H.009859.5), Complex Load Rating and Inspection, Statewide, LA (DOTD) –** Project **QC/QA Manager** for the **load rating inspections** of complex bridges to include **trusses and movable bridges**: 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**), and LA 319 Intracoastal Canal Bridge (**bascule**). He ensured that deliverables conformed to DOTD standards, requirements and TRC's Project Quality Control Plan.
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 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 while the 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.
06/13 – 07/16	**H.003886.5, I-49 North – Segment K (I-220 to MLK Drive), Caddo Parish, LA (DOTD)** - **Lead QA Officer** for all bridge design work, preparation of bridge plans, and specifications 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, the I-49/I-220 interchange bridges, specifically the ramps EN, SE, and WN, under an accelerated project schedule. The design was in accordance with the AASHTO LRFD Bridge Design Specifications (5th Edition) and LA DOTD standards.
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 was $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 a 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 Pier W21. Group D was a seismic retrofit of an existing welded plate girder relief bridge consisting of 7 spans. Construction cost was $46.5 million.
01/07 – 12/09	**East Metro Corridor Commission, East Metro Corridor, Rankin County, MS -** Managed all phases of work by other consultants for a new 3-mile, divided limited-access highway linking Interstate 20 to SR 25 in Rankin County. He also **managed the QA services** that were conducted for all bridge and roadway design work. The new route also provided economic development opportunities for the Jackson International Airport. Phases of work that he managed on behalf of the Commission (consisting of 3 mayors and the airport authority) included environmental clearance, design, right-of-way acquisition, and construction management and inspection.
01/97 – 12/98	**I-55 Widening - DeSoto County, MS (MDOT)** - 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.
01/97 – 12/97	**Single Point Urban Interchange: I-55/S.R. 463, Madison, MS (MDOT) -** Managed the design for a reconstruction of the I-55 and S.R. 463 interchange. He was responsible for the complete roadway design, bridge type selection and design, retaining wall design, and **Quality Assurance of all design on the project**. A traditional diamond interchange was replaced with a new underpass single-point urban interchange (SPUI).
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 of 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.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Michael Paul, P.E.**	Years of experience with this employer	14
Title	Project Manager/Senior Bridge Engineer	Years of experience with other 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 – Fracture Critical Inspection Techniques, 2015 FHWA/NHI #130092 - Fundamentals of LRFR for Bridge Superstructures, 2015
Contract role(s) / brief description of responsibilities			**MPR #3** – Load 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 years of experience specified in the applicable MPR(s).
06/21 – 12/22	**S.P. No. 44-17264; H.011965.5, LA 47 over IWGO Rehabilitation, New Orleans, LA (DOTD) -** Project Manager for structural rehabilitation, cleaning and painting of this historic bridge (1,248 feet of steel main spans with cantilevered arms and tied-arch). Led and performed the development of final plans for the repair and rehabilitation of all substructure and superstructure elements using LA Specs for Roads and Bridges, LA DOTD BDEM, and AASHTO MBE. Led the bridge inspection in advance of final design. Directed sub-consultants for 3D surveying, truss design, traffic management and control plans. Project manager for the ongoing Construction Related Services for contractor RFIs, submittals, and construction matters.
03/20 – 12/22	**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. Includes modifications to the access management at the LA 1 ramp bridges tie-in at the I-10 ramps at LA 415 using LA Specs for Roads and Bridges, LA DOTD BDEM, and AASHTO MBE.
05/16 – 02/18	**Contract No. 4400004920 (H.009859.5), Complex Load Rating and Inspection, Statewide, LA (DOTD)** – Engineer responsible for load rating for the Bayou Teche **swing bridge.** Performed **AASHTOWare BrR model and load rating** of the floorbeams and stringers. He used Midas and hand calculations to analyze the main girders, main girder splices, pivot girder, bent caps and metal grid decking.
06/15 – 12/22	**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 steel plate I-girder main span continuous unit over the Union Pacific Railroad and BT-72 prestressed concrete girder approach spans. Prepared the **load rating report** and checked the load rating of pile bents. 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, he led the coordination effort with the US Army Corps of Engineers to develop the 408 permit. Project manager for the construction related services (RFIs, submittals, etc.) during construction.
11/14 – 12/14	**Department of Energy Bridge Inspections and Load Ratings, Bayou Choctaw, Plaquemine, LA** – Project Engineer conducting bridge **load rating** using the **AASHTO Manual for Bridge Evaluation with LRFR methodology**. The bridge crosses the East-West Canal and is an 84' single span prestressed concrete girder superstructure consisting of a three girder cross section.
08/12 – 06/13	**S.P. No.: H.002562, Bayou La Loutre Bridge Rehabilitation, St. Bernard Parish, LA (DOTD) –** Bridge engineer for design and conceptual development of the fender and pier protection system for this **vertical lift bridge**.
06/11 - 06/12	**S.P. No. 700-24-0031, US 190 over Mississippi River, Bridge Rehabilitation, Baton Rouge, LA (DOTD) –** Bridge Inspector for a special inspection of this 12,200-foot-long bridge with a five-span **cantilever steel truss**. Mr. Paul led the truss inspection. The inspection involved the use of special access equipment such as manlifts and climbing. Mr. Paul reviewed existing plans and drawings, inspected and assessed deteriorated structures, and developed repair locations, repair schemes and details.

09/10 - 04/11	**West Virginia Division of Highways, CR 13 Kanawha Falls Steel Truss Load Rating & Rehabilitation** - Bridge engineer for the load rating and rehabilitation study of this historic steel truss bridge. Conducted **load rating calculations** and QC checks of the rating calculations. The bridge superstructure consists of three simple span trusses (260'-400'-260') and one simple span plate girder.
12/10 – 12/22	**S.P. No.: H.001234.5, LA 1 Port Allen Canal Bridge Replacement, Port Allen, LA (DOTD) - Rehabilitation Study** - Lead engineer for a **Stage 0 Feasibility Study** involving three different bridge rehabilitation options and one bridge replacement option for existing twin bridges that carry LA 1 over the Intracoastal Waterway. He developed new roadway alignment options, construction phasing, and traffic control schematics, and investigated rehabilitation options for the existing bridge and preliminary design of a new bridge option. Rehabilitation and replacement options investigated and proposed the use of Accelerated Bridge Construction techniques. **Preliminary & Final Design** – Project Manager for the development of Stage 3 preliminary (bridge and roadway) and final design (roadway only) plans which included roadway, traffic control, maintenance of traffic, ITS, traffic signal, MSE wall, highway lighting and bridge plans. Coordinated with UPRR, US Army Corps of Engineers, USCG, and Port of Baton Rouge. A traffic analysis (Level 3 TMP) was conducted. The project included a 1.5-mile "superstreet" portion with signalized and unsignalized J-turns. Project manager for the construction related services (RFIs, submittals, etc.) during construction.
2010 – 2011	**S.P. No.: 008-02-0034 & 008-003-0060, Left Turn Lanes at US-190 Bridge Replacement, Pointe Coupee Parish, LA (DOTD)** - Structural engineer for this 285', 3-span continuous prestressed concrete girder bridge on prestressed concrete pile trestles. Mr. Paul developed a phased construction schematic for the roadway to remain open to traffic during demolition of the existing bridge and construction of the new bridge, designed the superstructure and substructure members, and prepared the construction documents.
2010	**S.P. No.: H.000101, Union Pacific R/R Overpass near Greenwood, Caddo Parish, LA (DOTD) - S**tructural engineer for the design of a 3-span continuous steel girder bridge on highly skewed supports. Mr. Paul served as designer and QC checker for design of the steel girders, diaphragms and bearing pads, and assisted in preparing the construction documents.
07/06 - 11/15	**S.P. No.: H.003495 & H.011111, I-49 & I-220 Interchange, Caddo Parish, LA (DOTD) -** Project Manager, Design Coordinator and Baton Rouge Team Leader on this new, multi-lane divided roadway, 4-level interchange project. All design was performed in accordance with AASHTO LRFD. Final design was on an accelerated schedule and involved 5 design teams to complete the work. He served as conceptual and structural designer for a dual design of the **post-tensioned segmental concrete** and **steel box girder superstructures,** and was involved with the development of Project Design Criteria, development and implementation of a Project QC Management Plan, and coordination with the team's architect to develop aesthetic bridge design schemes. The Project consisted of five new bridges (Ramp EN 3,070', Ramp SE 3,300', Ramp WN 700', I-49 NB and SB over MLK Dr. 462' each) and two bridge widenings (I-220 over Russell Rd. 322.5' each). Ramp EN, SE and WN bridges consisted of a dual design with **precast segmental post-tensioned concrete and steel trapezoidal box girder superstructure alternates**. The I-49 over MLK Drive bridges consisted of BT-72 prestressed concrete girders and cast-in-place concrete substructures. The I-220 over Russell Rd. bridges consist of steel plate girders and cast-in-place concrete substructures. Bridge engineer responsible for developing and performing the **AASHTOWare BrR load rating** for the Ramp EN CIP concrete post-tensioned box girder at Span 1

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Xianzhi ("Sage") Liu, P.E.**	Years of experience with this employer	12
Title	Structural Engineer	Years of experience with other 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	**MPR #4** - Load Rating Technical 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 years of experience specified in the applicable MPR(s).
08/21 – 02/22	**S.P. No. 44-17264; H.011965.5, LA 47 over IWGO Rehabilitation, New Orleans, LA (DOTD) –** Design engineering for the rehabilitation, cleaning and painting of this historic bridge (1,248 feet of steel main spans with cantilevered arms and tied-arch). Developed final plans to address the repair and rehabilitation of superstructure truss elements using LA Specs for Roads and Bridges, LA DOTD BDEM, and AASHTO MBE. Assisted with a truss inspection in advance of design.
02/21 – 04/21	**Broadmore Bridge Inspection and Special Haul Load Rating, Lake Arthur, LA (Private Client)** - Technical lead responsible for the QC/QA review of load rating for an **off-system concrete slab bridge** used for special hauling vehicles. Work was completed using current **AASHTO BrR**, LA DOTD BDEM and AASHTO MBE.
04/20 – 12/20	**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 complex load rating of steel bridges without any available plans, completed the QC/QA of load rating for superstructure and substructure elements, developed load rating reports, and proposed repair options for bridges with a posting drop. Work was completed using ther current LA DOTD BDEM, **AASHTO BrR** and the AASHTO MBE.
01/19 – 05/20	**Walter O. Bigby Carriageway, Bossier City, LA –** Lead structural engineer for superstructure design of the main steel girder spans. He performed design modeling, analysis and plan development for the main continuous steel girder spans with a maximum span length of 300'. He used several software packages, including LUSAS and MDX, for structural analyses and load ratings, along with current LA DOTD BDEM, **AASHTO BrR** and the AASHTO MBE.
05/17 - 12/17	**S.P. No. 003905 – I-49 North (I-220 to MLK Drive), Caddo Parish, LA (DOTD) –** Lead structural engineer performing as-built load ratings and reports for segmental superstructure bridges. He used current LA DOTD BDEM, **AASHTO BrR** and AASHTO MBE.
04/16 – 03/20	**Contract No.: 4400004920 (H.009859.5), Complex Load Rating, Statewide, LA (DOTD) –** Lead load rating engineer for superstructure and substructure **load rating for multiple complex bridges**. Included the LA1 **truss bridge** over Atchafalaya river, LA47 IWGO **tied arch truss bridge**, US 90B Riverbound Expressway **deck truss bridge** and several 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**), and Bridge over Bayou Teche at Adeline (**swing**). He performed the assessments and load ratings, and developed load rating reports, which included his leading the efforts to analyze several bridges with unique configurations and high complexities. He used several structural analysis software packages, including LUSAS, MIDAS Civil and **AASHTOWare BrR** for structural analysis, validations and load ratings which were performed in accordance with the current LA DOTD BDEM, AASHTO BrR and the AASHTO MBE.
10/16 – 11/17	**3rd Street Movable Bridge Load Rating and Rehabilitation, San Francisco, CA (City of San Francisco) –** Lead engineer 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 for traffic lanes and sidewalks. He performed structural analysis and generated governing load cases for truss member, floor beam, stringer, and gusset plate ratings. The analysis was used to identify deficient structure members for rehabilitation.

10/14 – 12/14	**Department of Energy, Bayou Choctaw Off-system Bridge Inspections, Iberville Parish, LA. –** Load rating engineer for the **load rating analysis**, calculations and rating reports for the **Double-Double Bailey Bridge** (steel truss) using current **AASHTO BrR** and AASHTO MBE. He also performed quality control for the load rating of a concrete girder bridge.
03/11 – 06/12	**District Nine QA/QC Bridge Inspection and Rating, Fayette, Greenbrier and Nicholas Counties, WV (WVDOH) -** Load rating engineer responsible for the **load rating analysis**, review of loading rating results, and development of load rating reports for **off-system bridges** in District Nine, West Virginia. He reviewed bridge load rating results using Bentley software packages. Performed in-depth Finite Element analysis using LUSAS software to determine the structural member force for the required rating vehicles and developed independent detailed spreadsheets to perform load rating calculations and compared with the Bentley LARS rating.
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. He led the **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.
03/14 – 06/14; 07/10 – 11/10	**Kanawha Falls Steel Truss Bridge Rating, Kanawha Falls, WV (WVDOH) –** Bridge engineer for a rehabilitation study for this 985' **steel truss bridge** and 55' **steel plate girder** spans. He performed QC for load rating analysis using STAAD and RISA, including the review of existing inspection reports, and rating calculations for one truss span and one girder span based on the latest Manual for Bridge Evaluation. He 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 a concurrent live load analysis for gusset plate rating of the truss.
08/10 – 05/14	**Phill G. McDonald Bridge of I-64 over Glade Creek, Raleigh County, WV (WVDOH) –** Lead structural engineer 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 led the development of bridge monitoring schemes, deployed sensors, and performed data analysis and interpretation for the purpose of diagnosing and rehabilitating abnormal bridge expansion and racking.
04/10 – 08-10	**West Virginia Division of Highways, Twenty-mile Creek Bridge, Nicholas County, WV (WVDOH) -** Structural Engineer for QA/QC regarding **analysis and load rating** for this unique **truss bridge**. He performed an alternative Finite Element analysis for the superstructure and load rating using LUSAS software, and provided detailed rating reports to compare with standard rating programs.
02/09 – 10/09	**I-35 & US 290 Interchange, Austin, TX** – Design engineer for a review of structural calculations and bridge plans for this **steel box-girder** interchange. Performed DESCUS analysis, box girder analysis and splice analysis, along with QC of the bridge plans.
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.
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 that the current structure met temporary operation requirements.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Nichole Caiazzo, P.E.**	Years of experience with this employer	7
Title	Bridge Engineer	Years of experience with other employer(s)	7
Degree(s) / Years / Specialization		B.S., 2008, Civil Engineering	
Active registration number / state / expiration date		#PE.0041078 / LA / 03/31/2023	
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			**MPR #4** – Load 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 years of experience 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 responsible for the inspection and load rating of 346 off-system bridges (COSLAB, COPCSS). She performed **load rating analysis** using **LRFR** with **AASHTOWare BrR** for the superstructures and substructures (timber and concrete piles). She provided repair recommendations for bridges with 3 ton or closure ratings.
05/19 – 12/21	**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, recent inspection reports and completion of **load capacity ratings** and related tasks for 60 on- and off-system bridges consisting 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. The 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, recent inspection reports and completing **load capacity ratings** and related tasks for 10 on- and off-system bridges consisting 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 a continuous steel beam superstructure on repaired substructure. 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 off-system 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 OSARC 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 and 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 the required load carrying capacity established by OSARC, and updated the load rating analysis and documentation with ongoing superstructure repairs. She provided repair recommendations for bridges with 3 ton or closure ratings.
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.
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). Used 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 deck along the portion of the main span, stringers and floorbeams in the main span, and reinforced concrete bent caps. She used AASHTOWare BrR, CONSYS software and Mathcad hand calculations to load rate the open steel grid deck, floorbeams, stringers, and concrete bent caps. Developed influence lines for existing and new girders and hammerhead bent cap using AASHTOWare BrR software. Load rated bridges included LA 670 over Bayou Teche (**swing bridge**), LA 47 over IWGO (**tied arch, deck truss, steel & concrete girder, concrete slab**), U.S. 90 (Riverbound Exp.) (**deck truss and steel plate girder**, floorbeams, stringers, gusset plates), and I-220 over Russell Road (**steel plate girders**).
06/12 – 12/15	**Virginia Department of Transportation, Limited Services Statewide (VA) Design Term Contract -** Bridge Engineer responsible 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**) and Load Factor Rating (LFR) methods as specified by VDOT Guides and Instructional and Informational Memoranda. The bridge types including 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 responsible for performing the **load ratings of 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	**Denny Dispennette, P.E.**	Years of experience with this employer	5
Title	Civil Engineer	Years of 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	2019	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA/NHI 130055 - Safety Inspection of In-Service Bridges, 2014 FHWA/NHI 130053 - Bridge Inspection Refresher Training, 2021 FHWA/NHI 130078 - Fracture Critical Inspection Techniques for Steel Bridges, 2021 FHWA/NHI 130092 - LRFR for Bridge Superstructures, 2014
Contract role(s) / brief description of responsibilities		**MPR #4** – Inspection Team Leader / Load 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 years of experience specified in the applicable MPR(s).
04/22 – 07/22	**Blennerhassett Island Bridge – Parkersburg, WV (WVDOH) –** Project manager and team leader for the routine inspection of a tied arch bridge over the Kanawha River. He planned the inspection, safety, subcontractor coordination/contracting, and traffic control. He led four teams that included 185 ft. manlift, snooper, and boat access means. He wrote the inspection report, developed element level data, and updated the SI&A coding.
12/21 – 01/22	**Linden Street Bridge over Lackawanna River, Scranton, PA (PennDOT)** – Load rater for the superstructure (steel girder) and substructure **using LRFR.**
12/21	**Contract No. 44-13321; H.09730.5 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 bridge (**truss**). He inspected the deck, steel superstructure (girders, floor beams, stringers, bearings), and steel substructure (bent caps, columns, diagonal bracing, gusset plates) using aerial access equipment. He wrote the inspection report, prepared the defect list and updated the drawings for the defects.
11/20 - 11/20	**General Engineering Services Contract, Franklin County Engineer's Office (FCEO), OH –** Team leader responsible for 17 bridges. Led the field inspection and wrote the inspection reports in AssetWise in accordance with NBIS and ODOT standards.
10/20-02/21	**West Virginia Division of Highways, District 1, RHL Blvd. Bridge - Kanawha County, WV** - Load rater and bridge designer. Updated the steel girder design, cross-frame design, and **load ratings**.
12/19 - 12/20	**Contract No. H.012485.1 Off-system Load Rating, Statewide, LA (DOTD) –** Load rating engineer **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.* He provided repair recommendations for bridges with 3 ton or closure ratings.
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.

04/18 – 12/19	**Contract No. 4400004920 (H.009859.5) Complex Load Rating and Inspection, Statewide, LA (DOTD) –** Load rating engineer for the **load rating and inspection of complex bridges that included complex trusses and movable** (vertical lift, bascule, swing) bridges. 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.* Also performed peer review ratings.
10/18 – 12/18	**I-70 Bridge Rehabilitation – Ohio County, WV (WVDOH) –** Team leader for the rehabilitation bridge inspections of four steel multi-girder bridges carrying I-70 EB and WB. He ensured the completion of thorough condition documentation as well as geometric inventory measurements to provide information for rehabilitation of the structures. He also prepared the rehabilitation plans for the bridges.
11/18 – 12/18	**Kanawha Falls Bridge – Kanawha Falls, WV (WVDOH) –** Team leader for the emergency inspection a 90-year-old, three-span, riveted through truss over the Kanawha River. He led and performed an inspection of the entire floor system to verify condition and to advise if additional emergency repairs were required. He led and performed an inspection of the truss lower chords and stringers while looking for critical findings that might require immediate repair or preclude the bridge from reopening. A hands-on inspection of the lower chords and floor beam to lower chord connections was conducted and he developed and submitted an inspection report.
04/18 – 10/18	**Seabrook Nuclear Power Plant Bridge Replacement - Seabrook, NH** – Load rater and designer for replacement of an existing 3-span, 32-feet-long bridge in a nuclear power plant that spans high voltage transmission lines. The new bridge was a multi-steel girder with an aluminum deck.
10/17 – 02/18	**Office of State Aid and Construction, Bridge Inspection and Off-system Load Rating Contract, Statewide, MS** - Load rating engineer responsible for performing **load rating analyses on timber substructure elements** for **160 off-system 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.
10/12 – 9/17	**West Virginia Division of Highways, Charleston, WV –** Bridge engineer/load rater/bridge inspector employed by WVDOH. His responsibilities included the **load rating of trusses, steel deck girders, steel box beams** and simple span bridges, performance of QA/QC reviews on load ratings, developed the load rating policy for the State's load rating program, reviewing consultant load rating reports, and taught classes on load rating to State bridge engineers. He was the team leader for the following **complex girder and truss bridges**: I-70 bridges in Wheeling, WV; Kanawha Falls Bridge in Kanawha Falls, WV; I-470 over Ohio River, Wheeling, WV; and Hi Carpenter Memorial Bridge over Ohio River, St. Mary's, WV to Newport, OH. Performed routine inspections of bridges throughout the state.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Mark Castay, P.E.**	Years of experience with this employer	6
Title	Bridge Engineer	Years of experience with other 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 LTRC / LADOTD-AASHTOWare Bridge Rating Fundamentals Training, 2017 ATSSA / LADOTD-Traffic Control Supervisor, 2020
Contract role(s) / brief description of responsibilities		**MPR #5** – Load Rating Engineer / Team Leader / Plans & Document Search	

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 years of experience specified in the applicable MPR(s).
11/21 – 12/21	**S.P. No. 44-17264; H.011965.5, LA 47 over IWGO, Bridge Rehabilitation, New Orleans, LA (DOTD) –** Team leader during the performance of a bridge inspection for the rehabilitation design of this **tied arch/deck truss** bridge. He led the superstructure and deck inspections.
02/21	**Contract No. H.013321, Complex Bridge Inspections, Statewide, LA (DOTD) –** Bridge Inspector assigned to inspect the box girders, cable anchors, and towers of the I-310 over Mississippi River bridge (cable stayed bridge).
12/19 – 12/20	**Contract No. 4400004920 (H.012485.1), Complex Off-system Bridge Rating and Evaluation, Statewide, LA (DOTD) –** Bridge Inspector and load rating engineer for the site assessments and **load ratings** of 345 off-system **concrete slab span** (COPCSS, COSLAB) bridges supported on concrete caps and concrete or timber piles. He used **AASHTOWare BrR** and **LRFR** to perform the load ratings. He also provided repair recommendations for bridges with 3 ton or closure ratings.
03/18 – 04/18	**Contract No. 4400010099 (H.009859.5), Complex Off-system Bridge Rating and Evaluation, Statewide, LA (DOTD) –** Bridge Inspector and load rating engineer for the site assessment and **load rating of an off-system truss bridge** over the Tensas River. He led the assessment of the superstructure elements, operated a platform snooper truck and developed the load rating for the bridge using **AASHTOWare BrR.**
09/17 – 02/18	**Mississippi Department of Transportation, State Aid Bridge Inspection and Load Rating IDIQ Master Contract -** Bridge Inspector and load rating engineer for 160 concrete and timber off-system bridges. Performed routine inspections and **load ratings** in accordance with the National Bridge Inspection Standards (NBIS) and AASHTO MBE on selected bridges located statewide. He used **AASHTOWare BrR and LRFR** to perform the load ratings. He also provided repair recommendations for bridges with 3 ton or closure ratings.

04/16 – 06/19	**Contract No. 4400004920 (H.009859.5) On-system Complex Load Rating, Statewide, LA (DOTD) –** Bridge load rating engineer and Inspector responsible for site visits, assessments and **load rating of complex truss and movable bridges** under this retainer contract. For the Bayou Teche bridge (**swing span**) he performed the bridge inspection and documented deficiencies to be used in the load rating analysis. For the LA 27 over ICWW (**vertical lift/truss**) bridge he 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. For LA319 over ICWW (**double leaf bascule**) he performed rating analysis on PCC girder spans and hammerhead bent caps using strut and tie in addition to QC of the remainder of the bridge components. For the LA 654 over Bayou Lafourche (**vertical lift**) he performed QC on the bridge rating calculations and analysis models. For LA657 over Bayou Lafourche (**vertical lift**) he performed rating analysis on the slab spans and main span girders, floor beam and stingers. For the LA 83 Bridge over Patout Bayou (**swing span**) and St. Anne Bridge over Terrebonne Bayou (**swing span**), he performed QC on the bridge rating calculations and analysis models. For LA 47 over IWGO (**tied arch truss**) he 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**. For LA 1 over Atchafalaya (**cantilevered Warren through truss**) he performed the bridge inspection and load ratings for pin and hangers and an analysis for the truss gusset plates in BrR. For the US 90B Riverbound Expressway (riveted plate girder and deck truss) bridge he performed the bridge inspection and documented deficiencies to be used in the load rating analysis. He performed a load rating analysis of the girders, floor beams, stringers, gusset plates and truss members.
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 the Mississippi River, along with the US 90 Danziger Bridge (**vertical lift**). Involved in-depth inspection of the bridge superstructure and substructure, element level conditions/quantities, and composing the final report.
06/15-08/15	**Belaire Bridge Rating, Plaquemines Parish, LA -** Performed the **bridge load rating** for a **precast slab span** bridge replacement from as-built drawings.
10/12-12/12	**Lake Provost Road Bridge Rating, Lafayette Parish, LA –** Performed the **load rating** for a 3-span bridge (**timber**) replacement from as-built drawings.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Dong Wang, Ph.D., S.E., P.E.**	Years of experience with this employer	7
Title	Civil/Structural Engineer	Years of experience with other 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 / 03-31-2023		
Year registered	2018 (PE of LA) 2020 (SE of LA)	Discipline	Civil/Structural Engineering **Other Pertinent Training / Certifications** FHWA-NHI-130092-Fundamentals of LRFR for Bridge Superstructures, 2015 LADOTD AASHTOWare Bridge Rating Fundamentals Training
Contract role(s) / brief description of responsibilities	**MPR #5** - Load 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 years of experience specified in the applicable MPR(s).
11/22 – 12/22	**ODOT PID 116592/TRC 491195 – Statewide Load Rating, OH –** Load rater performing **LRFR** and LFR ratings of steel beam and **plate girder bridges**. Completed the rating of a bridge with multiple doglegs on a curved alignment with variable flares rated in MIDAS and pegged to a BrR line girder.
02/21 – 04/21	**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 off-system bridge for special hauling vehicles. He used **AASHTO BrR** for the concrete superstructure, load rated the timber piles and concrete caps, and issued posting recommendations.
02/20 – 12/20	**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 **LRFR 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 cap and pile elements. He performed the quality control for the load rating calculations and analysis models rated by fellow engineers.
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 and LRFR** for the concrete superstructures, load rated the substructure elements, and issued posting recommendations.
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
07/18 – 10/20	**Walter O. Bigby Carriageway Bridge – Bossier City, LA (City of Bossier City) -** Load rating engineer for the load ratings of steel girder spans and prepared the load rating report. Checked the load rating of one pile bent. As served as a Bridge engineer responsible for designing and detailing the bridge deck overhang, bearing pads, pile bents and abutments. Checked the modeling and design of steel girder spans. Performed stability analysis of steel girder spans. Prepared quantities and design calculation books.
10/17 – 02/18	**Mississippi Department of Transportation, Office of State Aid, Bridge Inspection and Off-system Load Rating Contract -** Load rating engineer for load rating the concrete and timber superstructure elements and substructure elements of off-system bridges in accordance with AASHTO MBE. He used **AASHTOWare BrR** for the analysis of the superstructure elements.

08/17	**Private Industrial Facility Bridge Seabrook, NH –** Load rating engineer responsible for the load rating in conjunction with an In-Depth Routine Inspection to determine deficiencies of the steel superstructure and concrete substructure, the condition of the bridge, and preparation of 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.
06/16 – 08/19	**Contract No. 4400004920 (H.009859.5), Complex Load Rating and Inspection, Statewide, LA (DOTD)** – Load rating engineer responsible for completing the complex load rating of truss and movable bridge superstructure elements of the LA 47 IWGO Bridge (tied arch/deck truss), LA1 over Atchafalaya River Bridge (truss), LA 27 over ICWW Bridge (vertical lift), LA 654 Bayou Lafourche Bridge (vertical lift), LA 83 Patout Bayou Bridge (swing), LA 319 Intracoastal Bridge (bascule), St. Ann Bridge over Bayou Terrebonne (swing) and US 90 Riverbound Expressway Bridge (deck truss/plate girder). 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 load rating**, MIDAS/Civil modeling, and Excel/MathCAD data processing. Wrote portions of the load rating reports.
05/15 – 11/15	**Contract No. 4400002791 (H.003495 & H.011111), I-49 & I-220 Interchange, Caddo Parish, LA (DOTD)** – Load rating 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.
02/15 – 06/15	**Admiral T.J. Lopez Bridge - Kanawha County, WV (WVDOH) -** Load rating engineer responsible for developing and performing the LUSAS modeling and Excel data processing for the truss gusset plate load rating.
09/12 – 05/14	**Civil Engineering Department, Bridge Ratings, Huntsville, AL (University of Alabama) –** Responsible for comparison studies and research between load and resistance factored bridge rating (LRFR), allowable stress bridge rating (ASR), and load factored bridge rating (LFR). Performed bridge rating using different rating methods.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Christopher Hay, P.E.**	Years of experience with this employer	5
Title	Sr. Bridge Engineer	Years of experience with other employer(s)	10
Degree(s) / Years / Specialization		B.S. / 2007 / Civil Engineering	
Active registration number / state / expiration date		#PE.0043025 / LA / 3-31-2023	
Year registered	2018	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA / NHI #130055 - Safety Inspection of In-Service Bridges, 2016 FHWA / NHI #130053 – Bridge Inspection Refresher Training, 2021 FHWA/NHI #130078 – Fracture Critical Inspection Techniques for Steel Bridges, 2014 FHWA / NHI #130092 – LRFR for Bridge Superstructures, 2019
Contract role(s) / brief description of responsibilities		Team Leader / Load 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 years of experience specified in the applicable MPR(s).
11/22-12/22	**ODOT PID 116592/TRC 491195, Statewide Load Rating, OH –** Load rater performing **LRFR and LFR ratings of steel beam and plate girder bridges**. Completed the rating of a bridge with multiple doglegs on a curved alignment with variable flares rated in MIDAS and pegged to a BrR line girder.
08/21	**2020 Cardinal Power Plant Bridge Inspection, Jefferson County, OH –** Project manager and team leader for the in-depth, element inspections of two bridges over multiple railroads on power plant property. The Main Bridge was a two-span prestressed concrete I-Beam bridge on integral abutments behind soil nail walls. Tidd bridge was a seven-span, riveted two-girder bridge that spanned the same railroads and portions of maintenance facilities located on plant property. The element level reports were completed and submitted within 30 days of beginning the inspections.
11/20 – 12/20	**Franklin County Engineer's Office, General Engineering Services Contract, 2020 Inspections, Franklin County, OH –** Project manager and team leader for the routine inspection of 54 off-system structures in three townships, along with the delivery of inspection reports and photos into the new AssetWise program. He led three inspection teams to efficiently complete the NBIS inspections in five field days. Draft reports were completed in AssetWise and submitted for review within two weeks of completing the field work. Final reports were approved within a week of receiving comments.
11/19 – 12/20	**Contract No. H.012485.1 Off-system Load Rating, Statewide, LA (DOTD)** – Bridge inspector responsible for the site assessments for 50 off-system bridges (COPCSS and COSLAB with concrete or timber piles). He documented current conditions and geometric data for the load ratings. Served as the load rating engineer for off-system bridges which included the performance of **load rating analysis of the superstructures and substructures** (timber and concrete piles) using **AASHTOWare BrR**, **LRFR**, and STAAD.
12/18 – 01/19	**West Virginia Department of Highways and Ohio Department of Transportation, I-70 Bridges Design/Rehabilitation Inspections, Ohio County, WV and Belmont County, Ohio –** Inspection team leader for the expedited inspection/evaluation of 7 bridges (steel girders). Responsible for identification and documentation of deficiencies to be included in the rehabilitation of assigned structures.
11/18 – 12/18	**West Virginia Department of Highways, District 9, Kanawha Falls Emergency Inspection, Fayette County, WV -** Kanawha Falls Bridge is a 90-year-old, three-span, riveted through truss over the Kanawha River. Team leader tasked with performing an emergency inspection of the floor beam to lower chord connections for the entire floor system to verify their condition and advise if additional emergency repairs were required. Led an inspection of the truss lower chords and stringers looking for critical findings that might require immediate repairs or preclude the bridge from reopening.
09/18 & 01/19	**Ohio Department of Transportation, District 8, HAM-50-2180N Inspection, Hamilton County, OH -** Team leader for the District 8 bridge inspection task order to include fracture critical element level inspections of **steel truss bridges**, deck arches with **plate girder** approach spans, and substructure elements.

09/18 – 10/18	**Ohio Department of Transportation, District 2, LUC-280 VGCS Inspection, Toledo, OH –** Team leader for the routine and element level inspections of this cable stayed and **concrete segmental box girder bridge** consisting of a series of nine bridges, including ramps, carrying I-280 over the Maumee River. He performed QA/QC checks of the inspection reports.
09/18	**Ohio Department of Transportation, District 8, HAM-50-0376L Inspection, Hamilton County, OH -** Team leader for the District 8 bridge inspection task order to include the fracture critical element level inspections of **steel through truss bridges**.
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 and all lower chords, as well as participated in the review of bridge inspection reports.
09/17 & 12/17	**Ohio Department of Transportation, District 8, WAR-71-1514L/R Inspection, Warren County, OH –** Team leader for the routine and element level inspection of the Post Tensioned, CIP Segmental boxes on the Jeremiah Morrow Bridge and substructure elements.
07/17	**West Virginia Department of Transportation - Division of Highways, 5th Street Bridge, Wood County, WV –** Bridge inspector for the performance of an In-Depth inspection of this 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. The bridge carries WV Route 14, which is a heavily travelled State Route, over the Little Kanawha River and CSX Railroad.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.				
Name	**Craig Jacob, P.E.**		Years of experience with this employer	1	
Title	Bridge Engineer		Years of experience with other employer(s)	22	
Degree(s) / Years / Specialization			B.S. / 1999 / Civil and Environmental Engineering		
Active registration number / state / expiration date			#PE.0068866 / OH / 12-31-23		
Year registered	N/A	Discipline	**Other Pertinent Training / Certifications** FHWA / NHI #130053 - Bridge Inspection Refresher Training, 2022 FHWA / NHI #130055 - Safety Inspection of In-Service Bridges, 2005 FHWA / NHI #130078 – Fracture Critical Inspection Techniques for Steel Bridges, 2017		
Contract role(s) / brief description of responsibilities			Load 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).
11/22 - 12/22	**ODOT PID 116592/TRC 491195 – Statewide Load Rating, OH – Load rater** performing **LRFR** and LFR ratings of steel beam and plate girder bridges. Reviewed completed ratings of bridges.
04/22 – 05/22	**US 50, Blennerhassett Island Bridge, Parkersburg, WV – Bridge Inspector** while using aerial access equipment to inspect the superstructure main span (tied arch) and approach spans (steel girder) components along with the bearings and piers.
09/21	**ODOT, HAM-71-0134 Lytle Tunnel NTIS Inspection – Team leader** for a condition and element level inspection of the liner, headwalls, approach wingwalls, and structural components of facility chambers in the 855-foot long, 3-barrel tunnel of I-71 below Lytle Park in Cincinnati.
04/21 - 05/21	**GDOT, Cable Stay Bridge On-Call Services –** Project engineer during the production of inspection procedure manuals for two cable stay bridges in the Georgia structure inventory. He assisted in authoring the inspection manuals for the Talmadge Memorial Bridge in Savannah and the Sidney Lanier Bridge in Brunswick.
02/21 - 03/21	**Indiana Department of Transportation, I-74 Emergency Bridge Repair - Crawfordsville District -** Engineer of Record for a damage inspection, repair design, and bridge details to correct vehicular impact on the steel beam superstructure of Wesley Station Road over I-74.
01/20 – 12/21	**KYTC, Ohio River Fracture Critical Bridge Inspection Services –** Project manager and **inspection lead** for the **fracture critical inspection** of five long-span Ohio River bridges. The structures in the contract are the historic Roebling Suspension Bridge (Cincinnati, Ohio), the Irvin Cobb Bridge (Paducah, Kentucky), the Carroll Cropper Bridge (Lawrenceburg, Indiana), the Ben Williamson Bridge (12th Street Ashland, Kentucky), and the Simeon Willis Bridge (13th Street Ashland, Kentucky). He led the **load rating evaluation** of the Carroll Cropper Bridge, a **complex tied arch thru truss with suspender cables**, based on as-inspected condition while using **BrR, LRFR and other software**. Also authored the capacity evaluation report. He managed the execution of the project, coordinated with railroads and a traffic control subconsultant, communicated with Cabinet and District engineers, directed inspection staff, and updated the condition and element level records in the state inventory database (BrM). He led or reviewed deliverable reports on noted structural conditions and maintenance recommendations, including documentation of fatigue cracks verified with NDT.
10/19 – 10/20	**South Carolina Department of Transportation, Bridge Load Ratings, SC -** Task Leader and Quality Control Reviewer for a team of analysts during the **load rating of more than 200 bridges** in two South Carolina districts using **AASHTOWare BrR and LRFR method**. Work included the production of load rating documentation as engineer-of-record for the state bridge management system.
04/13; 04/17	**KYTC, Ohio River Fracture Critical Bridge Inspection Services – Team leader** for a **fracture critical inspection** of the 5,340-foot-long Irvin Cobb Bridge (Paducah, Kentucky) which consists of 10 main simple-span thru truss units with a maximum span length of 716 feet across the Ohio River.

06/12; 06/16	**KYTC, Ohio River Fracture Critical Bridge Inspection Services – Team leader** for a **fracture critical inspection** of the 5,746-foot-long Clark Memorial Bridge (Louisville, Kentucky). The bridge consists of two adjacent 3-span continuous thru truss superstructure units with a maximum span length of 820 feet across the Ohio River.
02/12 – 04/12	**Highland County Engineer's Office / County Engineers Association of Ohio (CEAO), Highland County, OH -** Lead Analyst for the **load ratings using Virtis for 26 off-system bridges** which included rolled steel beam, reinforced concrete slab, and prestressed box beam structure types for the Highland County Engineer's Office.
09/11 – 03/12	**Brown County Engineers Office, Truss Load Ratings - Brown County, OH -** Lead inspector and structural analyst for the condition evaluation and documentation of deterioration on 10 **pony truss structures** maintained by the County Engineer's Office. Assessments included field measurements to verify as-built configuration and current deterioration of steel gusset plates. He also processed the condition information to perform a **capacity evaluation of the truss members and gusset plate connections**.
08/11 – 10/11	**Ohio Department of Transportation, District 8, CLI-71-4.26, SR 380 over IR 71 Bridge Rehabilitation, Wilmington OH -** Lead Bridge Inspector, Designer, and **Load Rating Analyst** for a deck replacement on the existing **steel plate girders** of SR 380 over IR 71 with semi-integral and composite conversion.
07/11	**Kentucky Transportation Cabinet, Inspection of Ohio River Bridges - Inspection Team Leader** on the Simon Kenton Memorial Bridge (US 62/68) to assess fracture critical members, measure gusset plate deficiencies, and appraise the entire **suspension bridge** for condition rating and repair/maintenance recommendations.
03/10; 04/11; 02/12	**City of Middletown, Bridge Inspection and Analysis, Middletown, OH -** Lead Engineer for the structural inspection, scour inspection, and **load rating of 20 off-system bridges** and large culverts in the municipality. Reviewer of annual city bridge inspections.
11/07 – 04/08	**Ohio Department of Transportation, District 6, FRA-23-12.11, 4th Street Bridge over the NS Railroad and I-670, Columbus, OH - Inspection Team Leader** and **load rater** for the seven-span bridge which consists of dog-legged steel beams, varying substructure skews, left and right horizontal curves with super-elevation reversal, and cantilevered structural concrete beams on abutment wingwalls.
07/15 - 11/15 07/11 – 11/11 07/09 - 11/09	**ODOT District 8, Steel Pier Cap Inspections – Team leader** for the **fracture critical inspection** of 51 structural steel pier caps on 13 different bridges in Hamilton County. Inspections included an evaluation of fatigue prone details and section loss measurement for capacity evaluation. He also produced condition rating reports for the fracture critical components and performed **load ratings** on several of the bridge pier caps.
08/08	**KYTC, Ohio River Fracture Critical Bridge Inspection Services – Team leader** for a **fracture critical inspection** of the 2,497-foot-long John F. Kennedy Bridge (Louisville, Kentucky) which consists of a 5-span continuous thru truss superstructure with maximum span length of 700 feet across the Ohio River.

Firm employed by	TRC Engineers, Inc.		
Name	**Ronald Pierce, P.E., S.E., CBI**	Years of experience with this firm/employer	1
Title	Senior Bridge Engineer	Years of experience with other firm(s)/employer(s)	33
Degree(s) / Years / Specialization		M.S. / 2007 / Civil/Structural Engineering B.S. / 1986 / Civil/Structural Engineering	
Active registration number / state / expiration date		#6889 / ID / 04-30-2024; #78235 / OR /12-31-2024; #0402054711 / VA / 03-31-2024; #017248 / NV / 12-31-2023; #7053786-2203 / UT / 03-31-2025	
Year registered	ID - 1992; OR - 2006; VA - 2018; NV - 1992; UT - 2008	Discipline	Civil/Structural Engineering (Utah) **Other Pertinent Training / Certifications** FHWA / NHI #130055 - Safety Inspection of In-Service Bridges, 2005 FHWA / NHI #130053 – Bridge Inspection Refresher Course, 2021 FHWA / NHI #130078 – Fracture Critical Bridge Inspection, 2015 LRFR training Oregon DOT (2006) and Arizona DOT
Contract role(s) / brief description of responsibilities			QA/QC 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 years of experience specified in the applicable MPR(s).
11/22 - Present	**ODOT Statewide Load Rating** - Checking **load ratings** for **steel girder bridges** by the LRFR and LFR methods and in accordance with AASHTO (HL93 & HS20) and ODOT guidelines using the **AASHTOWare BrR program**. Duties include reviewing plans, rehabilitation plans, and inspection reports; checking load calculations, distribution factors, and load rating results for LRFR and LFR codes; and checking load rating reports and electronic models.
08/22 - 09/22	**Denver Transit Authority (RTD) Bridge Inspection** - Team Leader for the hands-on routine inspection of 19 transit bridges and culverts, both ballasted and direct fixation. Bridge types included **prestressed box beams**, **I girders**, and **cast-in-place and precast culverts**. Bridge inspections were performed to AREMA and AASHTO MBE standards. Also served as a Bridge Inspection Team Leader performing hands on, routine bridge inspections of A Line Transit Structures consisting of prestressed I girders, box girders bridges, cast-in-place reinforced concrete frame, and cast-in-place and precast box culverts to AREMA and RTD standards. Also mentored a junior engineer on bridge inspection practices.
06/20 - 09/21	**Pikes Peak Cog Railway** – Railroad Bridge Project Manager/Railroad Bridge Engineer/Inspection Team Leader for the inspection of four, steel, two girder fracture critical bridges. These 125-year-old-bridges were built-up rivet sections originally designed for steam engines. There are only two of these railways in the U.S. which are used to traverse steep grades.
06/20 - 09/21	**Bettie Cram Drive Underpass, Denver, CO** - Bridge Inspection Team Leader and **Load Rating Engineer** for a three-span prestressed concrete railroad bridge carrying three standard tracks on a ballasted section. The bridge serves the National Western Center facilities and is comprised of **prestressed multi-beam box girders**. Mr. Pierce managed a team assigned to perform an initial inspection of the bridge with the purpose of evaluating the prestressed girders. Analyzed the conditions of the bridge for its design loading and checked the AREMA Specification for design adherence.
11/11 - 05/12	**Alaska DOT, Anchorage Port Access Bridge Seismic and Load Rating Analysis, Anchorage, AK** - Quality Control/Quality Assurance Manager for **bridge load rating** and field inspection data collection. This bridge is a **2,251-foot, steel multi-girder bridge** with integral steel bent caps and columns. It has 20 spans with pin and hanger assemblies. This project included non-linear seismic analysis and load rating by the Load Factor Design (LFD) and Load and Resistant Factor Design (**LRFD**) methods according to the AASHTO MBE 2008 specifications and Alaska DOT's overload rating guidelines. The field work was used to establish the current in-service condition of the bridge that would be incorporated into the seismic and load rating analysis. He was also the QA/QC manager charged with reviewing the progress of the load rating work.
06/06 - 05/12	**Utah Department of Transportation, Bridge Load Rating Program Development, Statewide** - Project Manager and QC/QA Manager for the establishment of a bridge load rating program for the State of Utah. He managed the evaluation of existing software programs for load rating purposes and compared the state bridge inventory with those software capabilities and made recommendations for software to be used throughout Utah. Managed the overload ratings for a fracture critical riveted steel girder bridge, corrugated metal pipes, and evaluated the overload ratings for a fracture critical riveted

	steel girder bridge and corrugated metal pipes, and evaluated the effects of SPMG (Bridge Movers) on existing structure types which included **prestressed concrete girder, steel plate girder, reinforced concrete tee beam**, and **reinforced concrete slab bridges**; **reinforced concrete box culverts**; and **steel slant leg, steel pony truss, steel girder floor beam**, and a **steel box girder** bridges.
09/11 - 05/12	**Utah Department of Transportation, SR 191 Colorado River Bridge, Moab, UT** - Project manager/EOR for the inventory inspection of a new three-span, cast-in-place segmental box girder bridge using the **LRFD** design method. The inspection followed UDOT's Inspection guidelines (Core Elements) and AASHTO MBE 2008. Two inspection teams were mobilized, one for the interior of the box girder and another for the exterior and top of the bridge. A UBIT was used to reach the outside and substructure elements. He reviewed and sealed the inventory inspection report.
02/10 - 11/10	**Alabama Department of Transportation, Admiral Raphael Semmes Bridge (BIN 8714)** - Project Manager/Quality Control lead for the load rating of a fracture critical riveted two girder bridge. This 1,451-foot-long bridge is comprised of 12 spans with eight approaches consisting of multi-beam steel rolled girders. Its four main spans are comprised of a riveted two girder system with stringers and floor trusses. The structure was load rated using **AASHTOWare Virtis software**. New features were beta tested. Provided independent verification calculations for the new floor truss feature as well as verified other features in the floor truss module. Inspection work was performed to determine the deterioration of floor trusses for the in-service condition load rating model.
03/08 - 10/09	**Utah Department of Transportation, SR 191 Colorado River Bridge Load Rating, Moab, UT** - Project manager responsible for processing the overload crossing of the previous structure and establishing the load rating and overload rating practices for the new segmental box girder bridge using LFR methods and LRFR load rating models. The main girders, floor beams, and stringers were evaluated for this load rating analysis using **AASHTOWare Virtis** with the BRASS Girder engine.
12/08 - 10/09	**Idaho Transportation Department (ITD), Statewide Bridge Load Ratings, Statewide, ID** – Project Manager and QC/QA manager responsible for **load rating 62 bridges**. Bridges included multi-spanned reinforced concrete, tee beam and slabs, prestressed concrete, steel plate girder bridges, and steel trusses. All load ratings were performed in accordance with the AASHTO Manual for Bridge Evaluation (MBE) and assessed by the Load Factor Rating (LFR) Method or Load and Resistance Factor (LRFR) method. The **AASHTOWare (Virtis) BrR** load rating program was used for this project.
03/07 - 10/09	**Alabama Department of Transportation, Truss Bridge Inspections: US 72 over the Elk River and US 22 over the Coosa River, AL** – Project manager and QC/QA manager for the load ratings using **(Virtis) BrR load rating software** following the routine NBIS, fracture critical, and scour inspections of two structures: a 21-span bridge that is 1,582-feet-long carrying two lanes of traffic on eastbound US 72 over the Elk River consisting of a 200-foot-long Pratt through-truss span with 20 steel multi-beam spans, and a 6-span deck truss bridge that is 910-feet-long carrying two lanes of traffic on US 22 over the Coosa River consisting of a 750-foot, 3-span continuous steel deck arch truss with three steel multi-beam spans. He managed the inspection of the gusset plates and the load rating analysis that included assessing the Whitmore distribution of tension and compression loading. This investigation included the strength of bolts, shear, block shear and unsupported edges for nine live loads to include HS20, and eight other Alabama Posting vehicles. This analysis was in conformance to the AASHTO T-18 and FHWA guidelines for gusset plate analysis.
06/08 - 03/09	**Tennessee Department of Transportation, Steel Truss Bridge Load Ratings, Various Locations, TN** – Project Manager and QC/QA Manager for the **load rating of three steel truss bridges** (Old SR 25 bridge over the Cumberland River; SR 375 over German Creek; and SR 67 over Watauga Lake). All load ratings required that models be developed for the project as originally designed and in their "in-service" condition according to AASHTO MCE standards. Managed the load rating of gusset plates in accordance with FHWA guidelines.
02/09 - 10/09	**Illinois DOT McKinley Bridge Load Rating -** QA/QC Manager for the load rating of trusses and approach spans for this 5,733-foot-long bridge with a main span of 1,565 feet consisting of three through trusses with plate girder approach spans consisting of approximately 4,165 feet. The load rating used **AASHTOWare Virtis(BrR)** Evaluated the bridge using the LFD rating method.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Joshua Sadlock, P.E.**	Years of experience with this employer	1
Title	Structural Engineer	Years of experience with other employer(s)	9
Degree(s) / Years / Specialization		B.S. / 2012 / Civil & Environmental Engineering	
Active registration number / state / expiration date		#PE.0046405 / LA / 9-30-2024	
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, 2022
Contract role(s) / brief description of responsibilities		Bridge Inspection Team Leader and Load 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 years of experience specified in the applicable MPR(s).
11/22 - 12/22	**ODOT PID 116592/TRC 491195 – Statewide Load Rating, OH –** Load rater performing **LRFR** and LFR ratings of steel beam and plate girder bridges. Completed the rating of a bridge with multiple doglegs on a curved alignment with variable flares rated in MIDAS and pegged to a BrR line girder.
04/22 - 06/22	**West Virginia Division of Highways, Blennerhassett Island Bridge over the Ohio River, Wood County, WV** - Bridge Inspector for the In-depth Inspection of this network arch bridge that carries U.S. Route 50 over the Ohio River and historic Blennerhassett Island. The longest bridge in West Virginia, the structure has a total length of 4008'-9". Involved in the performance of a hands-on inspection of every element of the structure which included the three-span steel girder Ohio approach, main span tied-arch and WV approaches consisting of an eight-span steel girder units.
04/22	**Cardinal Operating Company, Barge Unloader Bridge Inspections** – Team leader performing in-depth inspections for two access bridges on Cardinal Power Plant property. The Barge Unloader 1 was a 2 girder, single span rolled beam with a steel grid deck. Barge Unloader 2 was a 3-span rolled steel beam bridge with a concrete deck, stub abutments and pile bent piers.
12/21 – 09/22	**Contract No. 44-13321; H.09730.5 Retainer Contract for In-depth Bridge Inspections (On-System), Statewide (DOTD)** – Team leader responsible for routine and element level inspections of the I-10 over Calcasieu River, I-10 over Mississippi River, GNO 1 and 2 over Mississippi **(thru truss)** bridges. He led inspections of the deck, steel superstructure (girders, floor beams, stringers, bearings), and substructure (bent caps, columns, diagonal bracing, gusset plates) components using aerial access equipment and climbing.
12/21 – 01/22	**Linden Street Bridge over Lackawanna River, Scranton, PA (PennDOT)** – Load rater for the superstructure and substructure using **LRFR**.
06/21 – 08/21	**Pennsylvania Department of Transportation (PennDOT District 6-0), 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. 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 routine and interim inspections of the Water Street steel **truss bridge** over the Susquehanna River. Responsible for the preparation of final inspection reports.
07/20 - 08/20	**Burlington-Bristol Bridge Commission, Tacony-Palmyra Bridge Inspection** – Bridge Inspector for the Tacony-Palmyra Bridge over the Delaware River. He inspected the **bascule span and mechanical rooms**, deck and approaches, masonry piers and deck truss members of the New Jersey approach. He also performed a detailed gusset plate inspection to document section loss, prepared sketches for analysis, and prepared and submitted the inspection report.

12/13 – 07/14	**Frederick County, MD – Historic Truss Bridge Load Ratings** – Performed LFD **load ratings** for historic **truss bridges** in Frederick County, MD. 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 the gusset plates on 20 of the bridges.
10/13 – 01/14	**US-15 over Potomac River Bridge Inspection, Inspection Team Member –** Bridge Inspector for 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 inspections for off-system bridges that included pipe and box culverts, as well as single span steel and concrete girder bridges. Included the preparation of inspection reports. Performed load ratings for over 20 pipes and created an Excel spreadsheet to perform the calculations.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Cody Shields, P.E.**	Years of experience with this employer	10
Title	Civil Engineer	Years of experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S. / 2011 / Civil Engineering	
Active registration number / state / expiration date		#PE.0044457 / LA / 9-30-2024	
Year registered	2020	Discipline	Civil Engineering **Other Pertinent Training / Certifications** FHWA / NHI #130056 - Safety Inspection of In-Service Bridges for Professional Engineers, 2019
Contract role(s) / brief description of responsibilities		Bridge Inspector / Load Rater	

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 years of experience specified in the applicable MPR(s).
11/22 - 12/22	**ODOT PID 116592/TRC 491195 – Statewide Load Rating, OH –** Load rater assigned to perform **LRFR** and LFR ratings of steel beam and **plate girder bridges** with multiple doglegs on a curved alignment with variable flares pegged to a BrR line girder.
2/20 - 09/20	**Contract No. H.012485.1 Off-system Load Rating, Statewide, LA (LADOTD) –** Load rater for off-system bridges which included both COSLAB and COPCSS bridges. Reviewed inspection reports and performed analysis on bridge elements using **BrR/LRFR** (Superstructure) and STAAD (Substructure) software.
11/17 - 12/17	**Contract No. H.009730.5 Retainer Contract for Inspection of Complex Bridges, Statewide, LA (LADOTD) –** Bridge inspector for the in-depth inspection of the Judge Perez **vertical lift bridge**. Documented deficiencies observed on the concrete bridge deck, parapets, open-grid metal deck (lift section), abutments, and bents
10/17 - 11/17	**Off-System Timber Bridge Inspections (MDOT) -** Bridge inspector for over 40 bridges in three counties in southwest Mississippi. All bridges were either partially or fully comprised of timber components: piling, pile caps, girders, decking, and railing. Inspections included noting any elements that were deteriorated or damaged, taking detailed photographs of the condition of the bridge and all elements, and documenting everything in a report furnished to the client.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Curtis Wood, Ph.D., P.E.**	Years of experience with this employer	3
Title	Civil/Structural Engineer	Years of experience with other employer(s)	20
Degree(s) / Years / Specialization		Ph.D. / 2018 / Structural Engineering M.S. / 2006 / Structural Engineering B.S. / 2000 / Engineering Mechanics	
Active registration number / state / expiration date		#PE.0046293 / LA / 03-31-2024	
Year registered	2021	Discipline	Civil/Structural Engineering **Other Pertinent Training / Certifications** Bridge Inspection – Level 2 (ODOT) NHI-130056 - Safety Inspection of In-Service Bridges for Professional Engineers
Contract role(s) / brief description of responsibilities			Load Rater

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 years of experience specified in the applicable MPR(s).
11/22-12/22	**ODOT PID 116592, Statewide Load Rating, OH –** Assigned as a Load Rater responsible for performing LRFR and LFR ratings of steel beam and plate girder bridges with multiple doglegs on a curved alignment with variable flares pegged to a BrR line girder.
07/21	**Cardinal Operating Company, Bridge Inspections –** Team leader for the NBIS element level inspection of a 2-span, prestressed I-beam bridge and a 7-span riveted steel bridge.
08/20	**ODOT District 12, CUY-2-14.41 (Main Ave.), Cleveland, OH -** Team leader for the NBIS inspection of this fracture critical bridge.
07/19	**ODOT District 12, CUY-10-15.94 (Lorain Road over Columbus Road), Cleveland, OH -** Team leader for an NBIS inspection of the CUY-10-15.94 bridge in Cleveland.
11/21 – 12/21	**Louisiana DOTD, Contract No. H.013321 - Complex Bridge Inspections, Statewide -** Team leader for the routine and element level inspections of I-10 over the Calcasieu River bridge (6,607-foot-long steel cantilever through truss and deck truss). Led inspections of the deck, superstructure (steel plate girders and rolled girders with pin and hangers), floor system (steel floor beams and stringers), and steel tower bents using an Aspen A-62 snooper. Coordinated with aerial access teams, two other engineering firms' teams, and the traffic control team. Developed element level quantities and condition states.
10/19	**Greater Columbus Convention Center, High-Third Connector Bridge Inspection, Ohio -** Project manager and inspection team leader for the high-third connector bridges, including fracture critical inspections of steel pier caps.
01/14-07/17	**Ohio Department of Transportation, District 7, MOT-75-1044/1078, Montgomery County, OH -** Lead Bridge Engineer for deck replacement and girder hinge removal on two 940' long structures over the Great Miami River. The existing girders included kink points, hinges, and additional girders that were framed in midspan. Both structures were modeled using finite element analysis (FEA) to verify more traditional beam line analysis techniques which allowed the submitted bridge rating files to the owner to be simplified.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Michael Schrepfer**	Years of experience with this employer	16
Title	Inspection Team Leader / Practice Safety Leader	Years of experience with other 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 LA DOTD / LTAP – Inspection of Local Bridges, 2022 LA DOTD Movable Bridge Inspection Workshop, 2012 ATSSA - Traffic Control Supervisor, 2020
Contract role(s) / brief description of responsibilities	Bridge Inspection Team Leader (Site Visits) / Plan and Document Retrieval		

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 years of experience specified in the applicable MPR(s).
03/22 – 04/22	**US 50 over Kanawha River, Parkersburg, WV (WVDOH) –** Team leader for the routine bridge inspection of a tied-arch and girder bridge. He led the internal box girder, superstructure, and substructure inspections. He also supervised safety operations.
11/21 – 1/22	**S.P. No. 44-17264; H.011965.5, LA 47 over IWGO, Bridge Rehabilitation, New Orleans, LA (DOTD) –** Senior team leader responsible for performing the bridge cleaning/washing and inspection for the rehabilitation design of this **tied arch/deck truss bridge**. He led the cleaning operations and subs using a manlift, platform truck, snooper truck, and safety boat. He supervised traffic control and safety operations, and wrote the inspection and cleaning reports. Searched bridge plans and inspection reports from the DOTD Plans and Microfilm Rooms and DOTD AssetWise.
03/16 - 9/22	**Contract Nos. 44-5960 and 44-13321 Complex Bridge Inspections (DOTD) –** Senior team leader for multiple cycle element level, routine, and in-depth inspections of the following complex bridges: US 90 B (GNO 1 & 2), I-10 Mississippi River and I-10 Calcasieu River bridges (**cantilever and deck truss**), I-310 Luling (cable stayed/box girder), US 90 over IHNC (**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**). Led inspection teams and operated equipment that included a bucket truck, manlift, bucket boat, marsh buggy, and snooper. Wrote inspection reports in DOTD AssetWise format, developed element level quantities and condition states, and SI&A data. Searched for bridge plans and inspection reports in the DOTD Plans and Microfilm Rooms, DOTD's AssetWise system, and in person at Bridge Maintenance. Developed project safety plans and schedules for multiple inspection teams. Submitted traffic control plans and monitored traffic control operations.
03/21 – 10/21	**Broadmore Bridge Assessment and Special Haul Load Rating, Lake Arthur, LA (Private Client)** – Team leader responsible for planning and performing the load rating assessment of an off-system concrete slab bridge for special hauling vehicles. He searched bridge plans and inspection reports from the DOTD's AssetWise system and City/Parish Departments of Public Works. Developed the project safety plan, logistics, and inspection schedule for the inspection team. Performed the inspection in accordance with current FHWA BIRM, AASHTO MBE, and AASHTO Manual for Bridge Element Inspection. He wrote the pre- & post-assessment reports with load rating and special haul vehicle movement recommendations.

10/19 – 04/21	**Contract No. H.012485.1 Off-system Load Rating, Statewide, LA (DOTD)** – Senior team leader responsible for the load rating assessment of 426 off-system bridges. He searched bridge plans and inspection reports from the DOTD's Plans and Microfilm Rooms, DOTD's AssetWise system, and in person at DOTD Bridge Maintenance and City/Parish Departments of Public Works. Developed the project safety plan, logistics, and inspection schedules for the inspection teams. He uploaded all bridge load rating reports and supporting documentations to the DOTD's ProjectWise and AssetWise systems. Performed site assessments for bridge superstructures (concrete and steel) and substructures (timber and concrete piles), as well as managed traffic control and safety for inspection teams
02/16 – 12/19	**44-4920 (H.009859.5 Complex Load Rating and Inspection, Statewide, LA (DOTD) –** Senior team leader for the load rating assessments performed for 15 complex truss and movable bridges over major waterways: **steel tied arch truss** bridge LA 47 over IWGO, the **riveted plate girder** and **deck truss** Riverbound Expressway (US 90B), three **vertical lift bridges**, one **bascule bridge**, and four **swing bridges**. 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. Assessments involved his use of special access equipment and boats; confined space entry; and coordination for bridge openings with marine traffic. He directed document searches and the collection of as-built plans, bridge inspection reports, and other historical documents in hard copy and electronic format. He performed QA/QC of all inspection reports.
06/19 – 08/19	**South Carolina Department of Transportation, Bridge Load Rating and Evaluation Services, District 4, SC** – Team leader for the NBIS and load rating assessment of **60 off-system bridges** consisting of concrete superstructures with concrete and timber substructure elements. Assessments were performed using the AASHTO Manual for Bridge Evaluation (MBE).
02/18 – 04/18	**Contract No. 4400010099 (H.009859.5), Complex Off-system Bridges Rating and Evaluation, Statewide, LA (DOTD)** – Senior team leader for the assessment and load rating of an **off-system truss bridge** over the Tensas River. He managed the inspection teams, project safety, subcontractors for traffic control, safety/inspection boat, and aerial access. Wrote the assessment report.
08/17 – 05/18	**Office of State Aid and Construction, Bridge Inspection and Load Rating, IDIQ Master Contract, Statewide, MS -** Senior team leader for the routine NBIS inspection and load rating assessment of **160 timber and concrete off-system bridges**. He searched bridge plans and inspection reports from various state databases; planned inspections, safety and work schedules; and led multiple inspection teams during the inspections. Developed all inspection documents and photographs. He performed QA/QC of the inspections and reports performed by other team leaders, and entered the inspection results, reports, SI&A data, and load rating data into the InspectTech system.
09/14 - 12/14	**Department of Energy Bridge Inspections and Load Ratings, Bayou Choctaw, Plaquemine, LA** – Senior team leader for the in-depth NBIS inspections of a Bailey Bridge (**steel truss**), two concrete beam bridges, and one timber bridge. He planned the logistics, scheduling, and inspection operations. He led the field inspections, inspection report writing, SI&A data, and repair recommendations.
06/17 - 12/17	**ODOT, LUC-280 Veterans Glass City Skyway Bridge over Maumee River, Toledo, Ohio –** Team Leader for the Routine and Element Level inspections of this cable stayed main span and post tensioned concrete box girder approach span bridges. He supervised the concurrent use of four inspection teams, special aerial access equipment, and traffic control. He developed elements, quantities, and condition states for the nine bridges and wrote the InspectTech report with CAD and field drawings. He also managed project safety.
05/17- 06/17 06/15 - 12/15 10/14 – 12/14 10/11 - 12/11	**WVDOH, Statewide, WV –** Team Leader for in-depth inspections of the Admiral T.J. Lopez Bridge over Kanawha River, 5th Street Bridge over Kanawha River (**thru truss**), 35th & 36th Street Bridges over Kanawha River (fracture critical girders) and four ramp bridges. His inspections involved the concurrent use of special access equipment such as snoopers and manlifts. He supervised multiple inspection teams and traffic control. He developed the elements, quantities, SI&A coding and condition states, and wrote the inspection reports in InspectTech for each bridge. Also managed the project safety and traffic control operations.
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 off-system 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.

16. Staff Experience:

Firm employed by	TRC Engineers, Inc.		
Name	**Benjamin Medlin**	Years of experience with this employer	8
Title	Bridge Inspector	Years of experience with other employer(s)	0
Degree(s) / Years / Specialization		N/A	
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, 2017 FHWA / NHI #130053 – Bridge Inspection Refresher Training, 2022
Contract role(s) / brief description of responsibilities		Bridge Inspector	

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 years of experience 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 a routine and element level inspection of the I-10 over Calcasieu River 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. He wrote the inspection report defect list and updated the drawings for the defects.
02/20	**Contract No. H.012485.1 Off-system Load Rating, Statewide, LA (DOTD)** – Bridge inspector responsible for the site assessments of **50 off-system bridges** (COPCSS and COSLAB with concrete or timber piles). He documented current conditions and geometric data for the load ratings.
07/19 – 10/20	**South Carolina Department of Transportation, Bridge Load Rating and Evaluation Services, Statewide, SC** – Bridge inspector for the NBIS and load rating inspections of **70 on-system and off-system bridges** consisting of concrete and steel superstructures with concrete and timber substructure elements and concrete box culverts. Inspections were performed using the AASHTO Manual for Bridge Evaluation (MBE). He documented current conditions, defects/damage, and geometric data for the load ratings.
06/19	**Honbarrier Drive over Rocky Creek Bridge Assessment and Load Rating, Greenville, SC (private client)** – Bridge inspector responsible for the load rating site assessment of this 3-span prestressed concrete channel beam off-system bridge. The bridge had been closed to traffic. The assessment was performed using the AASHTO Manual for Bridge Evaluation (MBE). He document current conditions, defects/damage, and geometric data for the load ratings.

17. Firm Experience:

Firm name	TRC Engineers, Inc.	Past Performance Evaluation Discipline(s)	Bridge
Project name	**426 Off-system Load Ratings, LADOTD Districts 04 and 05**	Firm responsibility (prime or sub?)	Prime
Project number	H.012485.1	Owner's name	Louisiana Department of Transportation and Development
Project location	Various Parishes (16) in Districts 04 and 05	Owner's Project Manager	Ryan Owens, P.E.
Owner's address, phone, email	1201 Capital Access Road, Baton Rouge, LA 70802-4438 | (225) 379-1070 | Ryan.owens@la.gov		
Services commenced by this firm (mm/yy)	11/19	Total consultant contract cost ($1,000's)	$2,789
Services completed by this firm (mm/yy)	01/21	Cost of consultant services provided by this firm ($1,000's)	$2,171

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

Project Relevance:

- Site assessments
- Load ratings
- AASHTOWare BrR, LRFR and FE Modeling
- Use of LA DOTD ProjectWise and AssetWise systems
- Develop repair recommendations

TRC performed assessments and load ratings of 426 off-system bridges in 16 parishes. The objective of this contract was to perform a load rating based on the current conditions of each bridge and report our critical findings based upon field assessments. The assessments and load ratings were performed in accordance with the current AASHTO Manual for Bridge Evaluation (MBE); the current LA DOTD Bridge Design and Evaluation Manual; the current FHWA Bridge Inspector's Reference Manual (BIRM); and the current National Bridge Inspection Standards. The 426 bridges included 193 COPCSS (Concrete Precast Slab Units) structures supported by timber piles, 158 COSLAB (Concrete Slab) structures supported by concrete piles, and 75 other structures ranging from concrete and **steel girder to railroad flatcars** and culverts.

TRC deployed multiple assessment teams and load rating engineers on-site to conduct the assessments and determine changes in current conditions with the previous LA DOTD inspection reports. Significant coordination was required with the various DOTD Districts, Parishes, and local agencies to obtain existing plans, standard plans, and other relevant documents such as previous repairs/rehabilitations. Upon completion of the assessments, load ratings were performed on the superstructure and substructure elements of the bridges using AASHTOWare BrR, Load Resistance Factor Rating (LRFR) and finite element modeling software. The live load ratings included HL-93, SHV, and emergency vehicle loads. Updated load ratings were completed for bridges that were repaired by the owners. The LA DOTD was provided with written load rating reports and supporting calculations and files for each bridge which were uploaded using the LA DOTD's ProjectWise and AssetWise systems.

TRC's assessment teams identified several critical findings during the assessments. DOTD's key personnel were notified of these findings which ensured District and Parish forces were able to effect repairs to prevent closures of these bridges. This project was performed and completed under an accelerated schedule to meet LA DOTD and FHWA requirements with all deliverables submitted ahead of schedule and underbudget.

STAFF TO BE USED IN THIS PROPOSAL: Durk Krone, Xianzhi Liu, Mark Castay, Dong Wang, Michael Schrepfer, Denny Dispennette, David DeLeeuw, Chris Hay, Cody Shields, Brittany Smith, Ben Medlin

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.)

Project Relevance:

- Site assessments
- Load ratings (complex and movable bridges)
- AASHTOWare BrR, LRFR and FE Modeling
- Use of DOTD ProjectWise and AssetWise systems

TRC performed engineering services associated with the completion of complex bridge ratings (on-system trusses and movable bridges) for statewide projects under separate Task Orders. Services being completed under this 5-year contract include: **Plan and Document Retrieval and Review**; **Bridge Site Assessments** 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 LA DOTD Policies and Guidelines for Bridge Rating and Evaluation to include developing the influence lines; HL-93, SHV and EV live loads; **Peer Review Ratings**, other reviews of ratings performed by others; Quality Assurance reviews of all load ratings. The bridges assigned to TRC under the three Task Orders included the following:

- Bridge over Bayou Teche at Adeline (swing)
- LA 47 Gulf Intracoastal Waterway (tied arch/deck truss)
- LA 27 over Intracoastal Waterway Bridge (vert. lift)
- LA 657 over Bayou LaFourche (vert. lift)
- Local Road over Bayou Terrebonne (swing)
- LA 1 Bridge over Atchafalaya River (truss)
- LA 319 Intracoastal Canal Bridge (bascule)
- LA 654 over Bayou LaFourche (vert. lift)
- LA 83 over Patout Bayou (swing)
- US 90 Business (deck truss / plate girder)
- I-220 EB & WB), Ramp EN, SE, and WN (segmental, cast-in-place post-tensioned, bent caps)

TRC performed QA of load ratings for our sub-consultants: Charenton Bridge, Jackson Street Bridge, West Middle Pearl River Bridge, and LA 2 Millers Bluff.

STAFF TO BE USED IN THIS PROPOSAL: Durk Krone, Xianzhi Liu, Michael Paul, Mark Castay, Dong Wang, Michael Schrepfer, Nichole Caiazzo

17. Firm Experience:

Firm name	TRC Engineers, Inc.	Past Performance Evaluation Discipline(s)	Bridge
Project name	**Off-system Complex Load Rating**	Firm responsibility (prime or sub?)	Sub
Project number	4400010099	Owner's name	Louisiana Department of Transportation and Development
Project location	Caddo Parish, LA	Owner's Project Manager	Russell Coco, Jr., P.E.
Owner's address, phone, email	9108 Interline Ave., Baton Rouge, LA 70809 | (225) 927-9321 | Email: jcoco@forteandtablada.com (Prime)		
Services commenced by this firm (mm/yy)	03/18	Total consultant contract cost ($1,000's)	$202
Services completed by this firm (mm/yy)	03/19	Cost of consultant services provided by this firm ($1,000's)	$177

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

Project Relevance:

- Site Assessment
- Use of AASHTOWare BrR software.
- Development of as-built CAD conformed drawings.
- QA/QC Peer Review of load ratings performed by Prime.

Bear Lake Road West over Tensas River is an off-system bridge that consists of a three-span pony truss with a concrete slab approach span at each end. No information was available from LA DOTD or the Parish regarding the construction date, design criteria, design vehicle, or as-built plans. This bridge was added to the National Register for Historic Bridges under the Design/Engineering criteria. Due to the 5-ton load posting, TRC used a Barin F450 platform truck to access and inspect the underside of the deck and floor system of the truss spans and an inspection boat to access the substructure element which included steel H-piles.

One of the tasks associated with this load rating effort was to identify and measure all structural details and develop the as-built plans for the bridge. TRC developed as-built CAD Conformed drawings from the detailed measurements taken during the load rating inspection. TRC also used AASHTOWare Bridge Rating (BrR) for load rating all truss members, truss gusset plates, truss span floorbeams and stringers, and concrete approach spans. TRC then used Mathcad to load rate truss chord splices as these components cannot be accurately analyzed in BrR.

TRC was tasked directly by LA DOTD to perform QA/QC of the Prime's load ratings.

KEY STAFF TO BE USED IN THIS PROPOSAL: Durk Krone, Michael Paul, Xianzhi Liu, Mark Castay, Michael Schrepfer

17. Firm Experience:

Firm name	TRC Engineers, Inc.	Past Performance Evaluation Discipline(s)	Bridge
Project name	**Local Off-System Bridge Inspection and Rating**	Firm responsibility (prime or sub?)	Prime
Project number	BR-NBIS (90)	Owner's name	Mississippi Office of State Aid Road Construction
Project location	Lincoln, Pike and Amite Counties, MS	Owner's Project Manager	Harry Lee James
Owner's address, phone, email	412 Woodrow Wilson, Jackson, MS 39216 | (601) 359-7150; mail@osarc.ms.gov		
Services commenced by this firm (mm/yy)	08/17	Total consultant contract cost ($1,000's)	$1,190
Services completed by this firm (mm/yy)	06/18	Cost of consultant services provided by this firm ($1,000's)	$962

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

Project Relevance:

- Bridge inspections
- Use of AASHTOWare BrR software.
- Development of maintenance and repair recommendations.

TRC conducted an NBIS inspection and associated **load rating of 126 timber and concrete bridges** in southern Mississippi. This inspection and load rating effort was undertaken on an accelerated schedule to be completed by January 2018. The objective of the work was to determine the need for, and extent of, structural maintenance and repair; develop load rating analyses/calculations using the NBIS/AASHTO Manual for Bridge Evaluation of bridges with respect to bridges containing decayed or deteriorated components (including, but not limited to timber, steel and concrete components); develop maintenance and repair recommendations; provide structural design services for maintenance and repair of bridges; provide research of unknown bridge components to determine properties for analysis; and provide other special bridge related services. All of the inspections and load ratings were completed ahead of the scheduled deadline and under budget.

TRC deployed multiple inspection teams, including load rating engineers on-site to conduct the inspections. TRC used multiple timber non-destructive evaluation methods to determine the extent of decay on the stringers, caps, and piles. The inspection reports were written and submitted in InspectTech software.

TRC used multiple offices to complete the load ratings for state legal loads and EV loads in AASHTOWare BrR software and other approved load rating methods. After the Counties repaired or replaced the deficient bridges, TRC then performed QC inspections and load ratings of these bridges.

STAFF TO BE USED IN THIS PROPOSAL: Durk Krone, Michael Schrepfer, Denny Dispennette, Mark Castay, Nichole Caiazzo, David DeLeeuw, Xianzhi Liu, Dong Wang, Cody Shields

17. Firm Experience:

Firm name	TRC Engineers, Inc.		Past Performance Evaluation Discipline(s)	Bridge	
Project name	**On-Call Bridge Load Rating and Evaluation Services**		Firm responsibility (prime or sub?)	Sub	
Project number	N/A	Owner's name	South Carolina Dept. of Transportation (c/o KCI Technologies)		
Project location	Statewide, South Carolina		Owner's Project Manager	Jared C. Medlin, PE (KCI)	
Owner's address, phone, email	3014 Southcross Blvd., Rock Hill, SC 29730 | (803) 980-6025 | jared.medlin@kci.com (Prime)				
Services commenced by this firm (mm/yy)	06/19		Total consultant contract cost ($1,000's)	$302	
Services completed by this firm (mm/yy)	06/21		Cost of consultant services provided by this firm ($1,000's)	$302	

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

Project Relevance:

- Site assessments
- Load ratings
- Use of AASHTOWare BrR software
- QA/QC of load ratings

TRC served as a subconsultant under a Master Services Contract with the South Carolina Department of Transportation (SCDOT) for inspection and load rating of 70 on-system and off-system bridges consisting of steel plate girders, reinforced concrete precast panels, cast-in-place flat slabs, prestressed cored slabs, reinforced concrete flat slabs,prestressed concrete multi-beams, concrete tee beams, steel multi-beams, and reinforced concrete culverts. As-Built plans, recent inspection reports, and site assessments were used to perform the load ratings.

Superstructure load ratings were 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. Deliverables included site assessment forms, SI&A data correction forms, bridge diagrams, load rating calculations, AASHTOWare BrR models and load rating summary forms. Reinforced concrete and timber substructures were also load rated using hand calculations in Excel when in poor conditions as noted from the site assessments.

The work was performed ahead of schedule on within budget under an expedited schedule using SCDOT's newly released Load Rating Guidance Document. TRC was also tasked with performing Quality Assurance for the load ratings performed by the Prime Consultant.

KEY STAFF TO BE USED IN THIS PROPOSAL: Nichole Caiazzo, Denny Dispennette, Ben Medlin, Michael Schrepfer, Dong Wang

18. Approach and Methodology:

The Louisiana Department of Transportation and Development (DOTD) intends to retain one consultant to perform the engineering services required for the evaluation, analyses, and load rating of various on-system and/or off-system bridges. These bridges may include concrete slab, steel plate girder, through truss, railroad flatcar, and movable (bascule and swing). The load ratings will be in accordance with the current AASHTO Manual for Bridge Evaluation (MBE), DOTD Bridge Design Manual (BDMs), and DOTD Bridge Design Technical Memoranda (BDTMs). For the majority of the bridges, load ratings will be performed using the current AASHTOWare BrDR software. Where complex structural systems are in place or a more refined analysis is warranted, alternative analysis methods will be performed to determine the load ratings similar to what is describe below under Task 3

As demonstrated in Sections 16 and 17 of this document, the TRC team has performed hundreds of Louisiana on-system and off-system bridge inspections and assessments for load rating purposes which has allowed our proposed load rating engineers to become well-acquainted with DOTD requirements in the BDEM, Bridge Inspection Manual, and AASHTO MBE. As a result of our experience in Louisiana and many other states, our team offers a superior understanding of the concrete, steel, and timber deficiencies typically encountered in simple and complex bridges which would result in achievement of the most efficient and cost-effective ratings. Part of a bridge owner's (DOTD or local agency) vision is to remove a load posting when applicable, extend a bridge's service life, and ultimately ensure the safety of the public. TRC supports ensures that vision through the preparation and development of accurate load ratings and has the talent and experience to provide **effective** and **economical** repair recommendations.

APPROACH TO THE PROJECT

TRC has carefully assembled a quality team for this contract that possesses all the needed resources and specialized technical expertise to proficiently address the required scope of services associated with the load rating of identified bridges. Members of our team have worked together on previous load rating projects for the LA DOTD, MDOT, SCDOT, ODOT and WVDOH, thus allowing us to offer an excellent working synergy to the LA DOTD that will heighten our efficiency and overall performance. Responsibilities of our team will include the following:

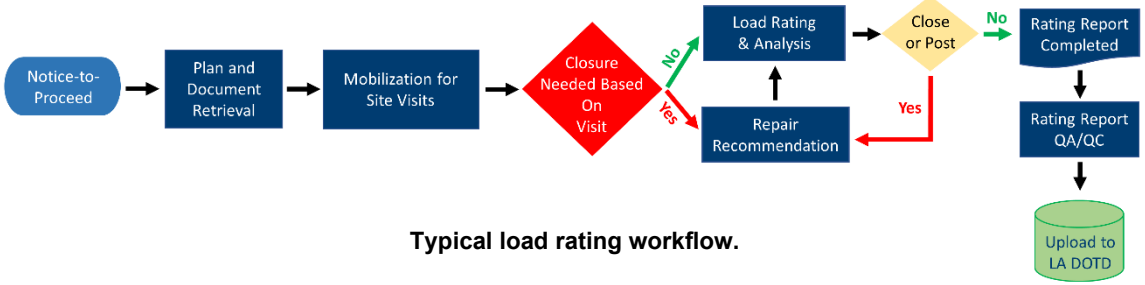
- Project Management and QA/QC
- Task 1 - Plan and Document Retrieval and Review
- Task 2 - Site Visits Where Deemed Appropriate
- Task 3 - Analysis and Load Rating Modeling & Analysis.

Many of our load raters are not only licensed Louisiana Professional Engineers but most are also certified bridge inspectors and will be present during the site visits as required by LA DOTD.

To deliver each Task Order (TO), our project team will be divided into sub-teams to focus on specific components of each assignment such as plan and document retrieval, site visits (as required), load rating/analysis, Quality Assurance/Quality Control and, if required by the LA DOTD, repair recommendations for closed bridges. Our entire team will meet regularly to ensure proper communication and coordination between the sub-teams, measure the progress of work products, and ensure that QA/QC procedures are being followed.

Guiding our approach will be the identification of specific areas of deterioration and addressing any structural deficiencies in an effort to extend a structure's service life through the development of recommendations for repairs and/or strengthening to eliminate existing load postings where practical. We understand the economic implications to local businesses, industry, the agricultural community, and the public that closed or low postings create on vehicular routes. Our staff are adept at proposing alternate load rating methods to assess complex/uncommon framing systems as well as propose repair options to address major deficiencies and accommodate preventative maintenance. Individual load ratings will include

a complete evaluation of the primary superstructure and substructure elements, as well as additional items that affect the dead and live loads (state legal loads, special haul vehicles, and emergency vehicles) of each bridge. Should there be a need to improve the load rating or lower postings of selected bridges based on the above analysis and rating, we will provide the LA DOTD with recommendations for strengthening and/or repair that Local Agencies can employ to keep a bridge open to traffic. TRC's local load rating engineers and bridge inspection team leaders are also prepared to respond to emergency load rating needs in the event of vehicular impact damage, natural disasters or substantial storm events and provide critical findings during a scheduled routine or special inspection. If a bridge is recommended for closure, TRC will provide recommendations as part of the load rating reports (where appropriate) for immediate repair(s) to keep the bridge open to traffic.



Typical load rating workflow.

WORK METHODOLOGY

TRC's methodology will begin with the development of a scope of work proposal and schedule for each bridge that will include all pertinent services listed under Tasks 1, 2 and 3 for each issued task order. Upon approval by DOTD, the work will be executed in a timely manner to completion which is consistent with the approved schedule.

TASK 1. Plan and Document Retrieval and Review: TRC's load rating engineers and team leaders are well-acquainted with the various methods for obtaining the necessary documents for a bridge. Typical locations that serve as a repository for such documents and have been interfaced with on past similar assignments include:

- LA DOTD Bridge Maintenance
- LA DOTD Plans Room
- LA DOTD AssetWise
- LA DOTD ProjectWise
- LA DOTD District headquarters
- Municipal/parish offices
- Fellow engineering firms

Our engineers and team leaders have visited and obtained required documents from each of these sources for various inspection, design, and load rating projects. Upon completion of the retrieval effort, all accumulated inspection reports, load rating reports, as-built plans and local bridge knowledge will be reviewed and considered to identify unique bridge issues and conditions that will require a detailed site assessment in order to develop the most efficient and cost-effective load ratings. Notably, our local Baton Rouge team members have access to DOTD's ProjectWise and AssetWise sites which makes it easier to access the required documents and securely exchange files with the LA DOTD's PM instead of via email or a dispatch rider.

TASK 2. Site Visits: After reviewing all available documents and related bridge information for each structure, the TRC team will develop a short list of bridges that require site visits to complete the needed load ratings. Potential reasons for conducting site assessments are the lack of as-built plans, recent repairs, or the severe deterioration of key bridge members. After approval by the LA DOTD's PM, TRC will coordinate these visits with the District Bridge Engineer and bridge owners (local public agencies) as needed. The need for special access equipment, rope access and maintenance of traffic is not expected during these site visits but is readily available using our internal staffing resources and existing relationships with local vendors. These visits will focus on the main bridge members to be load rated, previously documented areas of deterioration, and field measurements needed to complete the load ratings. Site visit documentation will be incorporated into the load rating report along with appropriate photographs and detailed sketches that will be uploaded to the AssetWise database.

TASK 3. Analysis and Load Rating Modeling & Analysis: A complete structural analysis and load rating calculations will be performed for all superstructure and substructure structural components as required by the current AASHTO MBE and LADOTD BDEM to determine their respective inventory, operation, and Louisiana's legal and emergency vehicle load ratings. Load rating schedules will be established at the project's outset that incorporate adequate time periods for TRC's performance of QA/QC reviews of calculations and reports, and ensure that resulting comments are addressed prior to delivery to the DOTD.

For each bridge, TRC will review the existing load rating, if available, and assess its potential for refinement to achieve more accurate results. This may include evaluating the assumptions made for the previous rating, current conditions of the bridge, material properties, and the previous analysis method that was used. After evaluation, we will explore alternative methods to update the existing load rating or perform the rating using a more refined method to prevent the need for a bridge closure. TRC will also be able to evaluate and identify critical repair items after performing the load rating and propose economical repair concepts to keep the bridge open or reduce posting restrictions in many cases.

For cases when AASHTOWare BrR gives abnormal load rating results, TRC has demonstrated proficiency with the checking of intermediate results and validating all inputs, analyses and calculations to assure they were performed correctly. As we have done on other LA DOTD load rating projects, we will engage the AASHTOWare BrR technical support team in the event of a possible software glitch or bugs in order to work out alternative ways to correctly perform a load rating. For structural systems/elements that AASHTOWare BrR cannot load rate accurately or results in an overly conservative result, TRC will perform the refined Finite Element Method analysis to accurately model the structural system, analyze dead load and live load effects, and further perform the load ratings outside of AASHTOWare BrR. For bridge members with localized section loss that become critical for load rating, TRC may perform an in-depth analysis, using DOTD approved software, of the member capacity (if deemed necessary) to accurately account for the effects of section loss.

TRC brings extensive experience to this contract from **previous bridge load rating projects across Louisiana and the U.S.** to address simple off-system to complex structural configurations, including non-typical framing plans, non-typical boundary conditions, non-typical load paths, strut-and-tie models, pin-and-hanger details, girder splice details, metal grid decking, timber piles, and movable bridge members. In cases where any of these non-typical details or configurations are present in a bridge, TRC can effectively address the load rating using alternative approaches such as hand calculations outside BrR, as well as FE analysis for more refined capacity or load effects calculations. For example, when use of the AASHTO LRFD and LRFR codes have resulted in a bridge closure, employing the AISC Steel Construction Manual lateral-torsional buckling modification factor Cb instead of the AASHTO gradient modifier Cb resulted in the achievement of a much higher capacity than the AASHTO LRFR method. We also have employed permissible alternative methods such as using as-built plans of comparable bridges or applicable standard plans on local off-system bridges with no as-built plans nor known material properties to perform an acceptable load rating.

Under ideal circumstances, a bridge posting can be removed by incorporating a refined analysis or material sampling into the load rating to gain improved and more realistic results. **TRC proved this end result for unique and aging off-system bridges** during its last bridge load rating contract for the LA DOTD which proved financially beneficial to local bridge owners and the state.

Load Rating QA/QC - TRC will perform checks of the load ratings by either developing an independent set of calculations or performing a review of the assumptions and calculations. What is critical to the development of an accurate load rating is the assignment of technical assumptions, accurate identification of deteriorated/damaged members, and an analysis of boundary conditions assumed at the beginning of the process. Our staff excels at identifying and correcting divergences during our reviews. This proved beneficial to DOTD during a previous IDIQ for off-system load ratings after DOTD had TRC perform peer QA/QC reviews for the prime consultant's load ratings.

Deliverable: The deliverables associated with the load rating scope of services will be uploaded to the LA DOTD's AssetWise and ProjectWise systems and consist of an electronic copy (pdf format) of all retrieved information used for the load rating, the load rating report, current bridge condition, photographs, sketches, and site visit forms that identify all deteriorated or rehabilitated structural members. The reports will include influence lines of pile bent caps and other structural members as needed, copies of all software model files used for load rating (such as AASHTOWare BrR, BrDR, MIDAS Civil, STAAD and LUSAS models), a listing of all issues and recommendations to improve the existing ratings or keep the bridges open, and calculation files in an editable format for use by the LA DOTD. If a closure or low posting (3 tons or less) is required, TRC staff will develop and include

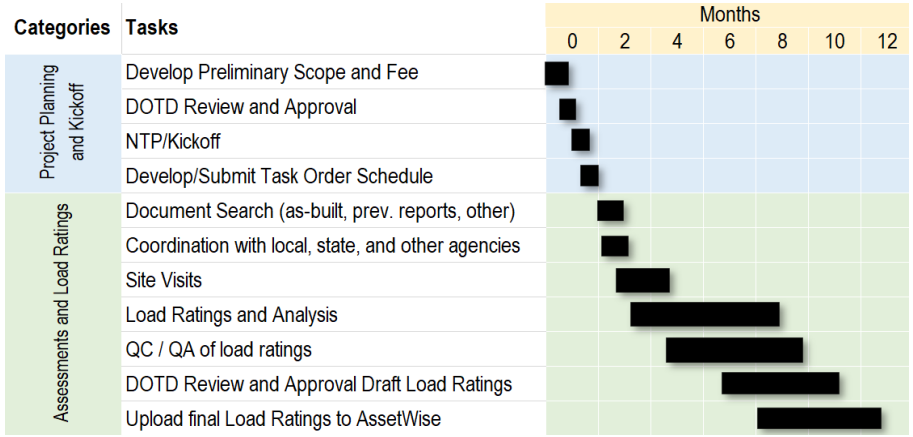
schematic recommendations for structural repairs to improve/eliminate that posting. Each repair will be given a priority designation to ensure that all critical findings and defects are addressed as soon as possible. A drop log, similar to the one TRC developed during its previous off-system load rating project, will track the needed file changes and status of each change.

Commitment to Quality Assurance / Quality Control: To ensure that all work is delivered in a fashion that exceeds the LA DOTD's expectations, a proven Quality Management Plan (QMP) with the full support of corporate management backs the TRC team's inspection, analysis/load rating, rehabilitation, and instrumentation services. Using that Plan as a foundation, a bridge design QA/QC Plan document specifically developed for this contract has been prepared and is included in Section 21 of this DOTD Form 24-120 document. This Plan mirrors previous QA/QC efforts that have been employed by TRC on LA DOTD bridge projects involving load ratings, inspection and design services, and leverages a stringent peer review process for all project work that permits adherence to schedules, scopes, budgets, safety, and other requirements. The plan also establishes guidelines to effectively monitor issues of identified non-conformance, evaluate root causes and impact, and implement appropriate corrective actions. One of the primary functions of our QA Team will be to have load ratings and reports reviewed by senior staff members to verify that documents are in accordance with our QMP.

Commitment to Safety: TRC understands that the safety of the traveling public, LA DOTD employees, and inspection personnel is paramount to the success of any project. We are committed to providing superior safety performance and are confident that our safety culture, management, and oversight will allow for a working environment that identifies and eliminates unsafe conditions. TRC employees complete the most up-to-date safety training programs, including Louisiana "Safety Practices" and federal (OSHA) specific training requirements, and employ specific tracking mechanisms to ensure that all subcontractors (if used) have current health and safety training and certifications. For each project, our project manager and senior team leader develop and implement a Site-Specific Health and Safety Plan (HASP) and Job Safety Analyses (JSAs) which address medical service locations/emergency procedures, special access, working at heights, confined space, traffic control, and specific equipment use. Each day of the inspection will include a detailed pre-job safety meeting attended by LA DOTD and TRC staff who will be on-site to identify potential safety hazards. 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 using multiple means of access throughout Louisiana and the United States. This safety record and written safety program provides the LA DOTD with the confidence that a competent team of professionals will be safely conducting the required site visits while providing quality deliverables.

PROJECT SCHEDULE

The schedule below depicts the progress of a typical load rating project along with its specific tasks, milestones, and deliverables. The timeline is flexible, with multiple TRC teams being available to accelerate the schedule and/or complete a higher volume of load ratings within each issued task order as needed.



19. Workload:

Firm(s) ALL FIRMS MUST BE REPRESENTED IN THIS TABLE	Past Performance Evaluation Discipline(s) *	Contract Number and State Project Number	Project Name	Remaining Unpaid Balance**
	Bridge	H.005121.5	LA 1/LA 415 Connector	$238,125
	Bridge	44-17327	IDIQ Contract for Innovative Procurement and Alternative Delivery Support Services – Task Order No. 4	$98,616
	Bridge	H.011965.6	LA 47 IWGO Bridge Rehabilitation CRES	$270,841
	Road	44-21128	LA 1: Port Allen Canal Bridge Replacement (Phase 1)	$17,000
	Other	H.009859.5	Bonnet Carre Spillway and Bayou Ramos Monitoring System Maintenance	$21,379

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 (please specify). 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. Note: All firms must be represented in this table. Leaving the "remaining unpaid balance" column blank is not acceptable.

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

Mr. Durk Henry Krone

License/Certificate Type - Number: PE.0031955
Expiration Date: 03/31/2024
Status: Active

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

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

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Baton Rouge, LA 70809
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Mr. Michael Dean Paul

License/Certificate Type - Number: PE.0032172
Expiration Date: 03/31/2024
Status: Active

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Mr. Xianzhi Liu
7321 Doswell Lane
Austin, Texas 78739

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

Mr. Xianzhi Liu

License/Certificate Type - Number: PE.0034727
Expiration Date: 09/30/2023
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:

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

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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

Ms. Nichole Marie Caiazzo

License/Certificate Type - Number: PE.0041078
Expiration Date: 03/31/2023
Status: Active

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As of 1/3/2022 the Louisiana Professional Engineering and Land Surveying Board (LAPELS) has the following information on file:

Mr. Mark David Castay
114 Cypress Point
Picayune, Mississippi 39466

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

Mr. Mark David Castay

License/Certificate Type - Number	Expiration Date
PE.0039430	09/30/2023

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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LOUISIANA PROFESSIONAL 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	Expiration Date
PE.0044141	03/31/2024

Status: Active

Fold Here

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

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

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

Disclaimer
All information provided by LAPELS on this web page, and on its other web pages and internet sites, is made available to provide immediate access for the convenience of interested persons. While LAPELS believes the information to be reliable, human or mechanical error remains a possibility, as does delay in the posting or updating of information. Therefore, LAPELS makes no guarantee as to the accuracy, completeness, timeliness, currency, or correct sequencing of the information. Neither LAPELS, nor any of the sources of the information, shall be responsible for any errors or omissions, or for the use or results obtained from the use of this information. Other specific cautionary notices may be included on other web pages maintained by LAPELS.

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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	Expiration Date
PE.0042845	03/31/2023

Status: Active

Fold Here

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

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

Attached

QA/QC PLAN DELETED PER
PAGE 5 OF ADVERTISEMENT

22. Sub-consultant information:

Firm Name (name must match as registered with Louisiana's Secretary of State)	Address	Point of Contact and email address	Phone Number
N/A			

23. Location:

N/A

DBE GOOD FAITH EFFORT DOCUMENTATION

The intent of this form is to document the good faith effort attempts made by the apparent low bidder in soliciting DBE firms to meet the DBE project goal. Please note that the project goal will not be waived and the contractor must make efforts to achieve the goal throughout the life of the contract.

Every work type where there is a certified DBE, the apparent low bidder must submit the form as follows:

- 1 available DBE – must contact 1 DBE
- 2-5 available DBEs – must contact 3 DBEs minimum
- 6-7 available DBEs – must contact 4 DBEs minimum
- 8-9 available DBEs – must contact 5 DBEs minimum
- 10 or more available DBEs – must contact 6 DBEs minimum

All information submitted on this form is subject to audit by the DBE Goal Committee

Date Submitted: January 11, 2023

State Project Number: 4400025865 Parish: Statewide

Contractor Name: TRC Engineers, Inc.

Address: 4545 Sherwood Common, Building 3, Suite A

City: Baton Rouge State: Louisiana Zip Code: 70816

Contact Person: Durk Krone, PE Telephone Number: 225-229-2968

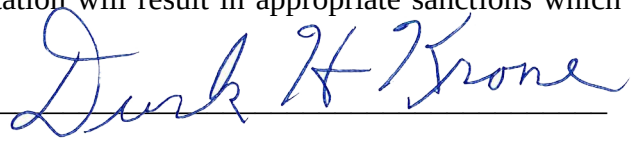
Email Address: dkrone@trccompanies.com

Project Goal Percentage: 2%

Commitment Percentage: 0%

Unattained Percentage: 2%

I certify that the information contained in this good faith effort documentation form is true and correct to the best of my knowledge. I further understand that any willful falsification, fraudulent statement or misrepresentation will result in appropriate sanctions which may involve debarment and/or prosecution under applicable State and Federal laws.

Bidder/Authorized Representative Signature: 

Title: Vice President Date: January 11, 2023

DBE GOOD FAITH EFFORT DOCUMENTATION

Work Type Number	Description of Work, Service or Material	DBE Firm Name
541330	Load rating for bridges	Regis Infrastructure Group

Contact Name (First and Last)	Contact Date	Contact Method	Contact Results	Bid Amount
1. Raul Regis, PE	Dec. 8, 2022	Telephone and e-mail	Successful	
2.				
3.				

Comments: Firm cannot provide staff with experience to meet the DOTD personnel requirements.

Work Type Number	Description of Work, Service or Material	DBE Firm Name
541330	Load rating for bridges	U.H. Services Group LLC

Contact Name (First and Last)	Contact Date	Contact Method	Contact Results	Bid Amount
1. Phillip Sauser, PE	Dec. 9, 2022	Telephone	Successful	
2.				
3.				

Comments: Firm cannot provide staff to meet the DOTD personnel requirements and experience with AASHTOWare BrR or BrDR.

Work Type Number	Description of Work, Service or Material	DBE Firm Name
541330	Load rating for bridges	Veteran Inspections and Assessments, LLC

Contact Name (First and Last)	Contact Date	Contact Method	Contact Results	Bid Amount
1. Audry J. (Jim) Ferguson, Jr. , PE	Dec. 8, 2022	Telephone and e-mail	Successful	
2.				
3.				

Comments: Firm cannot provide staff to meet the DOTD personnel requirements and experience with AASHTOWare BrR or BrDR.

DBE GOOD FAITH EFFORT DOCUMENTATION

Work Type Number	Description of Work, Service or Material	DBE Firm Name
541330	Load rating for bridges	FIT Engineering, LLC

Contact Name (First and Last)	Contact Date	Contact Method	Contact Results	Bid Amount
1. Sanya Watts, PE	Dec. 9, 2022	Online e-mail	Successful	
2.				
3.				

Comments: Firm has not responded to online e-mail request.

Work Type Number	Description of Work, Service or Material	DBE Firm Name
541330	Load rating for bridges	Engineering Consulting Services, Inc.

Contact Name (First and Last)	Contact Date	Contact Method	Contact Results	Bid Amount
1. Jay Jani, P.E.	Dec. 9, 2022	Online e-mail	Successful	
2.				
3.				

Comments: Firm has not responded to online e-mail request.

Work Type Number	Description of Work, Service or Material	DBE Firm Name
541330	Load rating for bridges	EK Engineering Consultants, LLC

Contact Name (First and Last)	Contact Date	Contact Method	Contact Results	Bid Amount
1. Easa Khan, PhD, PE	Dec. 9, 2022	Online e-mail	Successful	
2.				
3.				

Comments: Firm has not responded to online e-mail request.