LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

IDIQ CONTRACT FOR BRIDGE LOAD RATING STATEWIDE

CONTRACT NO. 4400025865

Submitted by: Hardesty & Hanover

JANUARY 2023

3850 N. Causeway Boulevard
Suite 1625
Metairie, LA 70002
T: 504.962.9212
www.hardestyhanover.com

January 11, 2023

Submitted via email: DOTDConsultantAds80@la.gov

Re: IDIQ Contract for Bridge Load Rating - Statewide
Contract No. 4400025865

Dear Consultant Evaluation Committee Members:

Hardesty & Hanover, LLC (H&H) welcomes this opportunity to propose on the IDIQ Contract for Bridge Load Rating Services throughout Louisiana. For this contract, we have assembled an ideal team of engineers to perform the required load rating services for various bridge types such as truss, movable, and segmental bridges. We are confident our staff who are familiar with the Federal Highway Administration's (FHWA) Load & Resistance Factor Rating processes and requirements will meet the challenges for bridge rating of any complex structure assigned to our team.

In addition to exceeding your MPRs requirements, our team consists of industry leaders, proven technical and management staff, who are capable, experienced, and available to work on this important contract. Our bridge experts have firsthand experience with the problems associated with aging bridge facilities. H&H's multi-disciplined team proposed for this contract understands the importance of providing accurate load ratings to ensure the safety of an infrastructure for the traveling public. We have provided LADOTD, other DOTs, and local government agencies with decades of comprehensive bridge design services, including load ratings.

The H&H team will be led by Babak Naghavi, PhD, PE, PH, a highly respected, experienced, and effective project manager. A former LADOTD engineer/administrator with 40 years of LADOTD bridge and roadway design and contract management experience, Dr. Naghavi will ensure that the project deliverables associated with this contract are delivered on time, within budget, and in compliance with the latest procedures and standards.

Dr. Naghavi will be supported by several Louisiana registered project engineers who have years of experience providing load ratings throughout the nation, including Roberto Viciedo, PE, and Benjamin Hawthorne, PE, SE. Complementing this team is a group of distinguished technical bridge experts, such as Timothy Noles, PE, and John Corven, PE, who will oversee the QA/QC process for the load rating tasks.

We look forward to a favorable review of our proposal and hope to be working with LADOTD on this important contract. If you have any questions regarding our proposal, please do not hesitate to contact me, directly at 504.962.9212 or bnaghavi@hardestyhanover.com.

Sincerely,
Hardesty & Hanover

Babak Naghavi, PhD, PE, PH
Regional Manager

DOTD FORM: 24-102

(Revised January 1, 2023)

PROPOSAL TO PROVIDE CONSULTANT SERVICES

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

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

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

1. Contract title as shown in the advertisement	IDIQ Contract for Bridge Load Rating
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**)	Hardesty & Hanover, LLC
5. Prime consultant license number (as registered with the Louisiana Professional Engineering and Land Surveying Board (LAPELS) if registration is required under Louisiana law)	LAPELS: EF.0005124 CAGE: 1MD51 DUNS: 05-455-2252
6. Prime consultant mailing address	Hardesty & Hanover, LLC 3850 N. Causeway Boulevard, Suite 1625 Metairie, LA 70002
7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)	Hardesty & Hanover, LLC 3850 N. Causeway Boulevard, Suite 1625 Metairie, LA 70002
8. Name, title, phone number, and email address of prime consultant's contract point of contact	Babak Naghavi, PhD, PE, PH Regional Manager 504.605.7940 bnaghavi@hardestyhanover.com
9. Name, title, phone number, and email address of the official with signing authority for this proposal	Babak Naghavi, PhD, PE, PH Regional Manager 504.605.7940 bnaghavi@hardestyhanover.com

10. This is to certify that all information contained herein is accurate and true, and that the team presently has sufficient staff to perform these services within the designated time frame. By submitting this proposal, proposer certifies that it is not engaged in a boycott of Israel and it will, for the duration of its contract obligations, refrain from a boycott of Israel. Proposer also certifies and agrees that the following information is correct: In preparing its response, the proposer has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor or supplier, refused to transact or terminated business activities, or taken other actions intended to limit commercial relations, with a person or entity that is engaging in commercial transactions in Israel or Israeli-controlled territories, with the specific intent to accomplish a boycott or divestment of Israel. The proposer also has not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. DOTD reserves the right to reject the response of the bidder or proposer if this certification is subsequently determined to be false, and to terminate any contract awarded based on such a false response.	 Signature above shall be the same person listed in Section 9: Date: 1/11/2023
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): See Good Faith justification (included) Firm(s)' %: 0%

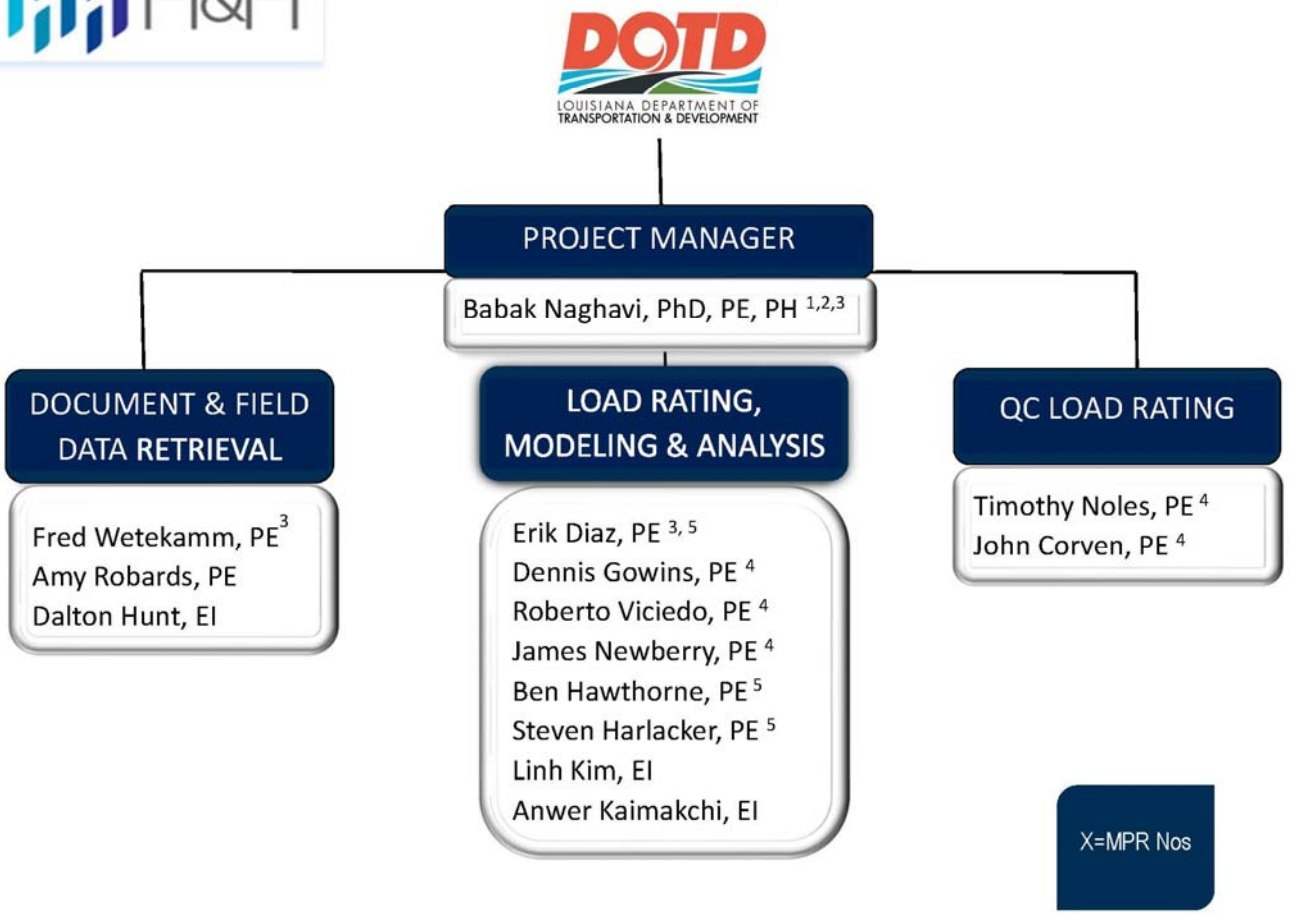
12. Past Performance Evaluation Discipline Table:

Past Performance Evaluation Discipline(s)	% of Overall Contract	Prime: Hardesty & Hanover	Subconsultant	Each Discipline must total 100%
Bridge	100%	100%	0%	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%	0%	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)
Hardesty & Hanover, LLC	Principal	1	9
	Supervisor – Eng	3	17
	Engineer	6	34
	Inspector - Bridge	1	29
	Engineer Intern	3	48
	Administrative	1	13

14. Organizational Chart:



15. Minimum Personnel Requirements:

Use the table below to identify both prime consultant and sub-consultant staff designated to work on this contract meeting the Minimum Personnel Requirements (MPRs) specified in the advertisement. Ensure the résumé reflects the required experience stated in the MPR. Make sure the P.E. discipline is also listed (highlighted in table) that is meeting the MPR; e.g., professional civil engineer should show the discipline of the license as civil if meeting that MPR.

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	Babak Naghavi	Hardesty & Hanover	PE #20745 - Civil	LA	9/30/2024
2	Babak Naghavi	Hardesty & Hanover	PE #20745 - Civil	LA	9/30/2024
3	Babak Naghavi	Hardesty & Hanover	PE #20745 - Civil	LA	9/30/2024
	Fred Wetekamm	Hardesty & Hanover	PE #25369 - Civil	LA	3/31/2024
	Erik Diaz	Hardesty & Hanover	PE #37712 - Civil	LA	9/30/2023
4	Dennis Gowins	Hardesty & Hanover	PE #24468 - Civil	LA	9/30/2023
	Roberto Viciedo	Hardesty & Hanover	PE #36533 - Civil	LA	3/31/2024
	James Newberry	Hardesty & Hanover	PE #45742 - Civil	LA	9/30/2023
	Timothy Noles	Hardesty & Hanover	PE #31675 – Civil	LA	9/30/2023
	John Corven	Hardesty & Hanover	PE #38309 – Civil	LA	03/31/2024
5	Erik Diaz	Hardesty & Hanover	PE #37712 - Civil	LA	9/30/2023
	Ben Hawthorne	Hardesty & Hanover	PE #44620 - Civil	LA	9/30/2024
	Steven Harlacker	Hardesty & Hanover	PE #37057 - Civil	LA	9/30/2024

16. Staff Experience:

Firm Employed by	Hardesty & Hanover		
Name	Babak Naghavi, PhD, PE, PH	Years of relevant experience with this employer	5
Title	Regional Manager	Years of relevant experience with other employer(s)	35

Degree(s) / Years / Specialization			PhD / 1993 / Civil Engineering / Louisiana State University MS / 1982 / Civil Engineering / Louisiana State University BS / 1979 / Civil Engineering / Louisiana State University
Active registration number / state / expiration date			Professional Engineer: 20745 / LA / 9/30/2024 NEPA Transportation Decision Making Workshop ATSSA Traffic Control Supervisor Refresher – ATSSA Flagger Safety Inspection of In-Service Bridges, NHI # 130055/53 Maintenance & Rehabilitation of Historic Bridges (LADOTD) Underwater Bridge Inspection, NHI # 130091 Bridge Inspection Non-Destructive Testing, NHI # 130099
Year registered	1983	Discipline	Civil and Environmental Engineering
Contract role(s) / brief description of responsibilities			Project Manager – Meets MPR 1, 2 and 3

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage," "designed girders," "designed intersection," etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
03/18 – Present	SR 609 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Project Manager responsible for full rehabilitation of SR 609 bascule bridge, as a task-order to the IDIQ Master Bridge Contract which includes developing standard and special bridge services, statewide for MDOT. Scope of work included the inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs were created in accordance with AASHTO, FHWA, and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software. The project is currently in the construction phase.
01/19 – Present	SR 605 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Project Manager responsible for the assessment, design, plan review, and quality control of SR 605 double-leaf bascule bridge, as a task-order to the IDIQ Master Bridge Contract which includes developing standard and special bridge services, statewide for MDOT. Scope of work includes inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software. The project is currently in the construction phase.

08/18-6/22	Lake Pontchartrain Causeway Safety Bay Improvement Project, New Orleans, LA - Greater New Orleans Expressway Project Manager responsible for construction engineering and inspection services for this fast-paced $60 million bridge improvement project designed according to LADOTD Standards and Specifications. The project utilized the Construction Manager at Risk (CMAR) delivery method. Improvements increase emergency stopping areas and widen both causeway bridges to provide new shoulders in at least six locations in each direction.
01/19 - Present	Lapalco Boulevard Movable Bridge over Harvey Canal, Westwego, LA – Jefferson Parish DPW Project Manager for the pre-design inspection, the rehabilitation and widening of the existing four-lane Lapalco Boulevard to provide a facility carrying three lanes of traffic in each direction, and the design of a new three-lane double bascule movable bridge crossing of Harvey Canal. project includes rehabilitation to the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane. The scope of services also includes the design of a new bridge to be constructed as an independent structure immediately adjacent and north of the existing bridge with a new operator house. Improvements to bridge and roadway approaches for eastbound and westbound traffic is also included in scope of work. Load rating was performed using AASHTOWare BrDR load rating software. All design work is according to Louisiana DOTD Standard and Specifications and reviewed by LADOTD.
06/18 – Present	H.002798.6; Bayou Teche Movable Bridge at Oaklawn Rehabilitation, St. Mary Parish, LA – Louisiana DOTD Project Manager responsible for design, and plan preparation of the bridge power distribution and relay-based control system for this movable bridge located in St. Mary Parish, LA. The new through girder swing-span rotates with hydraulically actuated slewing (push-pull) cylinders. The project is currently in the construction phase.
08/20 - Present	H.001498.6; LA 24 and LA 16 Company Canal Vertical Lift Bridge, Bourg, LA – Louisiana DOTD Project Manager delivering construction engineering and inspection services for a new vertical lift bridge and operator's house. Services include daily monitoring of all construction activities; maintaining all construction field records; coordinating with DOTD, contractor, parish government, and utilities; performing field testing; maintaining records of contractual operations, pay estimates and progress reports; preparing final estimate packages; conducting construction progress meetings; construction close-out, etc.
01/11 – 12/13	I-10 Calcasieu River Bridge Repairs, Calcasieu Parish, LA – Louisiana DOTD Project Manager, for construction engineering and inspection for structural repairs to 1-10 Calcasieu River Bridge. The project consisted of repairs to main deck truss and steel cantilever truss members, approach trestle pin plate connections, approach trestle anchor bolt repair, approach trestle bent repairs, deck joints repair, bridge railing repair, and approach roadway pavement expansion joints. The project also included cleaning and removal of lead-based paint and painting of truss connections and the replaced railing.
03/14 – 01/17	Off-System Hwy Bridge Replacement – St. Ann Bridge Over Bayou Terrebonne, Terrebonne, LA – Louisiana DOTD Project Manager for this CE&I project that involved removal of a single-lane truss swing span bridge structure, existing fender system, timber bulkhead, operator house, and existing timber piling. New construction involved a single swing span bridge, concrete slab bridge approaches, concrete approach slabs, timber fender system, navigational lighting, grading, aggregate surfacing, and asphaltic concrete roadway paving.
08/81 – 08/87	Road Design Section, Hydraulics Unit, Baton Rouge, LA - Louisiana DOTD Senior Hydraulics Engineer responsible for the review and design of the numerous drainage projects including the drainage design of roadway and bridge structures, scour analysis of bridges; and stabilization of stream banks and shorelines according to Louisiana Standard Specifications for roads and bridge. Also developed the Hydraulic Design Manual and all the hydraulics and hydrologic computer programs that were used by the LADOTD, other government agencies, and the consultant community for hydraulic design of roads and bridges.

16. Staff Experience:

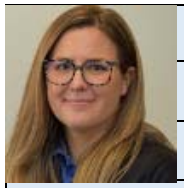
	Firm Employed by	Hardesty & Hanover		
	Name	Frederick Wetekamm, PE	Years of relevant experience with this employer	4
	Title	Senior Bridge Engineer	Years of relevant experience with other employer(s)	30

Degree(s) / Years / Specialization			ME / 2018 / Construction Engineering Management / University of Alabama - Birmingham BS / 1984 / Civil Engineering / Louisiana State University
Active registration number / state / expiration date			Professional Engineer: 25369 / LA / 3/31/2024 Maintenance & Rehabilitation of Historic Bridges (LADOTD) FHWA NHI Course #130055 Safety Inspection of In-Service Bridges FHWA NHI Course #130078 Fracture Critical Inspection Techniques for Steel Bridges ATSSA Traffic Control Supervisor and Flagger
Year registered	1993	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			Document Retrieval and Load Rating Engineer – Meets MPR 3

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage," "designed girders," "designed intersection," etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
03/18 - Present	SR 609 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Senior Bridge Structural Engineer responsible for inspection and full rehabilitation of SR 609 bascule bridge, a task-order to the IDIQ Master Bridge Contract which includes developing standard and special bridge services, statewide for MDOT. Scope includes inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software. The project is currently in the construction phase.
1996 - 2007	LADOTD Bridge Maintenance Engineer, LADOTD District 2, LA – Louisiana DOTD Bridge Maintenance Engineer responsible for managing the program for Bridge Inspection, Operations and Maintenance Program, bridge operators, bridge repair crews, and bridge inspectors. The New Orleans Area has over 950 bridges (32 movable bridges), three tunnels, two navigation locks, and three drainage pumping stations. Responsible for creating and distributing repair work orders and coordinating the repairs, materials, equipment, labor, media information, and/or traffic control. Wrote major repair requests and generated project plans and specifications for repair projects and accident damages to the bridges for marine, vehicular, and environmental damages. Lead Coordinator for the projects with LADOTD District/statewide forces, contractors, consultants, public officials, media, property owners, and bridge maintenance supervisors. Provided construction inspection and damage assessments (DIR) for federally reimbursed repairs from hurricanes and tropical storms. Experienced with specialized traffic requirements for the bridge/tunnel couplets, District traffic and marine requirements for temporary bridge closures, and permit load crossings. Bridge evaluations were completed using the Louisiana DOT Bridge Design Manuals and AASHTO.

01/20 - Present	Almonaster Avenue Railroad Bridge over the Industrial Canal Rehabilitation, New Orleans, LA – Port of New Orleans **Senior Bridge Engineer** for the bridge assessment, complete rehabilitative engineering design, and construction inspection services required for the partial replacement of the Almonaster Avenue Bridge, a movable Strauss-heel trunnion bridge. H&H's 2019 assessment of the circa-1920, eligible for the National Register of Historic Places bridge revealed that improvements to the electrical and mechanical systems, superstructure, and counterweight were required to return this bridge to its full operating capability. Although the existing substructure could remain, modifications were deemed necessary to accommodate the rehabilitated superstructure. H&H developed necessary design plans to replace the span drive and span lock machinery, operating strut, guide assembly, live load bearings, counterweight trunnion pin, and bushing. The main trunnion bearings were rehabilitated and repositioned. All design work is according to Louisiana DOTD Standard and Specifications and reviewed by LADOTD.
01/19 - Present	SR 605 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT **Structural Engineer** responsible for the assessment, design, plan review, and quality control of SR 605 double-leaf bascule bridge, as a task-order to the IDIQ Master Bridge Contract which includes developing standard and special bridge services, statewide for MDOT. Scope of work includes inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. **Load rating** was performed using AASHTOWare BrDR load rating software.
8/20 - Present	H.001498.6; LA 24 and LA 16 Company Canal Vertical Lift Bridge, Bourg, LA – Louisiana DOTD **Project Engineer** delivering construction engineering and inspection services for a new vertical lift bridge and operator's house. Services include daily monitoring of all construction activities; maintaining all construction field records; coordinating with DOTD, contractor, parish government, and utilities; performing field testing; maintaining records of contractual operations, pay estimates and progress reports; preparing final estimate packages; conducting construction progress meetings; construction close-out, etc.
01/19 - Present	Lapalco Boulevard Movable Bridge over Harvey Canal, Westwego, LA – Jefferson Parish DPW **Senior Bridge Engineer** for the pre-design inspection, the rehabilitation and widening of the existing four-lane Lapalco Boulevard to provide a facility carrying three lanes of traffic in each direction, and the design of a new three-lane double bascule movable bridge crossing of Harvey Canal. project includes rehabilitation to the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane. The scope of services also includes the design of a new bridge to be constructed as an independent structure immediately adjacent and north of the existing bridge with a new operator house. Improvements to bridge and roadway approaches for eastbound and westbound traffic as well as the development of a Traffic Control Plan is also included in scope. **Load rating** was performed using AASHTOWare BrDR load rating software. All design work is according to Louisiana DOTD Standard and Specifications and reviewed by LADOTD.
10/19 - Present	Annual Inspections of Almonaster Railroad Bascule Bridge over the Industrial Canal, New Orleans, LA – Port of New Orleans **Structural Inspection Team Leader** for an annual inspection of the Almonaster Avenue Railroad Bascule, which involves a structural inspection of the fracture critical steel, primary and secondary steel members, an electrical inspection of the electrical systems and controls, and a mechanical inspection of the machinery.
08/18 – 06/22	Lake Pontchartrain Causeway Safety Bay Improvement Project, New Orleans, LA - Greater New Orleans Expressway **Project Engineer** responsible for construction engineering and inspection services for this fast-paced $60 million bridge improvement project designed according to LADOTD Standards and Specifications. The project utilized the Construction Manager at Risk (CMAR) delivery method. Improvements increased emergency stopping areas and widen both causeway bridges to provide new shoulders in at least six locations in each direction.

16. Staff Experience:



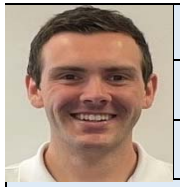
Firm Employed by	Hardesty & Hanover		
Name	Amy Robards, PE	Years of relevant experience with this employer	4
Title	Bridge Inspection Team Leader	Years of relevant experience with other employer(s)	7

Degree(s) / Years / Specialization			B.S. / 2012 / Civil Engineering / University of New Orleans
Active registration number / state expiration date			Professional Engineer: 41718 / Louisiana / 9/30/2023 FHWA-NHI 130055/53 Safety Inspection of In-Service Bridges / Refresher 2018 ATSSA Traffic Control Supervisor Refresher – ATSSA Flagger DOTD Certified Structural Concrete Inspector / LADOTD / 12/13/2023
Year registered	2017	Discipline	Civil and Environmental Engineering
Contract role(s) / brief description of responsibilities			Document & Field Data Retrieval 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).
08/20 – Present	H.001498.6; LA 24 and LA 16 Company Canal Vertical Lift Bridge, Bourg, LA – Louisiana DOTD Assistant Project Engineer delivering construction engineering and inspection services for a new vertical lift bridge and operator's house. Services include daily monitoring of all construction activities; maintaining all construction field records; coordinating with DOTD, contractor, parish government, and utilities; performing field testing; maintaining records of contractual operations, pay estimates and progress reports; preparing final estimate packages; conducting construction progress meetings; construction close-out, etc.
01/19 – Present	SR 605 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Bridge Inspector Team Lead responsible for the assessment, design, plan review, and quality control of SR 605 double-leaf bascule bridge, as a task-order to the IDIQ Master Bridge Contract which includes developing standard and special bridge services, statewide for MDOT. Scope of work includes inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software. The project is currently in the construction phase.
09/19 – 08/20	Lapalco Boulevard Movable Bridge over Harvey Canal, Westwego, LA – Jefferson Parish DPW Structural Inspector for the pre-design inspection, the rehabilitation and widening of the existing four-lane Lapalco Boulevard to provide a facility carrying three lanes of traffic in each direction, and the design of a new three-lane double bascule movable bridge crossing of Harvey Canal. Project included rehabilitation to the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane. The scope of services also included the design of a new bridge to be constructed as an independent structure immediately adjacent and north of the existing bridge with a new operator house. Load rating was performed using AASHTOWare BrDR load rating software. All design work is according to Louisiana DOTD Standard and Specifications and reviewed by LADOTD.

10/19 – Present	Annual Inspection of Almonaster Railroad Bascule Bridge over the Industrial Canal, New Orleans, LA – Port of New Orleans Structural Engineer/Inspector for an annual inspection of the Almonaster Avenue Railroad Bascule, an eligible for the National Register of Historic Places bridge, which involves a structural inspection of the fracture critical steel, primary and secondary steel members, an electrical inspection of the electrical systems and controls, and a mechanical inspection of the machinery.
08/18 – 06/22	Lake Pontchartrain Causeway Safety Bay Improvement Project, New Orleans, LA - Greater New Orleans Expressway Structural Inspector responsible for construction engineering and inspection services for this fast-paced $60 million bridge improvement project designed according to LADOTD Standards and Specifications. The project utilized the Construction Manager at Risk (CMAR) delivery method. Improvements increased emergency stopping areas and widen both causeway bridges to provide new shoulders in at least six locations in each direction.
03/16 – 10/17	US 190 Mississippi River Bridge CE&I, Baton Rouge, LA – Louisiana DOTD Structural Inspector responsible for providing construction engineering and inspection services required during the repairs to the US 190 Mississippi River Bridge approaches in Baton Rouge, Louisiana. Included in the project were assorted repairs as well as the replacement of anchor bolts at concrete footings and other steel approach spans elements.
03/19 – 06/22	Seabrook Railroad Bridge Annual / In-Depth Bridge Inspection, Port of New Orleans, LA – Port of New Orleans Structural Inspector responsible for conducting annual inspection of the Seabrook Trunnion Bascule Bridge crossing the IHNC in New Orleans, LA. This inspection included a structural inspection of the fracture critical steel, primary and secondary steel members, an electrical inspection of the electrical systems and controls, and an inspection of the mechanical systems and machinery.
02/18 – 03/18	Lapalco Boulevard Bridge Repairs Construction Supplement, Lapalco, LA - Jefferson Parish Structural Engineer/Inspector responsible for providing annual inspection services and contributed to subsequent inspection report. Jefferson Parish requested a yearly valuation to determine the value of the bridge.
12/15 – 05/18	Huey P. Long Bridge over the Mississippi River Annual Inspections, Bridge City, LA – New Orleans Public Belt Railroad (NOPBRR) and Louisiana DOTD Structural Engineer/Inspector provided annual inspection services for the main bridge and railroad approaches of the Huey P. Long Bridge, a 2,400-foot-long cantilevered steel through truss bridge that carries a two-track railroad line and three lanes of US 90, as well as the turntable span and maintenance facilities. Inspected the primary members on the deck truss, main spans, piers, towers, and girders using standard climbing techniques and used technical access (rappelling) to inspect the piers. Contributed to the pre-inspection planning, coordination, and writing the final inspection reports.
04/18 – 06/18	19 Complex Bridge Inspections and Load Ratings, Statewide, LA – LADOTD Structural Engineer provided inspection and evaluation services for 19 complex bridges at various locations throughout Louisiana.
06/17 – 08/17	International Paper Company Bridge I&R Load Rating and Inspection, Mansfield, LA – LADOTD Structural Engineer responsible for conducting load rating analysis for International Paper Company's Bridge (IPC) bridge facilities. IPC wanted to add additional weight to its railroad line.

16. Staff Experience:



Firm Employed by	Hardesty & Hanover		
Name	Dalton Hunt, EI	Years of relevant experience with this employer	1
Title	Civil Designer	Years of relevant experience with other employer(s)	1

Degree(s) / Years / Specialization			B.S. / 2021 / Civil Engineering / Louisiana State University
Active registration number / state / expiration date			Engineer In Training: 0035118 / Louisiana / 09/30/2024 Safety Inspection of In-Service Bridges, NHI # 130055
Year registered	2022	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			Document & Field Data Retrieval Engineer Intern

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).
02/22 – Present	Almonaster Avenue Bridge Rehabilitation and New Connector Road, New Orleans, LA – Port of New Orleans Engineer Intern for the bridge assessment, complete rehabilitative engineering design, and road design services required for the partial replacement of the Almonaster Avenue Bridge and a new connector road. The road design services include a new alignment for the connecting road including all drainage structures. H&H also developed a hydraulic study and a site plan that includes several retention ponds for drainage improvements. All design work is according to LADOTD Standard and Specifications and reviewed by LADOTD.
04/22 – 09/22	SR-605 Bascule Bridge over Industrial Waterway, Harrison County, MS – Mississippi DOT Engineer Intern for the comprehensive rehabilitation of this bascule bridge over the Industrial Waterway. Work also included design and detailing of a new PPC pile-supported reinforced concrete generator platform. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software.
04/22 – Present	SR-609 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Engineer Intern responsible for full rehabilitation of SR 609 bascule bridge as a task-order to the IDIQ Master Bridge Contract which includes developing standard and special bridge services statewide for MDOT. The scope of work includes inspection and rehabilitation of structural, mechanical, and electrical bridge components, roadway approaches, and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA, and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software. The project is currently in the construction phase.
02/22 – Present	Lapalco Boulevard Movable Bridge over Harvey Canal, Westwego, LA – Jefferson Parish DPW Engineer Intern for the pre-design inspection, the rehabilitation and widening of the existing four-lane Lapalco Boulevard to provide a facility carrying three lanes of traffic in each direction, and the design of a new three-lane double bascule movable bridge crossing of Harvey Canal. project includes rehabilitation to the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane. The scope of services also includes the design of a new bridge to be constructed as an independent structure immediately adjacent and north of the existing bridge with a new operator house. All design work is according to Louisiana DOTD Standard and Specifications and reviewed by LADOTD. Load rating was performed using AASHTOWare BrDR load rating software.

16. Staff Experience:

Firm Employed by	Hardesty & Hanover		
Name	Erik Diaz, PE	Years of relevant experience with this employer	3
Title	Senior Bridge Structural Engineer	Years of relevant experience with other employer(s)	11

Degree(s) / Years / Specialization			B.S., 2008, Civil Engineering, Louisiana State University
Active registration number / state / expiration date			Professional Engineer: 37712 / LA / 09/30/2023 Maintenance & Rehabilitation of Historic Bridges (LADOTD) NHI Course 130092. Fundamentals of LRFR and Applications of LRFR For Bridge Superstructures NHI Course 130081. Load and Resistance Factor Design (LRFD) For Highway Bridge Superstructures Safety Inspection of In-Service Bridges, NHI # 130056
Year registered	2013	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			Load Rating, Modeling & Analysis Engineer – Meets MPR 3 & 5

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage," "designed girders," "designed intersection," etc. Experience dates should cover the years of experience time specified in the applicable MPR(s).
08/19 – Present	SR 609 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Senior Structural Engineer for full rehabilitation of SR 609 bascule bridge, as a task-order to the IDIQ Master Bridge Contract which included developing standard and special bridge services, statewide for MDOT. Scope of work included load rating modeling and analysis, inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software. The project is currently in the construction phase.
08/19 – Present	Lapalco Boulevard Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana – Jefferson Parish DPW Senior Bridge Structural Engineer for the pre-design inspection and design of a new three-lane double bascule movable bridge crossing of Harvey Canal and the widening of the existing four-lane Lapalco Boulevard to provide a facility carrying three lanes of traffic in each direction. The new bridge is constructed as an independent structure immediately adjacent and north of the existing bridge with a new operator house. Project includes rehabilitation to the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane, improvements to bridge and roadway approaches, and development of a Traffic Control Plan. All design work is according to Louisiana DOTD Standard and Specifications and reviewed by LADOTD. Load rating was performed using AASHTOWare BrDR load rating software.

08/19 – Present	SR-605 Bascule Bridge Over Industrial Waterway, Harrison County, MS – Mississippi DOT Senior Structural Engineer performing the bridge load rating for movable bridge and fixed bridge approaches. Contributing to structural design for the comprehensive rehabilitation of this bascule bridge over the Industrial Waterway. Work on this project includes design and detailing of a new PPC pile-supported reinforced concrete generator platform as well as the design and detailing of steel access improvements. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software
10/14 – 12/15	Bridge Ratings for 110 Bridges, Statewide – LADOTD Bridge Structural Engineer responsible for developing spreadsheets and processes for rating of several bridge structures. Also, performed load ratings for bridge superstructures and substructures using AASHTOWare BrDR load rating software and Excel. He also developed the bridge load rating reports.
12/12 – 10/15	Houma Navigation Canal Bridge Rehabilitation, Houma, LA – LADOTD Bridge Structural Engineer responsible for performing bridge inspections to identify repairs for rehabilitation as well as providing bridge rating to identify areas for strengthening. Also, designed and detailed various elements for bridge rehabilitation.
08/15 – 02/19	Vermillion River Vertical Lift Bridges Rehabilitation, Vermillion Parish, LA – LADOTD Senior Structural Engineer for the inspection, rating, and final rehabilitation recommendations report for two steel vertical lift bridges over the Vermillion River. Work on this project included inspection and load rating to identify components of the bridge to be rehabilitated. Evaluation of various alternatives for strengthening the bridge and increasing vehicular vertical clearance. Produced engineers cost estimate for repairs, and prepared final report of recommendations.
01/20 – Present	Almonaster Avenue Railroad Bridge of the Industrial Canal Rehabilitation, New Orleans, LA – Port of New Orleans Bridge Structural Engineer for the bridge assessment, rehabilitative engineering design, and construction inspection services required for the partial replacement of the Almonaster Avenue Bridge, a movable Strauss-heel trunnion bridge. H&H's 2019 assessment of the circa-1920, National Register of Historic Places eligible bridge revealed that improvements to the electrical and mechanical systems, superstructure, and counterweight were required to return this bridge to its full operating capability. Although the existing substructure could remain, modifications to other bridge elements were deemed necessary to accommodate the rehabilitated superstructure. All design work is according to Louisiana DOTD Standard and Specifications and reviewed by LADOTD.
08/19 – 10/19	Seabrook Bascule Bridge Bearing Repairs, New Orleans, LA – Port of New Orleans Movable Bridge Field Engineer for the construction of repairs to the concrete bent cap at the toe of the span. Work on this project included design of bent cap strengthening due to cracking at bridge bearing, tracking contractor progress and construction compliance with design plans. Preparation of final acceptance report upon completion of construction.
10/08 – 04/13	Huey P. Long Bridge Over The Mississippi River, Bridge City, LA - New Orleans Public Belt Railroad And Louisiana DOTD Bridge Structural Engineer responsible for checking and approving shop drawings as well as performing various construction support calculations. The project was a major widening of the bridge including HPL trusses and approaches.
07/16–07/17	Two US-11 Bascule Bridges over Lake Pontchartrain Rehabilitation, Jefferson and St. Tammany Parishes, LA – LADOTD Senior Bridge Structural Engineer for the comprehensive rehabilitation of one bascule and replacement of another bascule bridge over Lake Pontchartrain. Work on this project included the inspection of old spans, the rehabilitation design development for the north bascule span and fender, as well as the design of construction plans for a new south bascule span.

16. Staff Experience:

Firm Employed by	Hardesty & Hanover		
Name	Dennis Gowins, PE	Years of relevant experience with this employer	2
Title	Structural Engineer	Years of relevant experience with other employer(s)	42

Degree(s) / Years / Specialization			B.S. / 1978 / Civil Engineering / University of Alabama M.S./ 1990 / Civil Engineering / Illinois Institute of Technology
Active registration number / state / expiration date			Professional Engineer: 0024468 / LA / 09/30/2023
Year registered	1991	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			Bridge Analysis/Load Rating Engineer – Meets MPR 4

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage," "designed girders," "designed intersection," etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
08/14 – 10/15	I-269 Over Coldwater River, Marshall County, MS - Mississippi DOT Structural Engineer responsible for the seismic analysis and load rating of this 4,054-foot-long, 62 span bridge (17 units) carrying I-269 over Coldwater River. The 98-foot-wide bridge carries 6 lanes of traffic with barriers. The 65-foot spans are comprised of 9 Type III AASHTO beams on 11-foot, 6-inch spacings with an 8-inch concrete deck. The bridge is supported on precast concrete pile bents with 24-inch prestressed concrete piles. A site-specific response spectrum analysis was performed with an extensive 3D finite element model. Nonlinear springs were applied along each pile element to emulate the response of the extremely variable sand / clay layers.
06/03 – 12/04	Replacement of the US-17A Over I-26, Berkeley County, SC - South Carolina DOT Structural Engineer for the development of the final design including load rating of the 360-foot, four-span bridge replacement. This structure, which was analyzed for site specific seismic loads and is located on a main arterial between the northern suburbs and the City of Charleston. The 145-foot-wide superstructure is supported by bulb-tee and AASHTO girders, which in turn are supported by traditional bents and drilled shafts founded in cooper marl.
09/13 – 06/14	Tampa International Airport Taxiway B Bridge, Tampa, FL - Hillsborough County Aviation Authority Structural Engineer responsible for independent checks of the longitudinal analyses, principal stresses, load rating, and 3-D finite element analyses of the adequacy of the existing bridge. The project included the inspection / peer review of the 227-foot, 6-inch-long by 217-foot, 6-inch-wide bridge and calculations following inspection. The inspection revealed cracking in the deck and blocked tendons. The major spans of the bridge are 97 and 94 feet with a small outer span of 36 feet. The bridge is a multicell cast-in-place post-tensioned (31K6 tendons) concrete bridge. The bridge is designed to carry the Boeing 777 and Boeing 747 loads in addition to the new Airbus A380 load of 1,361,500 pounds. The bridge is founded on columns supported on four-foot drilled shafts.

08/16 – 06/21	SR 836 / I-95 / I-395 INTERCHANGE, MIAMI , FL - FLORIDA DOT Structural engineer responsible for all substructure and miscellaneous structural designs and load rating for the segmental bridges during the successful design-build pursuit. For final design, responsible for review of all substructure bridge designs (bridges 4,5,6w,6e,7w,7e and 11 – 12,600 lf) and final design of all abutments and miscellaneous structures. The segmental bridges are built in balanced cantilever and are founded on footings supported by auger cast concrete pilings. This $800m project is all about transforming Miami by reconnecting communities that were once divided, creating a safer environment for pedestrian and vehicular traffic, and solving mobility challenges that have inhibited traffic for many years.
06/97 – 12/01	SR 84 Bridge over South Fork New River, Davie, FL – Florida DOT Bridge Structural Engineer responsible for the design, detail of repairs, and preparation of cost estimates for a $4-million Hopkins trunnion single-leaf bascule span bridge rehabilitation. The project included in-depth structural, mechanical, and electrical inspection; reports; load ratings on bascule and approach spans; and rehabilitation plans for the structural, mechanical, and electrical systems.
02/08 – 12/10	SR-5 / US-1 Parker Bascule Bridge Rehabilitation, Palm Beach, FL – Florida DOT Bridge Project Engineer responsible for general project coordination for the $8 million, twin double-leaf Hopkins trunnion bascule span bridge rehabilitation project. Scope included in-depth inspection, condition report with load ratings, and rehabilitation recommendations as well as the preparation of structural, architectural, mechanical, and electrical plans for the hydraulic machinery retrofit, electrical system improvements, control house modifications, bridge widening, roadway, and embankment improvements
01/98 – 08/07	SR 786/PGA Boulevard Bascule Bridge Rehabilitation, Palm Beach Gardens, FL - Florida DOT Bridge Structural Engineer responsible for the design, detail of repairs, load rating analysis, and preparation of cost estimates. This $15-million multi-phase construction project included in-depth inspection, condition report with load ratings and recommendations, preparation of structural, mechanical, and electrical rehabilitation plans, and bascule span replacement plans for this twin double-leaf bascule span bridge. Project design utilized existing bascule pier foundations and approach span structure to minimize costs. The design required multi-phase construction to maintain traffic.
10/20 – 07/22	Roosevelt Bridge Emergency Post-Tensioning Repairs, Stuart, FL – Florida DOT Structural Engineer for the emergency repairs to the Roosevelt Bridge in Stuart, Florida. The twin, 4,500' long post-tensioned segmental bridges carry US Highway 1 over the St. Lucie River. During a routine biannual inspection, inspectors found significant cracking, leading to the closing of both the northbound and southbound bridges was discovered on June 16, 2020 by the Florida Department of Transportation. The cracking was the result of post-tensioning tendon failures as a result of excessive corrosion. The engineering team was mobilized the following day under emergency conditions. Within 5 days, the bridges were inspected and analyzed, such that the northbound bridge could reopen to reduced two-way traffic. Two months later the final analysis, design and repair plans were completed. Using an innovative CMGC contract, repairs were made, and the bridges opened to traffic in November of 2020. The work included partial deconstruction and then reconstruction of the segmental bridge and the addition of new post-tensioning tendons.

16. Staff Experience:

Firm Employed by	Hardesty & Hanover		
Name	Roberto Viciedo, PE	Years of relevant experience with this employer	25
Title	Structural Engineer	Years of relevant experience with other employer(s)	1

Degree(s) / Years / Specialization			B.S. / 1995 / Civil Engineering
Active registration number / state / expiration date			Professional Engineer: 0036533 / LA / 03/31/2024
Year registered	2011	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			Bridge Load Rating / Movable Bridge Structural Engineer – Meets MPR 4

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage," "designed girders," "designed intersection," etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
03/20 – Present	SR 609 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Senior Structural Engineer for full rehabilitation of SR 609 bascule bridge, as a task-order to the IDIQ Master Bridge Contract which included developing standard and special bridge services, statewide for MDOT. Scope of work included inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software. The project is currently in the construction phase.
01/07 – 06/11	Mathews Bridge (SR 115) Emergency Bridge Repair, Jacksonville, FL – Florida DOT Structural Engineer for emergency repair to the bottom chord and floor system for the 810-foot suspended span on the main channel span cantilevered truss due to a ship collision. Temporary bottom chord and jacking system was designed to temporarily support the severed truss chord, and jack load into the chord to correct truss geometry. Repairs also included heat straightening of truss gusset plates, gusset plate replacement, and lateral bracing replacement. Design was completed in 3 days.
01/19 – Present	SR 605 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Structural Engineer responsible for the assessment, design, plan review, and quality control of SR 605 double-leaf bascule bridge, as a task-order to the IDIQ Master Bridge Contract which includes developing standard and special bridge services, statewide for MDOT. Scope of work includes inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software. The project is currently in the construction phase.
04/18 – 08/18	Brorein Street Bascule Bridge Rehabilitation, Tampa, FL – City of Tampa Structural Engineer responsible for design services, including a load rating analysis, for the rehabilitation of the movable span of the Brorein Street bascule bridge over the Hillsborough River in downtown Tampa, Florida. The project included widening of the approach spans and the bascule leaves to provide a 10-foot shared use path on each side.

07/18 – 01/21	SR 3/Christa McAuliffe Bridge Over Canaveral Barge Canal, Merritt Island, FL - Florida DOT Project Manager in charge of general project coordination and a task for the design, detail of repairs, load rating analysis using AASHTOWare BrDR, and preparation of cost estimates during the design phase. Also provided construction support services for this $3.9 million span lock replacement project for twin double-leaf bascule bridges. The existing underdeck span locks were removed and replaced with new barrier mounted span locks.
02/14 – Present	SR 968/SW 1st Street Bridge Over Miami River, Miami, FL - Florida DOT Project Engineer / Structures Task Leader responsible for general project coordination, design, load rating, and managing construction support services phase for the replacement of the nationally registered historic bridge crossing the Miami River. The new 507-foot bridge included a 315-foot double-leaf bascule span over a widened 125-foot navigation channel. Two new approach spans consisting of prestressed concrete beams provided at least 16.5 feet of clearance over North and South River Drives.
07/04 – 07/10	SR 7/NW 5th Street Bascule Bridge Over Miami River | Miami, FL - FLORIDA DOT Project Engineer responsible for design, load rating analysis and construction support services for this $50-million bridge replacement project which included double-leaf bascule spans, bridge, control tower, approach roadways, and riverwalk. The 180-foot bridge used the appearance of a deck truss Chicago-style trunnion bascule span to fit in with the historic and aesthetic character of Miami's Little Havana community.
04/98 – 08/07	SR 786/PGA Boulevard Bridge Over ICWW, Palm Beach Gardens, FL - Florida DOT Structural Engineer responsible for the design, detail of repairs, load rating analysis, and preparation of cost estimates. This $15-million multi-phase rehabilitation project included in-depth inspection, condition report with load ratings and recommendations, preparation of structural, mechanical, and electrical rehabilitation plans, and bascule span replacement plans for this twin double-leaf bascule span bridge. Project design utilized existing bascule pier foundations and approach span structure to minimize costs. The design required multi-phase construction to maintain traffic.
01/11 – 03/17	SR-A1A / Flagler Memorial Bridge Over ICWW | Palm Beach, FL - Florida DOT Structural Task Leader responsible for the design of twin double-leaf rolling lift bascule span superstructures, load rating, and construction support services for the $95 million design-build project that included replacement of the entire bridge off-line and parallel to the existing bridge to maintain traffic for this busy causeway connecting West Palm Beach to Palm Beach. The replacement bridge, completed in 2018, included a twin double-leaf rolling lift bascule span bridge with a 150-foot rolling-lift-span over the navigable channel; twelve 150-foot pre-stressed concrete approach spans; and approach roadway work.
08/14 – 07/19	Camino Real Bridge Over ICWW, Boca Raton, FL - Palm Beach County Structural Engineer responsible for the load rating analysis of the main girders and the detailing of the bascule span rehabilitation plans of a historic double-leaf rolling lift span constructed in 1939. The rehabilitation of this historic double-leaf rolling lift span included designs for rehabilitated machinery, new tender house HVAC units, new plumbing systems, new span locks, and the development of technical special provisions. Structural rehabilitation designs involved new roadway grating, floor beam brackets for wider sidewalks, stringers, and bridge railing. Aluminium structural components were used to minimize weight to counterbalance.
01/08 – 08/16	Gasparilla Island Swing Bridge Over ICWW, Placida, FL – Gasparilla Island Bridge Authority Structural Task Leader responsible for the final design and load rating for the replacement of a 220-foot swing span bridge. Also provided construction support services for this $20-million project consisting of 678 feet of the new bridge including a 250-foot deck girder swing span and approach spans utilizing Florida I-Beams. Embankments, supported by MSE walls, were protected by new bulkheads and revetment. In addition to the bridge structures, a new pile-supported tender house was included.

16. Staff Experience:

Firm Employed by	Hardesty & Hanover		
Name	James Newberry, PE, SE	Years of relevant experience with this employer	6
Title	Movable Bridge Structural Engineer	Years of relevant experience with other employer(s)	9

Degree(s) / Years / Specialization			M.S. / 2006 / Civil Engineering B.S. / 2006 / Civil Engineering
Active registration number / state / expiration date			Professional Engineer: 45742 / LA / 09/30/2023
Year registered	2011	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			Bridge Analysis/Load Rating Engineer – Meets MPR 4

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage," "designed girders," "designed intersection," etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
04/21 – 09/21	Brorein Street Bascule Bridge Rehabilitation, Tampa, FL – City of Tampa Structural Engineer responsible for design services, including a load rating analysis, for the rehabilitation of the movable span of the Brorein Street bascule bridge over the Hillsborough River in downtown Tampa, Florida. The project included widening of the approach spans and the bascule leaves to provide a 10-foot shared use path on each side.
07/07 – 02/08	Wilson Pigott (SR 31) over Okeechobee Waterway Bascule Bridge Rehabilitation, Fort Myers, FL – Florida DOT Movable Bridge Structural Designer performed the span balance calculations, assisted with design calculations of other structural components, reviewed, and analyzed load test data to assist in the assessment of priority repairs. Services called for the in-depth inspection, evaluation, load rating per LRFR methodology, and rehabilitation design of this 50-year-old, 3,120-foot-long bridge with a double-leaf trunnion bascule main span. Responsibilities included performing independent peer review of the machinery repairs and steel grid deck replacement – plus performing peer review of the capacity evaluation of the unique precast, post tensioned concrete beams of the approach spans, which were among the first widespread use of prestressed concrete in the United States.
03/09 – 12/10	LaBelle Drawbridge (SR 29) Repairs & Rehabilitation, Labelle, FL – Florida DOT Movable Bridge Structural Designer produced various designs for the structural components for repairs to the approach and bascule spans, including the bascule leaf cantilever bracket, stringers, approach span bearing pads, and mast arms on the approaches. Checked the adequacy of the existing approach span diaphragms for jacking the spans. Provided quality control check of the bascule span balance calculations. Load rated the 40-foot approach span prestressed concrete beams, bascule span stringers and stringers over machinery, main girder, grid deck, and floorbeams. Load rated the flanking span stringers and floorbeams.
11/16 – 10/18	I-95 Load Ratings | Broward and Dade Counties, FL - Florida DOT Structural Engineer calculated load rating for 18 bridges along I-95 in Florida DOT Districts Four and Six before proposed bridge widenings to determine whether rehabilitation/widening was a viable option for each structure.

02/16 – 12/18	Wave Streetcar / SE 3RD Avenue Bridge Over The New River | Fort Lauderdale, FL - FDOT Structural Engineer responsible for the load rating of the existing post-tensioned concrete beam approach spans for SE 3rd Avenue Bridge. The new WAVE Streetcar will travel across the existing 3rd Avenue Bridge. H&H's scope included all necessary design modifications to the rolling-lift-span, pier, and associated mechanical/electrical systems and load rating to accommodate the new embedded rail while providing sufficient strength, stiffness, and ride-ability for the new mode of transportation. The goal was to replace the leaf with a new bascule span, which is 61-feet-long between centers of roll and features tracks and treads on a 6-foot, 2-inch roll radius, mechanical drive train with enclosed gearing driving the rack pinion, and tail lock mechanism. The SE 3rd Avenue bascule bridge will become the only double-leaf bascule in the nation to carry rail traffic. This challenging project required careful coordination of several disciplines and industry experts including movable bridge, roadway, rail, transportation systems, and control systems.
12/16 – 02/17	Longboat Pass Bridge Bascule Span Condition Assessment Report and Load Rating, Manatee County, FL – Florida DOT Movable Bridge Structural Engineer responsible for drafting report and cost estimate, conducted structural inspection of bascule span and load rated the existing bascule span structural steel elements. The objective of the report, cost estimate, and load rating was to identify deficiencies of the bascule span that required repairs in the next ten years, including structural, mechanical, and electrical items.
08/12 – 07/14	Crescent Beach (SR 206) Bridge Repairs, St. Johns County, FL - Florida DOT Lead Structural Designer responsible for load rating the bascule span (main girders, floorbeams, and stringers), steel flanking span, and prestressed concrete approach spans. Assisted with plans production.
06/08 – 04/11	I-75 over Jacaranda Boulevard Design-Build Bridge Widening, Sarasota County, FL - Florida DOT Structural Designer participated in plans preparation and load rating analysis. Project involved new full-depth cast-in-place decks, which replaced the existing composite precast panel concrete decks, and the design of new steel girders and concrete substructures for the widened portion of the bridges.
04/06 – 08/08	I-75 Southbound and Northbound Bridges Over Fox Creek | Sarasota County, FL - Florida DOT Structural Designer responsible for load rating analysis for a proposed roadway widening. The median portion of the existing two-span continuous 102-foot bridges was removed and the bridges were widened by adding three prestressed concrete AASHTO Type II girders on widened bents. Performed load rating analysis checks for existing and final configuration of AASHTO precast prestressed concrete girders using AASHTOWare BrDR load rating software.
01/19 – Present	Beckett Bridge Replacement, Tarpon Springs, FL – Pinellas County Movable Bridge Structural Designer on the bridge replacement project which entails replacing an existing historic bridge with a new 360-foot single-leaf, rolling-lift, bascule bridge. The structure carries Riverside Drive over Whitcomb Bayou and features two traffic lanes, and a sidewalk. The movable span features steel plate girder main girders and floorbeam and an Exodermic deck that spans longitudinally between floorbeams. The bascule pier footing and approach pier caps feature precast concrete elements to facilitate accelerated bridge construction. Foundations are drilled shafts and pipe piles, designed to accommodate challenging site conditions including a relict sinkhole under the bridge. Design responsibilities included quality control for approach span substructure and foundations, and retaining walls, and the final design of bascule span structural steel elements.
06/11 – 12/11	Pinellas Bayway Structure "C" Bridge Repairs, Pinellas County, FL – Florida DOT Structural Designer performed the span balance calculations for the proposed bascule leaf repairs. Performed load rating of the bascule span. This project was shelved in lieu of a replacement.

16. Staff Experience:

<table>
<tr><td rowspan="3">  </td><td>Firm Employed by</td><td colspan="3">Hardesty & Hanover</td></tr>
<tr><td>Name</td><td>Benjamin Hawthorne, PE, SE</td><td>Years of relevant experience with this employer</td><td>17</td></tr>
<tr><td>Title</td><td>Bridge Structural Engineer</td><td>Years of relevant experience with other employer(s)</td><td>0</td></tr>
<tr><td colspan="2">Degree(s) / Years / Specialization</td><td colspan="3">B.S. / 2005 / Civil Engineering / Lehigh University</td></tr>
<tr><td colspan="2">Active registration number / state / expiration date</td><td colspan="3">Professional Engineer: 44620 / LA / 09/30/2024</td></tr>
<tr><td>Year registered</td><td>2011</td><td>Discipline</td><td colspan="2">Structural Engineering</td></tr>
<tr><td colspan="2">Contract role(s) / brief description of responsibilities</td><td colspan="3">Bridge Analysis/Load Rating Engineer – Meets MPR 5</td></tr>
<tr><td>Experience dates (mm/yy–mm/yy)</td><td colspan="4">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).</td></tr>
<tr><td>03/20 – Present</td><td colspan="4">Middletown Swing Railroad Bridge Rehabilitation, Middletown, CT – Connecticut DOT
Project Manager for the rehabilitation of a 300-foot, single-track swing span, four 200-foot through truss approach spans, and a 60-foot through girder span. The structure is serves Providence & Worcester Railroad customers in Portland, CT. Rehabilitation and repair details are based on results of an in-depth structural, mechanical, and electrical inspection and load rating of the structure. Structural repairs target primary members in poor condition and any elements that do not rate for a 286K carload. Additional work includes safety upgrades to the access system and fender system repairs. Swing span operating system rehabilitation includes replacement of low-torque high-speed mechanical equipment and upgrades to the electrical system.</td></tr>
<tr><td>07/13 – 05/19</td><td colspan="4">Sarah M. Long Vertical Lift Bridge, Kittery, ME – Maine DOT
Bridge Structural Engineer on joint-venture team for a complete vertical lift bridge replacement. Responsible for design of the steel box girder lift span and associated structural elements. Ben was involved in all phases of the project, providing design services for the preliminary design, final design, and design support during construction, including providing a preliminary design report, plans, design and design check computations, ratings, specifications, and estimates, for the replacement of the Sarah Mildred Long Bridge located on U.S Route 1 Bypass between Kittery and Portsmouth. The bridge carries Pan Am Railway and highway traffic and was designed in accordance with AREMA and AASHTO specifications.</td></tr>
<tr><td>11/14 – 06/20</td><td colspan="4">Rehabilitation of AETNA Viaduct (I-84) Bridges/Phase 2, Hartford County, CT - Connecticut DOT
Project Engineer for the design and construction support phases of the rehabilitation of bridges carrying I-84 over Amtrak’s Hartford Line, Fastrack busway, parking areas, and local streets. Preliminary design phases of the project included condition inspection and load rating of the approximately 5,000-foot-long multi-girder viaduct structure to determine rehabilitation and repair strategies. Rehabilitation included: deck patching and overlay, deck end reconstruction and joint replacement, structural steel repairs primarily at beam ends, elastomeric bearing replacement, parapet safety upgrades including reconstructed median barrier with new deck overhangs, illumination upgrades, IMS facilities upgrades, and concrete substructure repairs. During construction, led the effort to design new high-load multi-rotational (HLMR) disc bearings and developed concrete column top reconstruction details to facilitate installation and improve long term durability of the column.</td></tr>
</table>

01/19 – Present	East Haddam Swing Bridge over the Connecticut River Rehabilitation, Haddam, CT – Connecticut DOT Bridge Project Engineer responsible for the preparation of load ratings and feasibility study reports in support of a rehabilitation of this 4-span truss swing bridge. The bridge, which opened in 1913 and has been posted on the National Register of Historic Places, carries two lanes of Route 82 traffic over the Connecticut River and includes a deck truss span, through truss span, and a 465-foot-long through truss swing span. Rated elements included gusset plates, pins, tension and compression members, truss chord box members subject to bending, floor beams, and stringers. The structural feasibility study evaluated the addition of an external sidewalk to allow pedestrian access across the bridge, which has a narrow 24.5-foot roadway. Load rating and feasibility analysis included the use of AASHTOWare Bridge Rating software and the creation of a 3D computer model using Midas Civil finite element analysis software. Ben has remained involved in the rehabilitation project through preliminary and final design as a Senior Structural Engineer providing technical expertise and review of truss strengthening, floor system replacement, and cantilever sidewalk development.
12/11 – 01/13	Saugus Drawbridge Rehabilitation, Saugus, MA – Massachusetts Bay Transportation Authority Bridge Structural Engineer responsible for analysis and design for this project involving comprehensive modeling, ratings analysis of as inspected conditions, real time structural monitoring, and strengthening of an existing pier compromised by extensive structural deterioration. Responsibilities included development of load rating methods to determine existing substructure capacity and design of an interim strengthening concept including a temporary pier to allow the bridge to remain in service at full capacity until a comprehensive replacement project can be undertaken. Temporary pier design included an integrated fender design that incorporated energy absorbing elements to provide adequate protection of the existing pier in a narrow footprint and in an area of poor soil conditions. As a sub-consultant on this project, it required cooperation of multiple parties to balance existing structural capacities, emphasis on rapid construction, and the need to maintain traffic prior to and during construction of the interim strengthening.
07/16 – 04/17	Rehabilitation of Route 133 Truss Bridge Over Housatonic River, Brookfield, CT - Connecticut DOT Project Engineer responsible for performing load ratings, document reviews, field inspections and compiling reports for this 4-span simply supported Pratt through truss bridge carrying two lanes of traffic over the Housatonic River. Load ratings were performed in accordance with the latest AASHTO LRFR requirements for the as-built, as-inspected, and as-rehabilitated condition of the bridge, including gusset plate evaluations per the latest AASHTO Manual for Bridge Evaluation revisions. Load rating analysis included the use of AASHTOWare Bridge Rating software and the creation of a 3D model using Midas Civil finite element analysis software. Based on the results of the Load Rating analysis, emergency repairs were required at end node gusset plates and Ben led the design effort to develop an expedited solution.
08/17 – 07/19	Rehabilitation of Route 202 Bridge Over Housatonic River, New Milford, CT - Connecticut DOT Team Leader/Structural Engineer responsible for condition inspection of the New Milford truss bridge over the Housatonic River. This single-span, steel, through-truss bridge rehabilitation project addressed deficiencies on the steel truss superstructure and post-tensioned concrete deck and included sidewalk repairs and new bridge rail. The project included inspection, load rating, preliminary and final design as well as environmental permitting and public involvement. Ben provided technical oversight and peer review of the truss load rating procedures with the use of AASHTOWare as well as the structural repair details developed from the inspection information.
02/19 – 12/22	Brorein Street Bascule Bridge Rehabilitation, Tampa, FL – City of Tampa Structural Engineer responsible for design services, including a load rating analysis, for the rehabilitation of the movable span of the Brorein Street bascule bridge over the Hillsborough River in downtown Tampa, Florida. The project included widening of the approach spans and the bascule leaves to provide a 10-foot shared use path on each side.

16. Staff Experience:

Firm Employed by	Hardesty & Hanover		
Name	Steven Harlacker, PE, SE	Years of relevant experience with this employer	26
Title	Movable Bridge Structural Engineer	Years of relevant experience with other employer(s)	0

Degree(s) / Years / Specialization			B.S. / 1996 / Civil Engineering
Active registration number / state / expiration date			Professional Engineer: 0037057 / LA / 09/30/2024
Year registered	2012	Discipline	Structural and Civil Engineering
Contract role(s) / brief description of responsibilities			Bridge Analysis/Load Rating Engineer – Meets MPR 5

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage," "designed girders," "designed intersection," etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
02/19 – 12/22	Brorein Street Bascule Bridge Rehabilitation, Tampa, FL – City of Tampa **Structural Engineer** responsible for design services, including a **load rating analysis**, for the rehabilitation of the movable span of the Brorein Street bascule bridge over the Hillsborough River in downtown Tampa, Florida. The project included widening of the approach spans and the bascule leaves to provide a 10-foot shared use path on each side.
01/15 – 06/20	Eastbound I-84 Bridge Rehabilitation, Hartford, CT – Connecticut DOT **Project Manager** responsible managing the preliminary and final design services for a bridge and roadway rehabilitation featuring Bridge 1765, a 10-span steel multi-girder structure with pin and hanger supported spans carrying four travel lanes of Interstate I-84 through downtown. Scope included deck repair, membrane, overlay, deck joint replacement, header replacement, expansion bearing replacement, bearing keeper construction partial structural painting, structural steel repairs, repairs to concrete substructure, parapet modification and repair, drainage repairs, and lighting repair. Performed complete LRFR **load ratings** in compliance with the AASHTO Manual for Bridge Evaluation, using AASHTOWare Bridge Rating Software.
05/16 – 06/18	Route 133 Truss Bridge over Housatonic River Rehabilitation, Brookfield, CT – Connecticut DOT **Project Manager** managed the preliminary and final design engineering services. Preliminary design work included a structural feasibility study of alternatives to increase roadway vertical clearance to truss bracing elements as well as developing bridge rehabilitative repair designs. The rehabilitation included partial and full depth patching of the bridge deck, replacement of bridge deck joints, deck drainage modifications, and replacement of the bridge parapets. Scope included calculating LRFR **load ratings** of the as-built, as-inspected, and as-rehabilitated conditions using Midas Civil software in compliance with ConnDOT and AASHTO Manual for Bridge Evaluation requirements.
09/17 – Present	Bridge No. 901 US Route 202/Route 67 over the Housatonic River, New Milford, CT – Connecticut DOT **Project Manager** for the rehabilitation **load rating** of the single span 325-foot-long arched truss. The 13-panel modified Parker through truss was constructed in 1953. It carries 2 lanes of traffic and includes a sidewalk cantilevered off the north truss. The rehabilitation includes deck repairs, steel truss member repairs and anchoring the superstructure to the substructure for lateral loading.

12/11 – 05/12	Saugus Drawbridge Rehabilitation, Saugus, MA – Massachusetts Bay Transportation Authority Project Engineer/QC Engineer responsible for the analysis and design supervision for this project involving comprehensive modeling, ratings analysis of as-inspected conditions, real-time structural monitoring, and resultant strengthening of an existing pier compromised by extensive structural deterioration. Responsibilities included development of load rating methods to determine existing substructure capacity and design of an interim strengthening concept which included a temporary pier to allow the bridge to remain in service at full capacity until a comprehensive replacement project was undertaken.
05/17 – 09/19	Stevenson Dam Bridge Route 34 Over Housatonic, Monroe/Oxford, CT – Connecticut DOT Project Manager for design of the new Route 34 bridge over the Housatonic River. Coordinated with highway team subconsultant to develop and evaluate alignment and structure type alternatives. The initial phase included the computation of bridge load ratings for AASHTO design vehicles and the State of Connecticut Legal and Permit Vehicles to determine the existing capacity and sufficiency of the bridge. Load ratings were performed following AASHTO Manual For Bridge Evaluation and CTDOT Load Rating Manual requirements with the use of AASHTOWare. Worked with CTDOT to determine the appropriate load posting for the structure. Supplemental computations were performed to assess the ability to support emergency vehicles owned by the Monroe and Oxford Fire Departments. Developed an operating protocol to allow safe passage of the vehicles under specific traffic conditions and at specific positions on the bridge deck.
04/07 – 07/08	Load Ratings and Scour Evaluations for the Woods Memorial Bridge, Boston, MA – Mass. Dept. of Conservation & Recreation Project Engineer for concept development, design team management, and design of the rehabilitation of this formerly movable bridge, which was locked into the closed position. Design included lock bar removal and replacement with a supplementary restraint system to eliminate bridge bounce under live load. New live load bearings and repairs to the supporting structure were also designed.
11/14 – 06/20	Rehabilitation of the Aetna Viaduct, Phase II, Hartford, CT – Connecticut DOT Project Manager responsible for the development of repair concepts, economic and feasibility evaluations, and structural rehabilitation of this vital, high-volume series of bridges carrying I-84 over Amtrak, CT Fastrak busway, parking areas, and local streets. The rehabilitation included deck & deck joint rehabilitation, structural steel rehabilitation, bearing replacement, parapet safety upgrades, illumination, IMS facilities, and concrete substructure repairs. Developed the project scope; managed the design, managed the project schedule and budget; and compliance with H&H's standards for Quality Management and client standards. H&H prepared rehabilitation plans for bearing replacement, repairs to over 125 concrete substructure units, and repairs to nearly 300 steel superstructure members. Also included was the replacement of the median barrier along with the adjacent bridge deck; modifications to the left and right parapet along the entire length of the viaduct structure; highway illumination and IMS facilities. This series of structures, which governs the load capacity of the I-84 corridor through Hartford, was also load rated using LRFR load rating methods and AASHTOWare BrDR software. The load rating computations included consideration and reporting for steel cap girders, chorded girders, hunched girders, variable deck overhang segments, pin & hanger spans, and deficient beam end areas. In total, Hardesty & Hanover performed structural load ratings for 40 transverse steel pier cap girders and all members within 129 multi-girder spans, including complete accounting of documented deterioration remaining on un-repaired members at the completion of the rehabilitation.

16. Staff Experience:

	Firm Employed by	Hardesty & Hanover		
	Name	Linh-Thien Kim, EI	Years of relevant experience with this employer	2
	Title	Civil Engineer Intern	Years of relevant experience with other employer(s)	2

Degree(s) / Years / Specialization			BS / 2017 / Civil Engineering
Active registration number / state / expiration date			Engineer Intern: 0033538 / LA / 3/31/2024 Safety Inspection of In-Service Bridges, NHI # 130055 NHI Course 130092. Fundamentals of LRFR and Applications of LRFR For Bridge Superstructures
Year registered	2017	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			Document & Field Data Retrieval Engineer Intern

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).
07/20 – Present	Almonaster Avenue Railroad Bascule Bridge over the Industrial Canal Rehabilitation, New Orleans, LA – Port of New Orleans Movable Bridge Engineer Intern contributing to the bridge assessment, complete rehabilitative engineering design, and construction inspection services required for the partial replacement of the Almonaster Avenue Bridge, a movable Strauss-heel trunnion bridge. H&H's 2019 assessment revealed that improvements to the electrical and mechanical systems, superstructure, and counterweight were required to return this bridge to its full operating capability. All design work is according to Louisiana DOTD Standard and Specifications and reviewed by LADOTD.
07/20 – Present	SR 605 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Movable Bridge Engineer Intern performed the bridge load rating for movable bridge and fixed bridge approaches. Contributing to the civil design for full rehabilitation of SR 605 double-leaf bascule bridge. Scope of work includes inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrDR load rating software.
08/20 - Present	Lapalco Boulevard Movable Bridge over Harvey Canal, Westwego, LA – Jefferson Parish DPW Civil Engineer Intern for the pre-design inspection, the rehabilitation and widening of the existing four-lane Lapalco Boulevard to provide a facility carrying three lanes of traffic in each direction, and the design of a new three-lane double bascule movable bridge crossing of Harvey Canal. project includes rehabilitation to the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane. The scope of services also includes the design of a new bridge to be constructed as an independent structure immediately adjacent and north of the existing bridge with a new operator house. Load rating was performed using AASHTOWare BrDR load rating software. All design work is according to Louisiana DOTD Standard and Specifications and reviewed by LADOTD.

06/22 - Present	SR 609 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT **Movable Bridge Senior Structural Engineer** for full rehabilitation of SR 609 bascule bridge, as a task-order to the IDIQ Master Bridge Contract which included developing standard and special bridge services, statewide for MDOT. Scope of work included inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. **Load rating** was performed using AASHTOWare BrR load rating software. The project is currently in the construction phase.
09/21 – 07/22	Tennessee Bridge Inspection and Load Rating, Decatur, AL – Norfolk Southern Corporation **Structural Engineer Intern** provided inspection, **load rating**, and engineering design services under the Systemwide Engineering and Design Services contract. The Steel repairs at Gulf Division MP 362.60-A Decatur, AL task was awarded to Hardesty & Hanover through this contract. The task involved the performance of an on-site inspection, the preparation of **load rating** calculations and the development of repair plans for the structure in accordance with the scope of work. The structure consists of three superstructure types: vertical lift span, deck plate girder span and seven through truss spans.
11/20 – Present	Annual Inspection of Almonaster Railroad Bascule Bridge over the Industrial Canal, New Orleans, LA – Port of New Orleans **Movable Bridge Engineer Intern** for the annual inspection of the Almonaster Avenue Railroad Bascule, which involves a structural inspection of the fracture critical steel, primary and secondary steel members, an electrical inspection of the electrical systems and controls, and a mechanical inspection of the machinery.
06/19 – 09/19	Annual Inspection of Seabrook Railroad Bascule Bridge, New Orleans, LA – Port of New Orleans **Movable Bridge Engineer Intern** for the annual inspection of the Seabrook Trunnion Bascule Bridge. This inspection included a structural inspection of the fracture critical steel and primary and secondary steel members, an electrical inspection of the electrical systems and controls, and an inspection of the mechanical systems and machinery.
01/19 - 04/19	H.009498.5: LA 121: Calcasieu River Bridge – LADOTD **Civil Engineer Intern**. Designed and detailed an LG-36 (I-Beam) Concrete Prestressed Girder Bridge using continuous deck spans on a horizontal curve with a 5% slope. The continuous deck spans were 240-foot- long using four 60-foot-long deck spans with a bridge width of 42.5' wide. The superstructure and girders were designed using Bentley's Conspan software and DOTD's Bridge Design Evaluation Manual. The substructure consists of pile bents that were designed using STAAD Modeling software and Excel postprocessing.
05/19 – 07/19	H.003184.5: I-10: Texas State Line - East of Coone Gully – LADOTD **Civil Engineer Intern**. Designed and detailed an LG-36 (I-beam) Concrete Prestressed Girder Bridge using continuous deck spans with a 2.5% slope. The continuous deck spans were 240 and 300 feet long using four 60-long and five 60-long deck spans, respectively. The bridge width was 72.5-foot-wide. Superstructure and girders were designed using Bentley's Conspan software and DOTD's Bridge Design Evaluation Manual. Substructure pile bents were designed using STAAD Modeling software/Excel postprocessing.
06/19 – 06/19	H.012739.6: I-20 MRB At Vicksburg Overlay and Rehabilitation – LADOTD **Civil Engineer Intern**. Worked closely with the Project Engineer to assist in developing quantities and cost estimates for paint striping and barrier movements through phases of the rehabilitation project.
07/19 – 08/19	H.000303.6: Danziger Bridge Rehabilitation – LADOTD **Civil Engineer Intern**. Assisted Project Engineer in calculating joint thermal movement for the new sliding plate and determine if a new sliding plate is suitable. Completed detailing of new change order sheets for the new joint sliding plates for the project.

16. Staff Experience:

Firm Employed by	Hardesty & Hanover		
Name	Anwer Kaimakchi, PhD EI	Years of relevant experience with this employer	2
Title	Bridge Designer	Years of relevant experience with other employer(s)	6

Degree(s) / Years / Specialization	PhD / Civil Engineering / 2021 / Florida State University M.S. / Civil Engineering / 2017 / Florida State University B.S. / Civil Engineering / 2013 / Al-Nahrain University
Active registration number / state / expiration date	Engineer In Training: 60408 / TX / 09/20/2025
Year registered: 2017 / Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities	Bridge Analysis/Load Rating Engineer Intern

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).
02/22 - Present	Replacement of Smith Point Bridge (CR 46) Over Narrow Bay – Suffolk County, NY – Suffolk County DPW **Bridge Designer** for the 1,812' long Smith Point Bridge, the new bridge will replace the existing bascule bridge with a high-level fixed bridge on a westerly alignment that touched down in an underutilized area of Smith Point County Park. The new bridge consists of prestressed concrete girders with typical span lengths of 165'. The original bridge was designed by Hardesty & Hanover in the 1950s and was reaching the end of its service life due to the harsh oceanfront environment at this site The bridge serves as the sole access route to the eastern end of Fire Island and is the route to Smith Point County Park as well as Fire Island National Seashore. Anwer is developing three-dimensional LARSA model to determine the dead and transient loads of the bridge, determining the size and number of piles, and pile cap thickness by creating FBPier models for all piers. In addition, Anwer is developing the reinforcement detailing for pile and pile cap. Anwer is checking that the pier columns are adequate for strength limit state using XTRACT program.
04/22 – 09/22	I-82 Columbia River Bridge at Umatilla, Umatilla, OR – Washington State DOT **Bridge Designer** for the **Load Rating** of the I-82 westbound structure that is a cast-in-place balanced cantilever segmental bridge that opened to traffic in 1988. The bridge has eight spans and a length of 3,365'. The bridge features two approximately 660' spans crossing the Columbia River. These two spans are supported by fixed, twin-walled columns. These columns provided overturning stability during cantilever construction. In service, the twin-wall piers provide increased longitudinal flexibility to accommodate creep, shrinkage, and thermal movements. The superstructure of the I-82 westbound bridge is a variable depth box girder with a width of approximately 51'. The bridge carries two 12' lanes, shoulders, and a barrier separating the pedestrian lane. Hardesty & Hanover completed an in-depth **load rating** of the I-82 westbound bridge. Anwer was involved in the three-dimensional model using CSiBridge software including construction stages and calculated the time-dependent properties of the concrete. Anwer reviewed flexural and shear capacities of the concrete segments.

01/22 – 04/22	Garcon Point Bridge, Santa Rosa County, FL – Florida DOT Structural Insector for the Garcon Point Bridge. This 3.5-mile-long precast segmental bridge has 140' typical spans and a 225' main span over the Intracoastal Waterway. The 140' spans were erected span-by-span and the 225' span was erected balanced cantilever. The high-level piers were precast and post-tensioned. Anwer's most recently participated in the vibration testing of all external tendons to develop a benchmark that will be used to plan future maintenance activities if required.
10/22 - Present	Sunshine Skway Bridge, Tampa, FL – Florida DOT Structural Inspector for the Sunshine Skyway Bridge carrying I-275 over Tampa Bay, the Sunshine Skyway is a 21,878' long bridge with 8,860' of precast segmental structures. The 4,000' long precast segmental main span unit which includes a 1,200' long center cable-stayed span and was built in balanced cantilever. The high-level approach spans are 135' in length and were built in span-by-span with external tendons. Anwer recently participated in the bi-annual walk-through visual inspection as part of Hardesty & Hanover's Asset Management contract for the Sunshine Skyway Bridge Corridor.
12/21 - Present	Gold Star Memorial Bridge on Interstate Route 95, New London, CT – Connecticut DOT Bridge Designer for the Gold Star Bridges, consisting of two separate structures carrying I-95 and US Route 1 north and south bound over the Thames River between Groton and New London, CT are the largest bridges in the State and provide a vital transportation link through all New England. Hardesty & Hanover is performed an in-depth load rating of the I-95 Northbound structure. This structure was original constructed in 1943, with a major rehabilitation completed in 1973. The structure consists of a combination of original girder spans, original approach trusses, and a reconstructed main channel span truss all topped with a reconstructed floor system. The main channel span is a three-span continuous welded box truss with a suspended center span. Anwer conducted load rating analyses for girders on northbound original girder spans where he modeled northbound original girder spans (9 to 21, 35 and 36) using Midas Civil program to calculate loads. Anwer calculated and checked the flexural and shear capacities of girders on the northbound original girder spans following AASHTO LRFD design specifications.
08/21 – 12/21	Roosevelt Bridge Emergency Post-Tensioning Repairs, Stuart, FL – Florida DOT Bridge Designer for the emergency repairs to the Roosevelt Bridge in Stuart, Florida. The twin, 4,500' long post-tensioned segmental bridges carry US Highway 1 over the St. Lucie River. During a routine biannual inspection, inspectors found significant cracking, leading to the closing of both the northbound and southbound bridges was discovered by the Florida Department of Transportation. The cracking was the result of post-tensioning tendon failures as a result of excessive corrosion. The engineering team was mobilized the following day under emergency conditions. Within 5 days, the bridges were inspected and analyzed, such that the northbound bridge could reopen to reduced two-way traffic. Two months later the final analysis, design and repair plans were completed. Using an innovative CMGC contract, repairs were made, and the bridges opened to traffic. The work included partial deconstruction and then reconstruction of the segmental bridge and the addition of new post-tensioning tendons.

16. Staff Experience:

Firm Employed by	Hardesty & Hanover		
Name	Timothy Noles, PE	Years of relevant experience with this employer	38
Title	Bridge Lead Structural Engineer	Years of relevant experience with other employer(s)	0

Degree(s) / Years / Specialization			BS / 1984 / Civil Engineering
Active registration number / state / expiration date			Professional Engineer: 31675 / LA / 9/30/2023
Year registered	1989	Discipline	Structural Engineering
Contract role(s) / brief description of responsibilities			Quality Control Load Rating Engineer Meets MPR 4

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage," "designed girders," "designed intersection," etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
08/08 – 08/13	Judge Seeber Vertical Lift Bridge, New Orleans, LA - Louisiana DOTD Princial-in-Charge overseeing the task order involving the replacement of the vertical life bridge's entire electrical system, counterweight ropes, counterweight guides, and span locks in addition to miscellaneous structural repairs. Design work for this eligible for the National Register of Historic Places bridge was completed within three months to meet the FEMA funding deadline. The electrical system was replaced in-kind using secondary resistance control operated with a drum switch in acLADOTD preference.
06/08 – 08/18	H.002798.6; Bayou Teche Movable Bridge at Oaklawn Rehabilitation, St. Mary Parish, LA - Louisiana DOTD Principal-in-Charge responsible for engineering design and post-design services for the new Bayou Teche Bridge at Oaklawn project. Built in 1941 to carry LA Route 323 over Bayou Teche, the original historically significant bridge was replaced with a new hydraulically operated swing bridge. H&H provided the electrical design for the bascule bridge in line with LADOTD's design requirements and standard design details and coordinated closely with the other design disciplines to assure success. All design deliverables were made in accordance with project schedule. Due to permitting issues, the design was placed on hold for several years extending the schedule.
05/17– Present	US 17 Swing Bridge over the Perquimans River Design/Build, Perquimans County, NC - North Carolina DOT Principal-in-Charge responsible for preliminary and final engineering analysis and design services to replace the existing swing bridge over the Perquimans River with a new, off-line bridge. H&H's responsibilities include the complete design of the new swing span, including structural, mechanical, electrical, and geotechnical engineering. The swing span structure consists of a center-pivot Warren through truss supporting the concrete deck. Although similar in appearance to the existing swing span, the new span will improve geometrics, increase load carrying capacity and vertical clearance, and include all the conveniences of a modern operational system.
07/12 – 10/18	Hillsborough Avenue Vertical Lift Bridge over Hillsborough River, Tampa, FL – Florida DOT Principal-in-Charge of the rehabilitation design services which included preparation of mechanical and electrical plans to repair and rehabilitate this historic span-driven vertical lift bridge. The rehabilitation included sheave replacement, wire rope replacement, span lock repairs, and electrical system upgrades.

03/18 – Present	SR 609 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Technical Lead / Quality Control for the full rehabilitation of SR 609 bascule bridge, as a task-order to the IDIQ Master Bridge Contract which includes developing standard and special bridge services, statewide for MDOT. Scope of work includes inspection and rehabilitation of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrR load rating software. The project is currently in the construction phase.
01/19 – Present	SR 605 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS - Mississippi DOT Technical Lead / Quality Control for the assessment, design, plan review, and quality control of SR 605 double-leaf bascule bridge, as a task-order to the IDIQ Master Bridge Contract which includes developing standard and special bridge services, statewide for MDOT. Work includes inspection and rehabilitation of structural, mechanical, and electrical bridge components, roadway approaches and development of maintenance and repair plans. All designs are in accordance with AASHTO, FHWA and MDOT guidelines and specifications. Load rating was performed using AASHTOWare BrR load rating software.
01/20 – Present	Almonaster Avenue Railroad Bridge over the Industrial Canal Rehabilitation, New Orleans, LA – Port of New Orleans Technical Lead for the bridge assessment, complete rehabilitative engineering design, and construction inspection services required for the partial replacement of the Almonaster Avenue Bridge, a movable Strauss-heel trunnion bridge. H&H's 2019 assessment of the circa-1920, eligible for the National Register of Historical Places bridge revealed that improvements to the electrical and mechanical systems, superstructure, and counterweight were required to return this bridge to its full operating capability. Although the existing substructure could remain, modifications were deemed necessary to accommodate the rehabilitated superstructure. H&H developed necessary design plans to replace the span drive and span lock machinery, operating strut, guide assembly, live load bearings, counterweight trunnion pin, and bushing. All design work is according to Louisiana DOTD Standard and Specifications and reviewed by LADOTD.
05/12 – 02/18	Main Street Bridge (US 1) over the St. Johns River, Jacksonville, FL – Florida DOT Technical Lead / Quality Control of $10 million bridge rehabilitation project involving the structural, electrical, and mechanical rehabilitation of a 368-foot vertical lift span. Electrical work included replacement of the electrical system including new DC span motors/flux vector drives, new relay logic, and PLC. Mechanical rehabilitation included new operating drum assemblies/open gearing, ropes, and tensioning device.
06/06 – 06/11	Mathews Bridge (SR115) Over St. Johns River, Jacksonville, FL – Florida DOT Principal-in-Charge / Lead Design Engineer of $15 million deck replacement for the 810-foot suspended span on the main channel span cantilevered truss. Original open deck steel grating was replaced with reinforced concrete Exodermic deck. Roadway stringers and railings were replaced, and truss and floorbeam strengthening was provided with new deck system meeting LRFR requirements. 3-D modeling of truss was accomplished to determine multiple load cases for load rating. Construction time to replace deck was 90 days. Additional repairs included floorbeam web repairs, bridge painting, utility relocation, and finger expansion joint replacement. Complex MOT was required to ensure commuter traffic was uninterrupted.
02/19 – 12/22	Brorein Street Bascule Bridge Rehabilitation, Tampa, FL – City of Tampa Technical Lead / Quality Control responsible for design services, including a load rating analysis, for the rehabilitation of the movable span of the Brorein Street bascule bridge over the Hillsborough River in downtown Tampa, Florida. The project included widening of the approach spans and the bascule leaves to provide a 10-foot shared use path on each side.

16. Staff Experience:

	Firm Employed by	Hardesty & Hanover		
	Name	John Corven, PE	Years of relevant experience with this employer	2
	Title	Civil Designer	Years of relevant experience with other employer(s)	40

Degree(s) / Years / Specialization			B.S. / 1978 / Civil Engineering / University of Florida M.S./1979 / Engineering / University of Florida
Active registration number / state / expiration date			Professional Engineer: 38309 / Louisiana / 03/31/2024
Year registered	2013	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			Quality Control Load Rating Engineer Meets MPR 4

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage," "designed girders," "designed intersection," etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
06/20 – 07/22	Roosevelt Bridge Emergency Post-Tensioning Repairs, Stuart, FL – Florida DOT Chief Engineer for the emergency repairs to the Roosevelt Bridge in Stuart, Florida. The twin, 4,500' long post-tensioned segmental bridges carry US Highway 1 over the St. Lucie River. During a routine biannual inspection, inspectors found significant cracking, leading to the closing of both the northbound and southbound bridges was discovered on June 16, 2020 by the Florida Department of Transportation. The cracking was the result of post-tensioning tendon failures as a result of excessive corrosion. The engineering team was mobilized the following day under emergency conditions. Within 5 days, the bridges were inspected and analyzed, such that the northbound bridge could reopen to reduced two-way traffic. Two months later the final analysis, design and repair plans were completed. Using an innovative CMGC contract, repairs were made, and the bridges opened to traffic in November of 2020. The work included partial deconstruction and then reconstruction of the segmental bridge and the addition of new post-tensioning tendons.
06/12 – 12/18	Wmata Segmental Bridges – Inspections and Repairs, Washington, DC – Washington Metropolitan Area Transit Authority Project Manager / Lead of the engineering team responsible for the design of the aerial structures. The inspection of segmental bridges J2e, E6f, and F10a. Post-tensioning corrosion was observed during a routine inspection on WMATA's precast segmental bridges. Performed an inspection, an evaluation of the post-tensioning systems and a load rating of seven segmental bridges. Project tasks included inspection, remediation plan, and load rating.
07/11 – 09/14	Plymouth Avenue Bridge Post-Tensioning Repair, Minneapolis, MN – City of Minneapolis Project Manager for the inspection of the 934' bridge consisting of two connected box girders with span lengths from 120' to 260'. The total width is 75'-6" and the box girders vary in depth from 10' to 13'. Severe post-tensioning corrosion was found during a routine inspection. Assessed the condition of the post-tensioning system and the integrity of the bridge, analyzed the stresses in the bridge, and developed construction documents to restore the integrity of the bridge. During construction, provided on-site technical assistance. The final phase of the project included a load rating of the bridge.

03/01 – 05/05	New Directions for Florida Post-Tensioned Bridges, FL – Florida DOT **Project Manager and Principal Author** who worked with the Central Office of the Florida DOT, developed guidelines for **load rating** post-tensioned bridges. Guidelines were developed first for segmental bridges and then extended to all prestressed concrete bridges. John helped prepare **load rating analyses** to calibrate load and resistance factors appropriate to operating and inventory **load ratings for segmental bridges.**
1/91-12/94	Natchez Trace parkway Arches, Franklin, TN – National Park Service/Federal Highway Administration **Project Manager and Principal Designer** for this award winning concrete arch bridge located to the west of Franklin, TN. The bridge features two long-span concrete arches that were the first in the United States built using precast segmental construction. The arches, with a maximum span length of 582', were built using temporary supporting cable stays. The bridge superstructure was also precast segmental concrete. Superstructure construction was by the balanced cantilever method using ground-based cranes. John managed the precast segmental design team and served as the principal designer. In 2020, John oversaw the **load rating** of the precast superstructure and precast arches.
3/01-9/02	Moakley Bridge – Inspection and Repair, Boston, MA – Massachusetts Department of Transportation **Lead Structural Engineer** provided specialized inspections of bridge cracking as it relates to the post-tensioning system. Moakley Bridge is a 798' long bridge that carries North Ave over the Fort Point Channel. The maximum span length is 236' and the deck is 98'-9" wide. The superstructure consists of haunched precast box beams made continuous with post-tensioning. The inspection reports and analyses were used to make recommendations for remediation. Later work provided review of more recent inspection reports and **load ratings.**
5/01-12/05	New Directions for Florida Post-Tensioned Bridges, Florida – Florida DOT **Project Manager / Principal Author** worked with the Central Office of the Florida DOT, developed guidelines for **load rating** post-tensioned bridges. Guidelines were developed first for segmental bridges and then extended to all prestressed concrete bridges. John prepared **load rating analyses** to calibrate load and resistance factors appropriate to operating and inventory **load ratings for segmental bridges.**
6/02-12/04	I-75 / SR 826 Ramp A Widening, Miami, FL – Florida DOT **Project Manager / Principal Designer** for the widening of this 3000' long precast segmental bridge. This project represents the first segmental bridge to be widened in America. The 17-year-old single-lane bridge was widened to accommodate a second lane of traffic. Prepared the final design for the widening. Time-dependent construction analyses were performed to determine the current state of stress in the bridge and to study the effects of additional post-tensioning to strengthen the bridge. Three-dimensional analyses of the complete bridge were performed to determine the effect of the sequence of bridge widening transversely and the effects of lateral shifts in traffic required to maintain traffic throughout the widening.
05/21 - Present	I-395 Segmental Bridges, Miami, FL – Florida DOT **Chief Engineer** for the design of five new precast segmental bridges that are a part of the SR 836/I-95/I-395 corridor improvements. This design-build project is being constructed by the Archer Western-De Moya Joint Venture. The overall construction value of the project is $800 million, and the segmental bridges have a deck area of 700,000 square feet (approximately $200 million). Directed the development of the bridge layouts, cross sections, and construction methodology. The work also includes oversite of the final design, shop drawings, and construction engineering.

17. Firm Experience:

Firm name	Hardesty & Hanover, LLC			Past Performance Evaluation Discipline(s)*	Bridge
Project name	Lapalco Bridge Over Harvey Canal			Firm responsibility (prime or sub?)	Prime
Project number	H.004396	Owner's name	Jefferson Parish		
Project location	Jefferson Parish, LA			Owner's Project Manager	Mark Drewes
Owner's address, phone, email	1211 Elmwood Park Blvd., Ste. 802, Jefferson, LA 70123 / phone: 504.736.6500 / mdrewes@jeffparish.net				
Services commenced by this firm (mm/yy)	01/18	Total consultant contract cost ($1,000's)			$7,000
Services completed by this firm (mm/yy)	On-going	Cost of consultant services provided by this firm ($1,000's)			$4,250

H&H is designing this new bascule bridge, parallel to the existing bridge, which upgrades its capacity to six lanes of vehicular traffic. The existing bridge will also be fully rehabilitated to function with the new bridge. The proposed improvement is to reconfigure the existing four-lane (two in each direction) Lapalco Boulevard crossing at Harvey Canal to provide three travel lanes in each direction and one bidirectional bike/pedestrian lane. This increase from the existing four lanes eases traffic congestion and enhances the area's hurricane evacuation route network. The new bridge will provide a 150-foot-wide navigation channel, a 45-foot vertical navigation clearance, and is designed to match the existing bridge.

Lapalco Boulevard in the vicinity of the bridge is classified as an urban arterial roadway and serves as a significant transportation and evacuation route. In addition to design of the new bridge all roadway approaches and intersections in the vicinity of the bridge will be redesigned to accommodate the new structure. The existing bridge will be modified to carry a pedestrian and bicycle path.

The project is being designed to LADOTD Standards and Specifications for Roads and Bridges, the Louisiana DOTD Bridge Design Manuals and AASHTO, The Manual for Bridge Evaluations, and reviewed by LADOTD. Scope of work includes thorough inspection of the existing bridge, survey and geotechnical engineering as well us updating the existing Environmental Assessment. Design services include development of Bridge Design Report; roadway design and lighting; utility coordination; load rating for the existing and new fixed and movable structures; structural design of foundation and approach spans; the structural, mechanical and electrical design of the bascule portion; as well as permitting.

Scope of Work Relevant to the contract:

- LOAD RATING CALCULATIONS & ANALYSIS
- REHABILITATION/REPAIR DESIGN
- LADOTD STANDARDS & SPECIFICATIONS
- MOVABLE BRIDGE LOAD RATING
- Use of AASHTOWare BrDR Bridge Rating Software

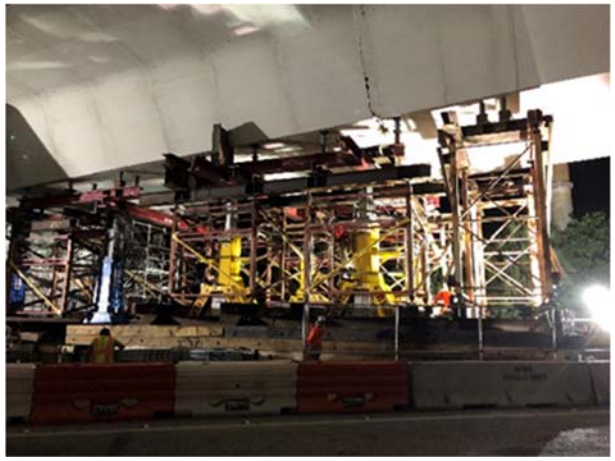
Staff Used in Proposal: Babak Naghavi, PE; Erik Diaz, PE; Amy Robards, PE; Frederick Wetekamm, PE; Linh Kim, EI; Dalton Hunt, EI; Tim Noles, PE

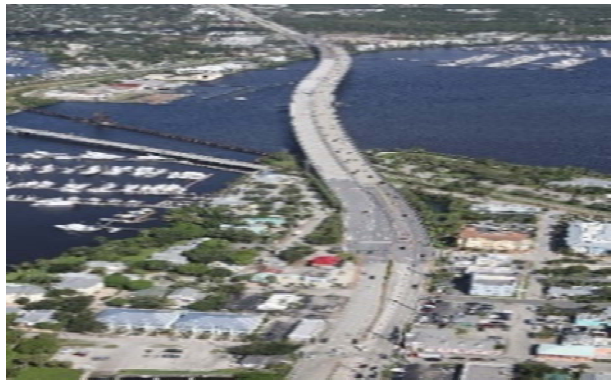
17. Firm Experience:

Firm name	Hardesty & Hanover, LLC			Past Performance Evaluation Discipline(s)*	Bridge
Project name	Roosevelt Bridge Maintenance			Firm responsibility (prime or sub?)	Sub
Project number	N/A	Owner's name	FDOT		
Project location	Stuart, FL			Owner's Project Manager	Katherine Kehres, PE, CPM
Owner's address, phone, email	605 Suwannee Street, Tallahassee, FL 32399 / 772-429-4889 / Katherine.Kehres@dot.state.fl.us				
Services commenced by this firm (mm/yy)		06/20	Total consultant contract cost ($1,000's)		$700
Services completed by this firm (mm/yy)		07/22	Cost of consultant services provided by this firm ($1,000's)		$400

The Roosevelt Bridge carries U.S. Route 1 (SR 5) over the St. Lucie River, in Stuart, Florida. This vital link along south Florida's most traveled highway consisting of twin structures, the northbound bridge and southbound bridge. The bridge was constructed in the mid-1990s. The northbound and southbound structures are both precast segmental bridges, built using the balanced cantilever method of construction. The northbound bridge has a length 4,565 feet and the southbound bridge has a length of 4,487 feet. Each of the bridge superstructures consists of a single-cell, precast segmental box girder with a width of 60.5 feet.

During a routine biannual inspection period, and based upon feedback from local partners, FDOT inspectors found cracks in the closure joint in Span 1 of the southbound bridge. This span is made continuous through the closure joint by ten, 15-strand post-tensioning tendons. Additional inspections revealed that one half of the bottom slab tendons had completely failed as a result of excessive corrosion. Within 24 hours of finding the cracks, FDOT mobilized H&H to repair the bridge. The work included bridge inspection, load rating calculations and analysis, repair plans, and engineering support during construction.





Staff Used in Proposal: *Dennis Gowins, PE; John Corven, PE; Anwer Kaimakchi, EI*

Scope of Work Relevant to the contract:

- COMPLEX BRIDGE LOAD RATING CALCULATIONS AND ANALYSIS
- PRECAST SEGMENTAL BRIDGE REHABILITATION/REPAIR DESIGN
- SEGMENTAL BRIDGE LOAD RATING AND ANALYSIS

17. Firm Experience:

Firm name	Hardesty & Hanover, LLC			Past Performance Evaluation Discipline(s)*	Bridge
Project name	Mathews Bridge (SR 115) over the St. Johns River			Firm responsibility (prime or sub?)	Prime
Project number	N/A	Owner's name	FDOT		
Project location	Jacksonville, FL			Owner's Project Manager	Renee Brinkley
Owner's address, phone, email	2250 Irene Street, Jacksonville, FL 32236 / 386.961.7392 / renee.brinkley@dot.state.fl.us				
Services commenced by this firm (mm/yy)	06/07	Total consultant contract cost ($1,000's)	$15,000		
Services completed by this firm (mm/yy)	06/11	Cost of consultant services provided by this firm ($1,000's)	$2,000		

The Mathews Bridge is one of the major crossings over the St. Johns River in Jacksonville, Florida was constructed in 1953. It is 7,375 feet in total length, with 59 approach spans consisting of deep plate girders and 6 channel spans consisting of a cantilevered through truss span structure carrying 4 lanes of traffic.

Hardesty & Hanover provided an emergency damage assessment, engineering analysis, rehabilitative design, and post-design services for the Mathews Bridge under two separate contracts. In September 2013, a vessel navigating the St. Johns River struck and severed the bottom chord of the main span truss and the floor system lateral bracing members, and buckled two floorbeams. The span might have failed if it were not for the redundancy of the new Exodermic deck that was provided in 2007. H&H's expertise in truss design and repair was vital in designing the temporary chord, tension jacking system, and deck strong back that maintained the integrity of the truss while the existing chord was removed and replaced, and the truss geometry and load back were reinstated into the bottom chord. The design was completed over a 5-day period and construction completed within the 30-day requirement.

In 2007, H&H conducted a structural load rating (LRFR) of the channel through truss structure using 3D STAAD analysis, provided detailed design, and prepared contract plans and specifications for the rehabilitation of the through truss channel spans. The rehabilitation consisted of the replacement of the existing open grid steel deck with a new Exodermic deck consisting of a 5-inch lightweight concrete slab supported by a steel grid deck spanning over new stringers. The new Exodermic deck provided a solid deck system that provides additional structural capacity of the existing floorbeams with a composite design, improved corrosion protection of the superstructure and a safer riding surface. Stringer replacement, repairs to the floorbeams, strengthening of truss top chord members, and replacement of the curb and median barriers were accomplished in order to improve the bridge to meet the current AASHTO LRFD Bridge Design Specifications. Post design services were also provided.

Staff Used in Proposal: Timothy Noles, PE; Roberto Viciedo, PE

Scope of Work Relevant to the contract:

- LOAD RATING CALCULATIONS & ANALYSIS
- BRIDGE REHABILITATION/REPAIR DESIGN
- AASHTO MANUAL FOR BRIDGE DESIGN
- TRUSS BRIDGE LOAD RATING AND ANALYSIS

17. Firm Experience:

Firm name	Hardesty & Hanover, LLC			Past Performance Evaluation Discipline(s)*	Bridge
Project name	Brorein Street Bascule Bridge Rehabilitation			Firm responsibility (prime or sub?)	Sub
Project number	N/A	Owner's name	City of Tampa		
Project location	Tampa, FL			Owner's Project Manager	Altafhusen Bukhari
Owner's address, phone, email	306 E. Jackson Street, 4th Floor, Tampa, FL 33602 / 813.274.7522 / altafhusen.bukhari@tampagov.net				
Services commenced by this firm (mm/yy)	03/18	Total consultant contract cost ($1,000's)			$1,260
Services completed by this firm (mm/yy)	12/22	Cost of consultant services provided by this firm ($1,000's)			$493

Hardesty & Hanover provided design services, including a load rating analysis, for the rehabilitation of the movable span of the Brorein Street bascule bridge over the Hillsborough River in downtown Tampa, Florida.

The existing double-leaf bascule bridge carried four lanes of one-way traffic out of downtown Tampa. There were three-foot sidewalks on each side and no shoulders or bicycle lanes. In addition to mechanical and electrical repairs and repairs to the structural steel of the bascule leaves, the project widened the approach spans and the bascule leaves to provide a 10-foot shared use path on each side. To accommodate the SUP, the number of lanes was reduced to three and new TL-3 traffic railings were installed between the SUP and the travel lanes. Decorative pedestrian lighting was coordinated with the adjacent Tampa Riverwalk.

Numerous steel members, including the main girders, floorbeams and stringers were repaired and the bascule span was cleaned and painted. New cantilever brackets support the new shared use path and additional steel framing was added to accommodate the TL-3 traffic railings. New sidewalk planking and pedestrian handrails are used for the shared use path. The pedestrian railing accommodates decorative pedestrian lighting that complement the lighting on the adjacent Tampa Riverwalk. The open steel grid deck and concrete filled grid deck were replaced.

Staff Used in Proposal: James Newberry, PE; Steven Harlacker, PE; Timothy Noles, PE; Robert Viciedo, PE; Ben Hawthorne, PE

Scope of Work Relevant to the contract:

- LOAD RATING CALCULATIONS & ANALYSIS
- REHABILITATION/REPLACEMENT DESIGN
- MOVABLE BRIDGE LOAD RATING AND ANALYSIS

17. Firm Experience:

Firm name	Hardesty & Hanover, LLC	Past Performance Evaluation Discipline(s)*	Bridge
Project name	SR-605 and SR 609 Bascule Bridges - Rehabilitation Designs	Firm responsibility (prime or sub?)	Prime
Project number	N/A	Owner's name	Mississippi DOT
Project location	Ocean Springs, MS	Owner's Project Manager	Scott Westerfield, PE
Owner's address, phone, email	401 North West Street, Jackson, MS 39215 | 601.359.7200 | rwithers@mdot.ms.gov		
Services commenced by this firm (mm/yy)	03/18	Total consultant contract cost ($1,000's)	$3,100
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$3,000

Hardesty & Hanover (H&H) conducted load rating using AASHTOWare, bridge inspections and developed the bridge rehabilitation design plans and specifications for the rehabilitation of the SR 609 and SR 605 bridges under our Mississppi DOT Master Bridge Contract. Rehabilitation plans included structural, mechanical, and electrical bridge components, roadway approaches, improvements to the operator house including HVAC; development of maintenance and repair plans; and preparation of traffic control plans. Other scope items included construction support services during construction, project submittals review, and managing RFIs.

Major structural work included removal of the existing paint system (lead abatement) and repainting all structural steel, replacing the existing grid deck, structural strengthening of the bascule leaves, replacing all high strength connection bolts exhibiting corrosion with mechanically-galvanized high strength bolts (A325), repairing cracks in structural steel, and repairing deck joints.

Major mechanical work included removing and replacing machinery with AASHTO compliant machinery, polishing and re-machining trunnion journals, realigning trunnion bearing, and replacing span locks.

Major electrical work included replacing the emergency generator, motor control center, motor drives, span motors, and brakes. Also, replacing all conduits and wiring, submarine cable and cabinets, and bascule pier navigation lighting.

H&H is currently performing construction phase services and load rating calculations and analysis for the two bridges.

Staff used in this proposal:
Erik Diaz, PE; Linh Kim, EI; Babak Naghavi, PE; Tim Noles, PE; Amy Robards, PE; Rob Vicedo, PE; Fred Wetekamm, PE; Dalton Hunt, EI


SR-605


SR-609

Scope of Work Relevant to the Contract:

- LOAD RATING CALCULATIONS & ANALYSIS
- AASHTO MANUAL FOR BRIDGE EVALUATION
- STRUCTURAL STEEL AND CONCRETE REPAIRS
- APPROACH SLABS - REPAIRS AND/OR REPLACEMENT
- MOVABLE BRIDGE LOAD RATING AND ANALYSIS
- USE OF AASHTOWARE BRDR BRIDGE RATING SOFTWARE

18. Approach and Methodology:

Project Management: This contract involves document retrieval and review, site inspection and evaluation, analysis, and load rating modeling. H&H will implement a proven approach to address these challenges while managing several task orders that may be issued at the same time. Our PM will assign a Project Engineer for each task order based on the type of bridge and complexity of the work. Project Engineers will be supported by lead engineers experienced in all aspects of bridge inspection and load rating. This senior group and the Project Engineer will work with the PM to assign production and QC staff experienced with the specific bridge type such as movable, truss, or segmental. Assigning committed project staff with the relevant expertise and experience to each bridge is the best way to ensure each bridge receives the knowledge and experience needed to achieve project success. The depth of our available technical resources will ensure on time and on the budget delivery of quality final products for all task orders, including when multiple task orders are issued simultaneously.

As the first order of business, H&H will prepare a Project Management Plan (PMP), including project schedule and QA/QC Plan addressing phases of work through delivery. The PMP will be updated as needed. Schedules will depend on the scope of work and level of complexity. An example of a typical schedule for a complex load rating is shown below:

Typical Schedule							
	Task	Months					
		1	2	3	4	5	6
Document Retrieval and Review	1						
Site Bridge Inspection	2						
Analysis, Load Rating & Reports	3						
QA/QC Reviews of Structural Load Ratings	5						
Update Rating Files & Reports	6						

Task 1: Plan and Document Retrieval and Review: H&H will work with LADOTD to collect all available as-built drawings, repair details or information, field measurements and recent inspection reports or previous load ratings for any assigned bridges. If this information is not readily available, H&H will reach out to potential sources of useful information. This may include LADOTD headquarters or local district offices and databases, local government offices, bridge tender house files, or engineers and contractors who may have been involved in work on the bridge as discovered through other sources. Some of these sources include General Files, AssetWise Bridge Record Data Base, FileNet Manager System, and Inspection Document File Server. The H&H Project Engineer and inspection team will prepare an inspection plan for each bridge with a focus on safety and identification of conditions that may impact the scope of work. The inspection plan will include bridge inspection guidelines, with access, intensity and tools identified to support necessary data collection for load rating analysis and identification of historically problematic details and fatigue prone details. This approach will enable effective evaluation while in the field, while also verifying and supplementing the information collected during the document review. H&H will keep an organized record of collected information, and electronic document copies will be submitted to the LADOTD bridge rating unit through ProjectWise or AssetWise.

Task 2: Site Inspection: The document review performed by the H&H team will inform the planning and preparation for the field inspection. Previous inspection reports will provide an overall understanding of the bridge design, use, conditions, and appropriate inspection methods and equipment.

Based on this information, the surrounding land use and features crossed, our inspection team will determine the most appropriate access means to follow an inspection procedure with an enhanced focus on condition documentation and needed field measurements required for the load rating analysis. The inspections will be focused on identifying conditions that will affect the accuracy of the bridge capacity analysis and any necessary fatigue analysis. Special attention will be paid to areas that are susceptible to corrosion or fatigue cracking. A pre-inspection meeting will be conducted with the inspection and rating team members to ensure that all essential information is obtained, and efforts are focused on critical members.

Access means will be selected in a manner that ensures inspection of elements where required while also considering both inspector and public safety. Access methods will also consider the overall inspection efficiency for a given bridge location to keep lane closures or other local disruptions to a minimum. H&H will schedule the necessary access equipment and work zone traffic control services, if needed, with pre-approval from LADOTD. Our team will inquire with bridge maintenance personnel prior to field work to gather any relevant bridge performance history or recent bridge maintenance issues. In advance of the inspection, our team will prepare field notes and sketches to support the documentation and measurements that will be necessary for the type of components to be inspected and ultimately analyzed by the bridge rating team.

H&H inspectors are professional engineers with fracture and fatigue critical certifications and have either OSHA 10-Hour or OSHA 30-Hour safety training with additional OSHA Fall Protection and OSHA Confined Space training. Several H&H inspectors are also SPRAT Level 1 certified rope access technicians in addition to having aerial work platform and under-bridge snooper equipment training, giving our team a broad range of in-house inspection capabilities. The inspection will be supervised by a licensed professional engineer registered in Louisiana with substantial load rating experience. Our inspection teams always conduct a Job Hazard Analysis (JHA) prior to each work shift and whenever a change occurs to the work zone or working conditions. This safety meeting identifies all hazards for a given work zone, along with the means of hazard mitigation or safety response that will be established for each. The inspection will be performed in accordance with all applicable bridge inspection manuals and requirements, included those identified in AASHTO, LADOTD, and FHWA inspection and evaluation manuals. Key information that may be missing from available as-built plans and reports will be measured or field-verified during the inspection wherever possible. This may include measurements of bridge elements and overall geometry. Digital cameras with date stamps will be used to document inspection findings for inclusion in the inspection report and electronic submittal. Materials testing of steel coupons or concrete cores may be considered to determine strength parameters for accuracy in load rating analysis, or where other material information may not be available.

The inspection team will be equipped with the proper tools for the type and construction material of each bridge. For example, for steel bridges with any areas of severe corrosion, the extent of the section loss may be hidden beneath layers of exfoliation or lamellar corrosion. Our inspectors will use a chipping hammer, scraper or screwdriver, and wire brush to remove any loose materials and expose the remaining bare steel, consistent with the physical inspection techniques outlined in the FHWA Bridge Inspector's Reference Manual (BIRM). Tape measures or straight-edge rulers will be used to document overall measurements, and chalk or keel may be used to outline section loss zones for better clarity in digital photographs. Comprehensive thickness measurement points will be established within the corrosion zone to provide sufficient cross-section data for analysis. These measurements will be determined using calipers or a D-meter. The use of additional advanced non-destructive testing techniques may be considered if warranted by the uncovered conditions. A similar approach will be taken for any concrete, masonry, or timber structures, with inspection tools selected to appropriately assess and document the respective types of deterioration or deficient conditions common for each material type.

Following the site inspection, our inspection team will submit a report detailing the findings with supporting measurements, sketches, and photographs. While our inspectors prepare the draft site inspection report they will work closely with the load rating team to provide full understanding of the as-built and as-inspected conditions of the bridges. The load rating team will work with the inspection results to complete the load rating tasks as described in our load rating technical summary.

Task 3: Analysis & Load Rating: For this contract we will perform a system structural model and analysis of the bridge to determine dead load and live load effects in the members. A three-dimensional structural model may also be used for complex bridges where AASHTOWare cannot be used. Live load analysis will include design loads, legal loads (include SHV), permit loads, and emergency vehicles (EV) as required by the LADOTD BDEM. Secondary and temperature effects will be considered for structures sensitive to such effects.

Our vast experience in highway bridge design and rating makes us uniquely qualified to address any need the LADOTD may have. We have expert knowledge of the latest versions of the AASHTO LRFD Bridge Design Specifications, the AASHTO Manual for Bridge Evaluation, as well as the AASHTO Standard Specifications for Highway Bridges and the LADOTD Bridge Design and Evaluation Manual. We also have extensive experience with the most recent version of AASHTOWare Bridge Rating (BrR) Software, which incorporates the Load and Resistance Factor Rating (LRFR) procedures. H&H has produced quality, readable and reproducible load rating calculations that can be maintained and edited in an inventory throughout the life of the bridge. The complexity of some bridges may also require the use of specialized analysis software such as CSi Bridge, MIDAS or LUSAS. These programs will be used for parts of the structure that cannot be load rated using AASHTOWare. In instances where AASHTOWare calculations show that a bridge requires posting, we will conduct a refined analysis in an effort to reduce or remove the posting from the bridge.

Review of Documentation: A thorough document review of existing plans, reports and previous load ratings will be performed by our load rating group to develop an efficient workflow for the load rating. The document review task will allow the load rating team to prepare and organize the data that is already available for use and will focus on important load rating information such as section properties and dead load take-offs. We will also spend considerable time reviewing the latest inspection reports for locations where section loss and possible capacity reduction has occurred. Upon completion of our as-built load rating, an updated inspection report will be provided for use to determine the as-inspected load rating. At the completion of the document review task, a matrix will be established to organize the types of structures, available usable information, identify areas with gaps or missing information and identify personnel assignments.

Load Rating Preparation: (when required).Our approach to the load rating will be to assign specialized teams for each structure type. For efficiency, the selected teams will have expertise in the load rating of their assigned structure type. In general, these steps will be followed for the load rating:

- *Section Properties and Capacity* – This task will focus on collecting and tabulating all the relevant section properties and material information that is available. Member capacities will be developed for all critical sections. Identifying critical locations such as splices and where cover plates start and end will be important during the analysis of the structure to ensure our models are developed properly to provide results at these locations. All member section properties, material and capacity will be assembled and presented in a concise organized table for easy reference. Truss gusset plate geometry and capacity will also be developed as part of this task. The importance of rating the gusset plates cannot be underestimated, however the needed information to rate a gusset plate is quite extensive. Ideally, as-built shop drawings are required to prepare gusset plate load ratings, and then supported with field verification of plate thickness and sizes. We will use this information, if available, or rely on the original design plans for plate thicknesses and estimating plate sizes if needed. Capacities for gussets will be developed using the latest guidelines in the MBE and AASHTO LRFD for gusset plate rating methodology and completed with the AASHTOWare program. A refined analysis will be performed in instances where AASHTOWare calculations show that the bridge requires posting.
- *Dead Load Verification* – This task will focus on collecting, assembling and organizing the existing state of the bridge with regard to dead load. For structures which have undergone numerous rehabilitations or major reconstruction, this task that will require a review of the original plans and all rehabilitation and reconstruction plans for bridge. The changes that have occurred over the years will be accounted for to determine the dead load. This is important since an inaccurate assessment of weight will produce incorrect load ratings. An approach we take for these types of older bridges is to use the original design plans for as much information as possible, such as stress sheets. This is especially important for the complex or long span trusses or other structures since there are many secondary members and connection plates whose weights must be accounted for. These original forces and stresses will be used as a basis and checking tool to ensure we have an accurate dead load. Measurements will be taken at appropriate locations, such as from the gutter line to the top of barrier, to verify deck thicknesses, and to determine if an overlay or re-decking has occurred.

- *Bridge Models* – AASHTOWare, and if needed CSi Bridge, MIDAS, or LUSAS will be used for the development of the models and load rating. AASHTOWare BrDR is a powerful tool for maintaining bridge inventories. While it can handle a wide range of bridge rating needs, the program has some limitations. Through our extensive experience with this software, we have been able to effectively determine when it is most effective, as well as when the capabilities of the program can be adapted to meet Owner needs. BrR does not support curved structures or structures with multiple skew angles of bearing lines at the same support. Consequently, structural units located within a horizontal curve with a chorded framing plan may be input as straight members and spans lengths were corrected by adjusting the skew angles of the supports. In some instances, more advanced LADOTD approved modelling programs will be needed. Many of these programs have built-in modules available to properly perform the load rating of many structure types. The procedure used in developing the models relies significantly on user inputs and in many cases hand-calculations for items such as dead load, distribution factors, and in some cases member capacity. The models will be developed in a clear organized manner, with all back-up information such as hand-calculations properly referenced and linked. A complete load rating calculation package will be generated that may be used as or guide for the updating future load ratings. The report will include screen shots from the program for all key areas of input and provide links within the document for easy navigation. Influence lines will be provided for elements that cannot be rated using AASHTOWare. All bridges will be rated in accordance with LRFR methodology including FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., AASHTO Manual for Bridge Evaluation, AASHTO Standard Specifications for Highway Bridges, LADOTD BDEM). Vehicles to be included are LADV-11, HL-93 and LADOTD State Legal Loads, SHV, Permit Loads, and EVs. As-Built and as-Inspected load ratings will be performed for all bridges. The as-inspected ratings will be based on the latest bridge inspection reports or from our inspection teams. If load posting is required, we will provide schematic recommendations to improve/eliminate the load posting. We will use refined analysis, to the extent possible, in an effort to reduce or remove posting.
- *Reporting* – The load rating report will be generated in a complete PDF file. PDF versions of report are commonly the most 'go-to' reference and therefore, must be easy to navigate and find needed information. For this reason, we will provide an organized with a cover, table of contents, bookmarks and links throughout the file for quick navigation. If load posting is required, H&H will provide schematic recommendations to improve/eliminate the load posting.

Summary: H&H understands that the more dependable and repeatable our load rating approach is, the more practical the rating preparation will be for future use in rating the structure for emergency conditions and potentially assisting with forming the basis for future repair contracts.

Task 4: QA/QC Reviews of Structural Load Ratings: H&H utilizes a detailed and thorough QA/QC policy for all structural load ratings and calculations. The process begins with establishment of the team from senior engineer down to junior engineers and identifying roles and responsibilities. A QC Engineer is also identified that will review and oversee the checking process. Our practice ensures that checkers of work are qualified and have extensive experience with the type of work being reviewed and checked. Program inputs are verified based on as-built documentation, and outputs reviewed completeness and accuracy. For complex structures, an independent Load Rating, or review may be performed to ensure analytical assumptions and methods are valid and repeatable using an alternate approach. We understand that H&H may provide peer reviews of work performed by others and likewise may have our work reviewed by other consultants.

Task 5: Update Rating Files: We understand that the goal of the LADOTD is to maintain a library of ratings that can be updated with as-inspected data as future inspections are completed. The programs we have chosen to use for the load rating are ideal for this purpose since once the model files are setup, updating section properties and re-generating load ratings is a straightforward procedure. The programs can also be used to generate permit load ratings if necessary. The approach taken by the LADOTD is a common procedure that many of our clients are using to maintain load ratings of their bridge inventory. Our load rating engineers are familiar with this process and understand the needs of the client. In some scenarios, rating files present problems, such as newer versions, or other technical issues, in these cases H&H will troubleshoot these problems and make necessary corrections/changes. A report of the solution will be presented to LADOTD for their records and understanding.

19. Workload:

Firm(s)	Past Performance Evaluation Discipline(s) *	Contract Number and State Project Number	Project name	Remaining Unpaid Balance**
Hardesty & Hanover	Bridge	4400023909 H.002798.6	Bayou Teche Bridge at Oaklawn	$36,553
	Road	4400011199 H.014363.5	Sidewalk Improvements to Conform to ADA – Task Order 1, St. Tammany Parish	$1,870
	CE&I/OV	4400017430 H.001498.6	LA 24 and LA 316: Company Canal Bridge, Terrebonne Parish	$2,114,712
	CE&I/OV	4400024021 H.015028.6	LA 302: Bayou Barataria MB Replacement Route: LA 302	$5,265,436

20. Certifications/Licenses:

Not applicable.

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

Not Applicable. Will be submitted at time of contract award.

22. Sub-consultant information:

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

Firm Name (Name must match as registered with Louisiana's Secretary of State)	**Address**	**Point of Contact and email address**	**Phone Number**
Not Applicable			

23. Location:

Not Applicable

Good Faith Documentation

Hardesty & Hanover made a good faith effort to meet the 2% DBE Goal for Disadvantage Business Enterprise (DBE) for this IDIQ Contract (No. 4400025865) for Load Rating. Our efforts included reviewing the DOTD list on http://www8.dotd.la.gov/UCP/UCPSearch.aspx for firms listed under NAICS 541330 Engineering Services and contacting them for potential teaming.

Our team contacted multiple firms asking if they could meet the Minimum Personnel Requirement No. 5 stated within the advertisement (*Professional civil engineer, registered in the state of Louisiana, shall have a minimum of five (5) years of bridge rating experience, and using AASHTOWare BrDR load rating software*) or any other related tasks. The companies (listed below) advised that they could not provide such services.

Companies contacted:

Batture LLC - 12/14/2022 advised they do not meet the requirement and/or unable to provide services

Civil Design & Construction, Inc. - 12/22/2022 advised they do not meet the requirement and/or unable to provide services

EJES Inc. – 12/23/2022 emailed and left message at company; no response

GOTECH Inc. - 12/22/2022 advised they do not meet the requirement and/or unable to provide services

Infinity Engineering Consultants, LLC. - 12/13/2022 advised they do not meet the requirement and/or unable to provide services

Julien Engineering & Consulting, Inc - 12/27/2022 advised they do not meet the requirement and/or unable to provide services

Royal Engineering - 12/20/2022 advised they do not meet the requirement and/or unable to provide services

Trigon Associates, LLC – 12/23/2022 emailed and left message; no response

Since Hardesty made a good faith effort to meet the goal and was unable to secure a qualified DBE, we would like to be considered for the contact without this requirement. If awarded the contract, we will attempt to utilize a DBE, if there are components of work for which they can provide services.

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