



Contract Nos. 4400033117, 4400033118, *and* 4400033119

IDIQ Contracts for Bridge Preservation Statewide



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

October 1, 2025

Consultant Contract Services Administrator
Louisiana Department of Transportation and Development
1201 Capitol Access Road, Room 405-E
Baton Rouge, LA 70802

Re: **IDIQ CONTRACT FOR BRIDGE PRESERVATION – STATEWIDE**
Contract No. 4400033117, 4400033118, AND 4400033119

Dear Selection Committee Members:

Hardesty & Hanover (H&H) is excited to present our team's qualifications for your Bridge Preservation Statewide contract. Our well-qualified team of multi-disciplined bridge and roadway engineers and inspectors have established outstanding reputations for managing and coordinating state and district-wide IDIQ bridge assessment and remedial design contracts.

Proven Bridge Assessment and Remedial Design Services: H&H's proven team of qualified bridge inspectors and engineers are capable, local, experienced, professional, and available. Our team of highly experienced specialists have provided Departments of Transportation with decades of comprehensive bridge engineering services for all types of fixed and movable bridges. From initial troubleshooting, annual inspection, special assessments, and design services to peer review, emergency response, and O&M manuals development, we've dedicated our careers to maintaining and building bridge facilities that are reliable, efficient, and meet our clients' best interests and all applicable codes.

DOTD Experience: The staff assigned to this project have extensive experience using LADOTD standards and specifications with some working at LADOTD for over 25 years and/or working on prior LADOTD projects. We are intimately familiar with your procedures and design standards and will operate under this bridge preservation contract with virtually no learning curve. Staff from H&H meet all the MPRs required under this contract.

Subconsultant Participation: The H&H Team includes multiple firms with diverse specialties. We have worked with all these subconsultants in the past. To bring strength to our team, we have included highly qualified firms and the work they will perform as shown below:

Firm	Specialty	Firm	Specialty
APS Engineering & Testing, LLC	Geotechnical Engineering Services	KTA-Tator, Inc.	Protective Coating Assessments
Bridge Diagnostics, Inc.	Non-Destructive Testing & Bridge Instrumentation	Moffatt & Nichol, Inc	Underwater Inspections
Chustz Surveying, LLC	Survey Services	Urban Systems, Inc.	Traffic Engineering Services
Providence Engineering and Environmental Group LLC	Environmental Engineering & Permitting		

H&H would sincerely appreciate an opportunity to work with LADOTD on this important IDIQ bridge preservation contract. We'd appreciate your consideration and look forward to providing top-quality bridge assessment, remedial design, and construction support services. Please do not hesitate to contact us if you require additional information on our extensive qualifications. As H&H's primary point of contact for this project, I can be reached by phone at 504.605.7940 or by email at bnaghavi@hardestyhanover.com.

Sincerely yours,
Hardesty & Hanover, LLC

Babak Naghavi, PE, PhD, PH
Principal in Charge and Project Manager

DOTD FORM: 24-102

PROPOSAL TO PROVIDE CONSULTANT SERVICES

(Revised August 11, 2025)

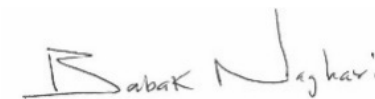
Prime consultant shall complete the DOTD Form 24-102 without altering the Form's text; however, the instruction and/or guidance for Sections 12 through 23 can be removed but do not remove Section title and number.

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.

1. Contract Name as shown in the advertisement	IDIQ CONTRACTS FOR BRIDGE PRESERVATION SERVICES STATEWIDE
2. Contract Number(s) as shown in the advertisement	4400033117, 4400033118, AND 4400033119
3. State Project Number(s), if shown in the advertisement	N/A
4. Prime consultant name (name must match <u>exactly</u> as registered with the Louisiana Secretary of State (SOS) where such registration is required by law; including punctuation; <u>include screenshot from SOS at the end of Section 20</u>)	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)	EF.0005124
6. Prime consultant mailing address	3850 N. Causeway Blvd. Ste. 1625 Metairie, LA 70002
7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)	3850 N. Causeway Blvd. Ste. 1625 Metairie, LA 70002
8. Name, title, phone number, and email address of prime consultant's contract point of contact	Babak "Bobby" Naghavi, PE, PH, PhD, 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 "Bobby" Naghavi, PE, PH, PhD, 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.

Pursuant to Act No. 581 of the 2024 Louisiana Legislature Regular Session, proposer further certifies that it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association based solely on the entity's or association's status as a firearm entity or firearm trade association. In addition, proposer certifies it will not discriminate against a firearm entity or firearm trade association during the term of the contract based solely on the entity's or association's status as a firearm entity or firearm trade association.



Signature above shall be the same person listed in Section 9:

October 1, 2025

Date:

11. If a Disadvantaged Business Enterprise (DBE) goal has been set for this advertisement, indicate which firm(s) will be used to meet the DBE goal and each firm(s)' percentage.

Firm(s):

No DBE goal has been set for this contract

Firm(s)' %:

12. Discipline Table:

Discipline(s)	% of Overall Contract	Prime: H&H	APS Eng. & Testing	Bridge Diagnostics	Chustz Survey	Providence Eng. & Env. Group	KTA-Tator	Moffatt & Nichol	Urban Systems	Each Discipline must total to 100%
Road	3%	100%								100%
Bridge	85%	93%		3%			1%	3%		100%
Traffic	2%								100%	100%
Geotech	3%		100%							100%
Survey	3%				100%					100%
Environmental	4%					100%				100%

Identify the percentage of work for the **overall contract** to be performed by the prime consultant and each sub-consultant.

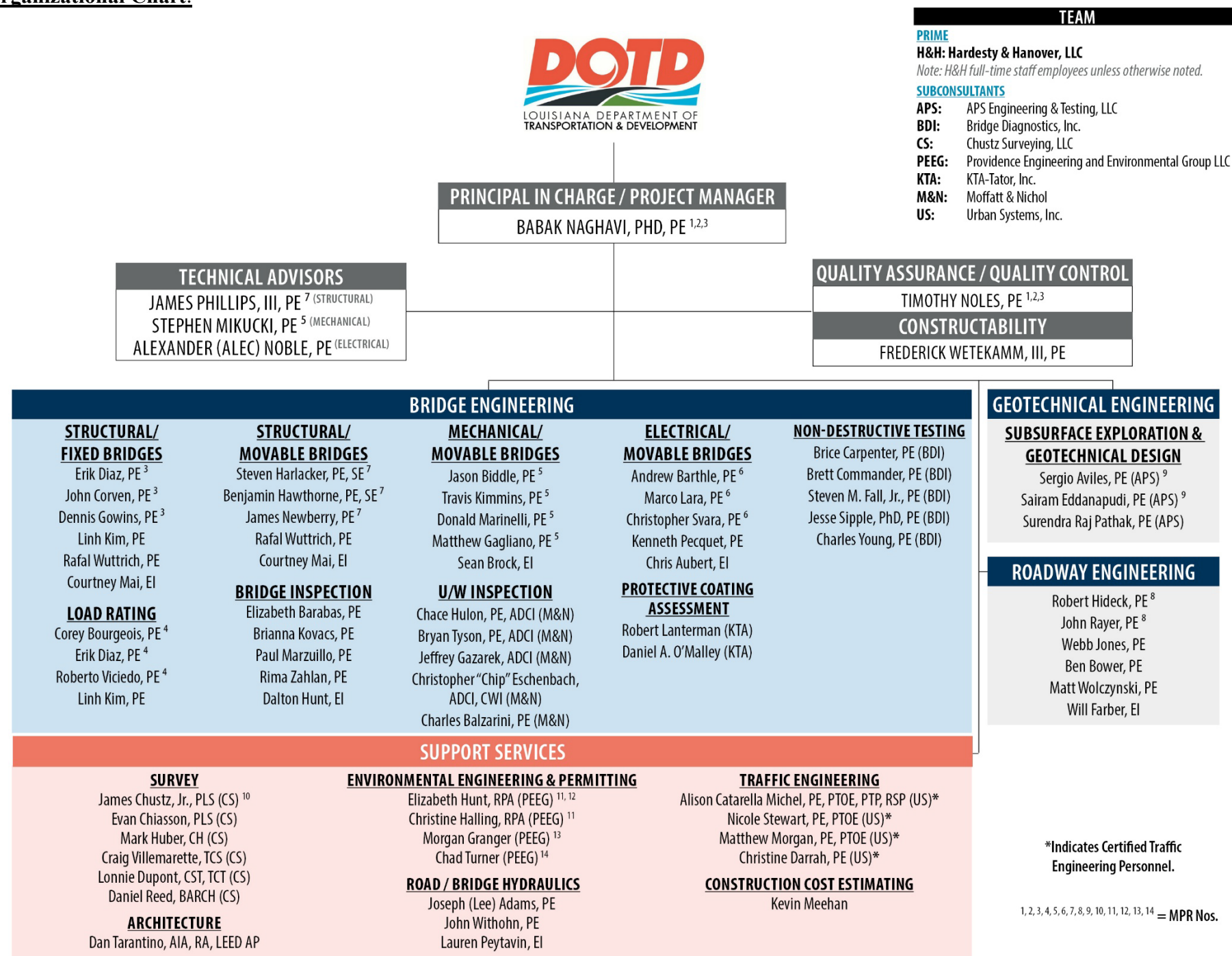
Percent of Contract	100%	82%	3%	2.5%	3%	4%	1%	2.5%	2%	
---------------------	------	-----	----	------	----	----	----	------	----	--

13. Team 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	2	4
	Supervisor - Eng	6	10
	Engineer	12	22
	Engineer - Other	4	8
	Inspector - Bridge	4	8
	Supervisor - Architect	1	2
	Supervisor - Other	1	2
	Engineer Intern	6	12
	Administrative	1	2
APS Engineering & Testing, LLC 	Engineer	3	3
	Engineer Intern	1	2
	Technician	10	12
	Senior Technician	2	8
	Inspector - Certified	1	2
	Clerical	1	2
Bridge Diagnostics, Inc 	Principal	1	2
	Supervisor - Eng	1	1
	Supervisor - Other	4	10
	Engineer - Other	4	6
	Engineer Intern	2	3
	Senior Technician	5	7
	Engineer	4	4
	Computer Analyst	3	5
	Accountant	2	3
	Administrative	2	3
	Engineering-Aide	2	3

13. Team Size: (Continued)

Firm name	DOTD Job Classification	Number of personnel <u>committed</u> to this contract	Total number of personnel available in this DOTD Job Classification (if needed)
Chustz Surveying, LLC 	Surveyor	1	2
	Senior Technician	1	2
	Party Chief	2	6
Providence Engineering and Environmental Group LLC 	Environmental Manager	2	2
	Archaeologist	1	2
	Historian	1	1
	Biologist/Wetlands	4	4
	Archaeologist-Tech	3	3
KTA-Tator, Inc 	Supervisor - Other	1	4
	Environmental Pro	1	2
Moffatt & Nichol Inc. 	Principal	1	3
	Administrative	1	2
	CADD Technician	1	3
	Engineer	2	8
	Engineer Intern	1	8
	Inspector - Bridge	6	12
	Senior Technician	1	8
	Supervisor - Eng	2	6
Urban Systems, Inc U R B A N S Y S T E M S inc.	Supervisor - Eng	2	2
	Engineer	2	4
	Engineer Intern	1	4
	Engineering-Aide	3	3

14. Organizational Chart:

15. Minimum Personnel Requirements:

MPR No. Do not insert wording from ad	Personnel being used to meet the MPR (Individual(s) may not satisfy more than one MPR unless specifically allowed by Attachment B of the advertisement)	Firm employed by	Type of license and discipline meeting MPR/ certification & number (Ex: PE # - Civil)	State of license	License / certification expiration date
1	Babak Naghavi, PE, PH, PhD	Hardesty & Hanover, LLC	PE #20745 – Civil Engineer, Environmental Engineer	LA	09/30/2026
1	Timothy Noles, PE	Hardesty & Hanover, LLC	PE #31675 – Civil Engineer	LA	09/30/2027
2	Babak Naghavi, PE, PH, PhD	Hardesty & Hanover, LLC	PE #20745 – Civil Engineer, Environmental Engineer	LA	09/30/2026
2	Timothy Noles, PE	Hardesty & Hanover, LLC	PE #31675 – Civil Engineer	LA	09/30/2027
3	Babak Naghavi, PE, PH, PhD	Hardesty & Hanover, LLC	PE #20745 – Civil Engineer, Environmental Engineer	LA	09/30/2026
3	Timothy Noles, PE	Hardesty & Hanover, LLC	PE #31675 – Civil Engineer	LA	09/30/2027
3	Erik Diaz, PE	Hardesty & Hanover, LLC	PE#37712 – Civil Engineer	LA	09/30/2027
3	John Corven, PE	Hardesty & Hanover, LLC	PE#38309 – Civil Engineer	LA	03/31/2026
3	Dennis Gowins, PE	Hardesty & Hanover, LLC	PE#24468 – Civil Engineer	LA	09/30/2027
4	Corey Bourgeois, PE	Hardesty & Hanover, LLC	PE#42362 – Civil Engineer	LA	09/30/2026
4	Erik Diaz, PE	Hardesty & Hanover, LLC	PE#37712 – Civil Engineer	LA	09/30/2027
4	Robert Vicedo, PE	Hardesty & Hanover, LLC	PE#36533 – Civil Engineer	LA	03/31/2026
5	Stephen Mikucki, PE	Hardesty & Hanover, LLC	PE#44849 – Mechanical Engineer	LA	03/31/2027
5	Jason Biddle, PE	Hardesty & Hanover, LLC	PE#43431 – Mechanical Engineer	LA	09/30/2027
5	Travis Kimmins, PE	Hardesty & Hanover, LLC	PE#43676 – Mechanical Engineer	LA	03/31/2026
5	Donald Marinelli, PE	Hardesty & Hanover, LLC	PE#43538 – Mechanical Engineer	LA	09/30/2027
5	Matthew Gagliano, PE	Hardesty & Hanover, LLC	PE#37500 – Mechanical Engineer	LA	03/31/2027

6	Andrew Barthle, PE	Hardesty & Hanover, LLC	PE#34062 – Electrical and Computer Engineer	LA	03/31/2027
6	Marco Lara, PE	Hardesty & Hanover, LLC	PE#44115 – Electrical Engineer	LA	03/31/2026
6	Christopher Hayden Svara, PE	Hardesty & Hanover, LLC	PE#44080 – Electrical Engineer	LA	03/31/2026
7	James Phillips, III, PE	Hardesty & Hanover, LLC	PE#25091 – Civil Engineer	LA	03/31/2027
7	Steven Harlackner, PE	Hardesty & Hanover, LLC	PE#37057 – Civil Engineer, Structural Engineer	LA	09/30/2026
7	Benjamin Hawthorne, PE	Hardesty & Hanover, LLC	PE#44620 – Structural Engineer	LA	09/30/2026
7	James Newberry, PE	Hardesty & Hanover, LLC	PE#45742 – Structural Engineer, Civil Engineer	LA	09/30/2027
8	Robert Hideck, PE	Hardesty & Hanover, LLC	PE#41953 – Civil Engineer	LA	03/31/2026
8	John Rayer, PE	Hardesty & Hanover, LLC	PE#47089 – Civil Engineer	LA	03/31/2027
9	Sergio Aviles, PE	APS Engineering and Testing, LLC	PE#33571 – Civil Engineer	LA	03/31/2026
9	Sairam Eddanapudi, PE	APS Engineering and Testing, LLC	PE#35129 – Civil Engineer	LA	03/31/2026
10	James H. Chustz, Jr, PLS	Chustz Surveying, LLC	PLS #4657	LA	3/31/2026
11	Elizabeth Hunt, RPA	Providence Engineering and Environmental Group LLC	RPA#17020	n/a	n/a
11	Christine Halling, RPA	Providence Engineering and Environmental Group LLC	RPA#34906365	n/a	n/a
12	Elizabeth Hunt, RPA	Providence Engineering and Environmental Group LLC	RPA#17020	n/a	n/a
13	Morgan Granger	Providence Engineering and Environmental Group LLC	n/a	n/a	n/a
14	Chad Turner	Providence Engineering and Environmental Group LLC	n/a	n/a	n/a

16. Staff Experience:

	Firm Employed by		Hardesty & Hanover, LLC		
	Name		Babak Naghavi, PhD, PE, PH	Years of relevant experience with this employer	8
	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 / 9/30/2026 Professional Hydrologist: 95-H-1121 Certifications: Maintenance and Rehabilitation of Historic Bridges (LADOTD); NEPA Transportation Decision Making Workshop; Work Zone Traffic Control Supervisor/Flagger		
Year registered	1983	Discipline	Civil and Environmental Engineering		
Contract role(s) / brief description of responsibilities			Principal in Charge / 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 time specified in the applicable MPR(s).				
01/20 – Present	H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Project Manager for the bridge assessment, complete rehabilitative engineering design, and construction inspection services required for the partial replacement of the Almonaster Ave Bridge, a movable Strauss-heel trunnion bridge that crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. H&H’s 2019 assessment of the circa-1920 bascule bridge involved 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. The assessment 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. The road design services included a new alignment for the connecting road, along with all associated drainage structures. Additional remedial efforts along Almonaster Ave Bridge also included the improvement or replacement of the original fixed roadway approach spans. The sharp curve that existed on westbound Almonaster Ave was demolished, and a new road was constructed on an improved alignment. H&H developed a hydraulic study and a site plan that included several retention ponds for drainage improvements. Other services included environmental, geotechnical, and pavement design.				
01/19 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Project Manager 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 Blvd to provide a facility carrying three lanes of traffic in each direction. The new bridge is constructed as an independent structure adjacent and north of the existing bridge with a new operator house. The project includes rehabilitation of the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane. In addition to the new bridge design, all roadway approaches and intersections in the bridge vicinity (eastbound and westbound) will be redesigned to accommodate the new structure. Scope includes development of a Traffic Control Plan.				
11/24 – Present	SR 33 Bridge Replacements, Franklin County, MS – Mississippi DOT Project Manager for the Phase A Final Right-of-Way (ROW) Plans for roadway design and roadway hydraulic design for four bridge replacements along SR 33 (Bridge Nos. 31.9, 34.6, 34.9, and 35.3). The project scope includes roadway realignment, roadway hydraulic design, preliminary ROW design, and final ROW design. H&H is providing the realignment of the roadway to run parallel to the existing and redesigning of one intersection at the end of the project. A hydraulic study and report are to be completed to resize the existing pipes, if necessary, and to verify sizing for a reinforced box culvert. A				

	set of preliminary ROW plans are to be created following MDOT guidelines and using the approved alignment from MDOT. Final right-of-way plans will be delivered after hydraulic design and roadway design have been finalized and a plan set has been created.
11/21 – 10/23	H.014363.5 Sidewalk Improvements to Conform to ADA Guidelines, Slidell, LA – LADOTD Project Manager for design services including preliminary and final plans, and project proposal for LADOTD Sidewalk Improvements to Conform to ADA Guidelines. The project begins at the intersection of LA 1091 (Robert Blvd) with US 190 (Gause Blvd) in the city limits of Slidell, LA, then continues North along LA 1091 for 2.0+/- miles to a location 175 ft. north of the intersection of LA 1091 with Country Club Blvd. The survey will extend along all major side roads 50 ft. from the PT of the curbing in each direction. The project includes providing various design services including preliminary plans, final plans, construction engineering, project proposal plans, and inspection for LADOTD Sidewalk Improvements to Conform to ADA Guidelines.
06/17 – Present	H.002798.6 Bayou Teche Movable Bridge at Oaklawn, St. Mary Parish, LA - LADOTD Project Manager responsible for design, calculations, 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 steel girder swing-span rotates with hydraulically actuated slewing (push-pull) cylinders. H&H is currently providing construction phase services for the project.
09/22 – Present	I-10 & I-12 College Dr Flyover Ramp Design- Build, Baton Rouge, LA - LADOTD Project Quality Manager overseeing design and construction quality control/quality assurance for this flyover ramp design-build project which is located at the I-10 West exit to College Dr, in advance of the I-10 & I-12 West merge. H&H serves as Design-Builder's Construction Quality Control Firm (CQCF) and oversees all Design Quality Control and Construction Quality Control activities for the project. Responsibilities include the development and implementation of Comprehensive Quality Plan to ensure the design and construction conforms to all specified requirements. H&H will also develop, maintain, and update Contractor Quality Management Plan and provide all necessary qualified Inspectors, material sampling, testing, independent testing labs to ensure contractors and off-site fabrication facilities meet project specifications.
03/18 – 04/21	SR 609 Bascule Bridge over Old Fort Bayou 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 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. Additionally, H&H provided construction phase services for the project.
05/13 – 02/17	Glen Oaks Dr (Plank Rd to McClelland Dr) – Baton Rouge DPW Project Manager for the \$10M engineering design and construction of a three-lane concrete curb and gutter roadway with sidewalks and subsurface drainage on Glen Oaks Dr from Plank Rd to McClelland Drive. Glen Oaks Dr was a one-mile existing Urban Collector roadway. The project also included improvements to several intersections, full topographic survey, subsurface drainage system and outfalls, and hydrologic & hydraulics analysis for the outfalls.
01/09 – 08/10	USACE Contract. W912P8-07-D-0055: Causeway Blvd Overpass Complex - USACE Project Manager for this project that involved the design of north and south roadway approaches for the overpass structures at Causeway Blvd located at Jefferson Parish, LA. The scope of work included precast concrete piles; cast-in-place pile bent caps and concrete decks; approach slabs; and a storm-water drainage pumping station. This project was designed to LADOTD specifications.
06/12 – 12/15	SP No. 737-99-1024 Safe Routes to Schools, Statewide, LA – LADOTD Project Manager providing design and construction engineering and inspection services for selected projects involving sidewalks and related drainage modifications, curb extensions, signing, and striping. Work included sidewalk, signage, and marking improvements in the vicinity of several school areas including Daspit Elementary School in New Iberia, LA; two schools in DeRidder, LA; three schools in Orleans Parish, LA; Mandeville Elementary School in Mandeville, LA; and Hammond Junior High in Hammond, LA.

	Firm Employed by Hardesty & Hanover, LLC			
	Name	Timothy Noles, PE	Years of relevant experience with this employer	41
	Title	Principal	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S. / 1984 / Civil Engineering		
Active registration number / state / expiration date		Professional Engineer: 31675 / LA / 9/30/2027		
Year registered	2005	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		Quality Assurance / Quality Control Manager (QA/QC) – Meets MPR 1, 2, and 3		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
01/20 – Present	H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Technical Advisor / Quality Control Manager for the bridge assessment, complete rehabilitative engineering design, and construction inspection services required for the partial replacement of the Almonaster Ave Bridge, a movable Strauss-heel trunnion bridge that crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. 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. 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.			
07/16 – 9/21	SR A1A North Bridge Replacement, Fort Pierce, FL – Florida DOT Technical Advisor for the planning and design of a new high-level fixed bridge carrying SR A1A and the East Coast Greenway over the Intracoastal Waterway, FEC Railroad, and Old Dixie Highway. Scope included staged construction to maintain traffic, elimination of at-grade rail crossing, design of new roadway alignments and access roads, and integration of an observation deck. H&H coordinated extensively with utilities, FEC Railroad, adjacent businesses, and permitting agencies. The project also included geotechnical, drainage, hydrogeology, lighting, signals, signage, and maintenance of traffic for both vehicular and marine users.			
01/19 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Technical Advisor 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 Blvd to provide a facility carrying three lanes of traffic in each direction. The new bridge is constructed as an independent structure adjacent and north of the existing bridge with a new operator house. The project includes rehabilitation of the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane. Scope includes improvements to bridge and roadway approaches for eastbound and westbound traffic as well as development of a Traffic Control Plan.			
04/17 – Present	I-395 Segmental Bridges, Miami, FL – Florida DOT Technical Advisor for the design of the superstructure and performing the load ratings. H&H is designing seven new precast segmental bridges that are a part of the SR 836 / I-95 / I-395 corridor upgrade. 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). Construction is scheduled to be completed in late 2027.			
08/16 - 06/18	I-75 SB Exit Design from S of Bypass Canal to EB/WB, Tampa, FL – Florida DOT Technical Advisor responsible for project oversight of plans preparation and engineering documentation. This two-mi. roadway improvement project included the addition of a new auxiliary lane for southbound I-75 from south of the Bypass Canal to the southbound off-ramp and widening the I-75 southbound off-ramp from one to two lanes. A unique aspect of the design approach was the incorporation of this design into a long-term buildout of the interchange. This project was expedited for construction based on no right of way acquisition or impacts to Florida Gas Transmission lines.			

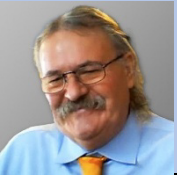
08/20 – Present	H.001498.6; LA 24 and LA 16 Company Canal Vertical Lift Bridge, Bourge, LA – LADOTD Technical Advisor / Quality Control Manager ensuring consistent performance by the construction engineering and inspection staff throughout the term of the project, including services for a new vertical lift bridge and operator's house. Monitoring construction activities; reviewing construction engineering inspection field records and reports; determining compliance with field testing methods and results; maintaining records of contractual operations, pay estimates and progress reports; preparing final estimate packages; conducting construction progress meetings; and construction close-out.
02/08 – 12/10	SR-5/US-1 Parker Bridge over ICWW, Palm Beach, FL – Florida DOT Principal-in-Charge/Lead Design Engineer for construction management at-risk project which included in-depth inspection, condition report with load ratings, and rehabilitation recommendations. The project also included preparation of structural, architectural, mechanical, and electrical plans to rehabilitate this Hopkins Trunnion twin double-leaf bascule span bridge. The \$8 million rehabilitation included hydraulic machinery retrofit, electrical system improvements, control house 2nd story addition, bridge widening, as well as roadway and embankment improvements.
01/15 – 03/17	Broad Causeway Bridge over ICWW, Bay Harbor Islands, FL – City of Bay Harbor Islands Principal-in-Charge for the project involving construction inspection for three bridges including a 1630-foot bascule span bridge. Scope included maintenance of traffic, roadway work, and bascule span rehabilitation including cathodic protection for the approach bridges substructure for \$14 million.
09/07 – 01/09	SR-814/Atlantic Boulevard Bridge, Pompano Beach, FL – Florida DOT Principal-in-Charge/Lead Design Engineer for this \$5 million Construction Management Risk to rehabilitate a Hopkins Trunnion double-leaf bascule span bridge. The project included hydraulic machinery retrofit; electrical system improvements, control house modifications, and bascule span structural steel rehabilitation and bridge railing replacement.
04/12 – 04/16	Boca Grande Causeway Swing Bridge Replacement, Placida, FL – Gasparilla Island Bridge Authority Technical Advisor/Quality Control Manager for the design of the replacement of a structurally deficient swing span bridge located on the Boca Grande Causeway. The fixed portion of the bridge utilized Florida I-beam girders founded on hammerhead pier caps and cast in place footings with 24-inch precast concrete piles. The project also included the installation of a permanent steel sheet pile bulkhead wall with cast in place concrete caps. Construction of critical temporary sheet pile walls required for phased construction, and a total of 0.24 miles of roadway construction.
01/19 – 12/24	SR 605 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Technical Advisor / Quality Control Manager 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 included developing standard and special bridge services, statewide for MDOT. Work included inspection and rehabilitation of structural, mechanical, and electrical bridge components, roadway approaches and development of maintenance and repair plans. All designs were in accordance with AASHTO, FHWA and MDOT guidelines and specs.
08/10 – 08/19	Bayou Teche Bridge at Oaklawn, St. Mary Parish, LA – LADOTD Principal-in-Charge providing inspection, engineering design, and post-design services for new Bayou Teche Bridge at Oaklawn project. Built in 1941 to carry LA Route 323 over Bayou Teche, the original bridge is being 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. This bridge replacement project included new traffic signals, gates, and a barrier system design which were provided by LADOTD's roadway, structural, and mechanical designers.
08/08 – 08/13	Judge Seeber Vertical Lift Bridge, New Orleans, LA - LADOTD Technical Advisor /Quality Control Manager 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 accordance with LADOTD preference.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	James Phillips, III, PE	Years of relevant experience with this employer	9
	Title	Senior Structural Engineer	Years of relevant experience with other employer(s)	32
Degree(s) / Years / Specialization		B.S. / 1982 / Civil Engineering		
Active registration number / state / expiration date		Professional Engineer: 0025091 / LA / 03/31/2027		
Year registered	1986	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		Technical Advisor / Chief Bridge Structural Engineer – Meets MPR 7		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
1/18 - present	Lapalco Boulevard Movable Bridges over Harvey Canal, Jefferson Parish, LA - Jefferson Parish DPW Technical Lead 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. In addition to constructing the new bridge immediately adjacent and north of the existing bridge, the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane will be rehabilitated. The scope of services also includes improvements to bridge and roadway approaches for eastbound and westbound traffic as well as the development of a Traffic Control Plan. This project is being designed according to LADOTD standards and specifications.			
06/20 – 12/20	SR 609 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Chief Bridge Movable Bridge 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.			
01/19-present	Waterford Sustainable Transportation Bridge Waterford, Ireland -- Waterford City & City Council Chief Movable Bridge Engineer for the concept development and design of a double-leaf bascule footbridge over the River Suir in the North Quay area of Waterford, Ireland. The bascule span features simple trunnions and provides a 25m clear navigation span between fendering. Each bascule span is operated by a pair of hydraulic cylinders in a extend to open arrangement. Tail locks prevent relative movement between the movable and approach spans due to live load. Jaw type span locks lock the tip of one span to the tip of the other thereby maintaining alignment and preventing relative movement between the spans due to live load. Responsible for development of the movable span engineering concept and oversight of the mechanical and hydraulic system design.			
01/16-04/16	District Seven Movable Bridge Work Program Evaluation, West Central Florida - Florida DOT District 7 Chief Bridge Structural Engineer responsible for developing a ten-year work program for eleven movable bridges (10 bascules, 1 vertical lift) owned and operated by FDOT D7. Prepared a condition assessment of each bridge based upon site reviews, recent bridge inspection reports, prior repair/rehabilitation projects and interviews with maintenance staff. Prepared a report describing the current state of the bridges and providing recommendations for routine and periodic repairs/rehabilitation over the next 10 years. Costs for the recommendations were included in the report.			
11/14-11/15	Flagler Memorial Bridge over ICWW, Palm Beach, FL - Florida DOT District 4 Chief Bridge Structural Engineer responsible for the post design services for a new bridge featuring twin double-leaf rolling-lift bascule spans. The project was constructed using a design-build approach. Assisted with review of requests for information (RFIs) and construction procedures for shop fabrication and field alignment, including roll testing. Performed site visits to the steel fabrication shop to observe construction and roll testing and provide guidance on adjustments to obtain alignment tolerances of the rolling tread surfaces.			

05/18-2/21	SR-A1A/North Causeway Bridge over ICWW, Fort Pierce, FL - Florida DOT District 4 Chief Bridge Structural Engineer / Engineer of Record for the 4000-foot-long bridge replacement project which replaces a bascule span with a high-level fixed bridge that has 85-foot vertical clearance over the navigable channel. The preferred replacement fixed bridge alternative includes the FIB superstructure and spans over Old Dixie Hwy and the FEC Railway. In addition to the new bridge, the project includes extending Juanita Ave east from US-1 to Old Dixie Hwy and provisions for a new access roadway for the businesses south and north of the new bridge along SR A1A.
08/12 – 02/14	Laurel Street Bascule Bridge Rehabilitation, Tampa, FL – City of Tampa Project Manager / Chief Movable Bridge Engineer for a project that involved emergency repairs and rehabilitation of a historic through truss single-leaf bascule bridge. Scope involved emergency repair of the rack pinion support structures and rack frames to correct severe corrosion and fatigue cracks. Rehabilitation included reconditioning of the drive machinery and replacement of the drive motors and control system.
01/15 - 12/17	Beckett Bridge Replacement, Tarpon Springs, FL - Pinellas County Government Technical Lead responsible for replacement of an existing historic bridge with a new 360-foot single-leaf, rolling-lift, bascule bridge that carries Riverside Drive over Whitcomb Bayou and features two traffic lanes, shoulders 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 sink hole under the bridge. A unique crank arm system drives the movable span, powered by redundant 20 HP electric motors and vector drives. Auxiliary machinery includes tail props and span locks. Project elements included relay-based control system, approximately a quarter mile of roadway, drainage, bridge architecture, and public involvement.
02/03 – 03/05	Spokane Street Swing Bridge, Seattle, WA – Seattle DOT Project Manager / Engineer of Record for investigation and design of replacement lift/turn cylinders for the world's largest concrete double-swing bridge. Project involved design of nine-foot diameter bore hydraulic cylinders for lifting and pivoting two 1.5-million-pound concrete spans. Replacement involved investigation of the failure mode of the original cylinders, including detailed FEA analysis, and development of a cylinder design that eliminated the stress concentrations found to have contributed to the failure. The span length between pivots is 480-ft. and each swing span has a length of 418-ft.
06/12 – 06/14	Andrews Avenue Bascule Bridge Rehabilitation, Fort Lauderdale, FL – Broward County Chief Movable Bridge Engineer responsible for hydraulic system design and review of structural and mechanical design, calculations, plans, and technical special provisions for this single-leaf bascule bridge. Scope included electrical and machinery rehabilitation of a single-leaf bascule span. Mechanical work included complete replacement of the hydraulic cylinder drive system and span locks.
09/98 – 04/06	US 92 Hillsborough Avenue Vertical Lift Bridge Rehabilitation, Tampa, FL – Florida DOT Chief Movable Bridge Engineer / Engineer of Record responsible for inspection and design for repair of an historic 1939 vintage vertical lift movable bridge over the Hillsborough River. The bridge features a 94-foot lift span. Inspected specific bridge systems and devised repairs to correct binding of the lift span guide assemblies. Performed QC reviews of the plans and technical special provisions for replacement of the counterweight wire ropes, sheaves and sheave bearings as well as miscellaneous structural repairs to the lift span towers.
1/07 - 11/10	CR 78/Matlacha Bridge Replacement, Matlacha, FL - Lee County Government Project Manager/Chief Structural Bridge Engineer for a replacement bridge design featuring a single-leaf bascule span on Pine Island Road in the historic town of Matlacha. The bridge provides the only connection between the Greater Pine Islands and mainland Lee County. The channel span featured a trunnion type bascule with hydraulic cylinder drive machinery. Approach spans consisted of precast, prestressed concrete slabs, transversely post-tensioned and finished with a composite cast-in-place concrete topping.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Stephen Mikucki, PE	Years of relevant experience with this employer	34
	Title	Senior Mechanical Engineer	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization		BE / 1990 / Mechanical Engineering		
Active registration number / state / expiration date		Professional Engineer: 44849 / LA / 3/31/2027		
Year registered	1983	Discipline	Mechanical Engineering	
Contract role(s) / brief description of responsibilities		Technical Advisor / Movable Bridge Mechanical Systems Expert – Meets MPR 5		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
01/13 – 08/13	Lea Joyner / Ouachita River Bascule Bridge Rehabilitation, Monroe, LA – Louisiana DOTD Movable Bridge Mechanical Systems Expert for this emergency repair to a LADOTD Preservation Priority Bridge. Provided structural repair designs that included hanger plates and counterweight trunnion bearings for this underdeck Straus double-leaf bascule bridge. As part of a commissioning task, which included strain gaging of equipment for a contractor, H&H discovered a significant operational resistance in the counterweight bearings. This led to the replacement of the bearings, structural hanger plate located between the tail end of the bascule leaf, and articulated counterweight frame. Responsibilities included design, calculations, development of contract plans, cost estimate, construction support services, review of shop drawings, project submittals and installation procedures, and responding to RFIs submitted by the contractor for a counterweight trunnion replacement and bridge rehabilitation. H&H provided structural and mechanical support in the replacement of the counterweight trunnion and hanger plates, developed a jacking procedure and specifications for the project. Responsible for coordinating with contractor to determine field conditions and construction limitations. Reviewed all structural steel shop drawings. The Ouachita River Bridge, a double-leaf Strauss Bascule bridge, was constructed in the early 1930s and is eligible for the National Register of Historical Places under Criterion C: Design/Engineering.			
12/12-07/14	Lea Joyner / Ouachita River Bascule Bridge – Emergency Repair, Monroe, LA – Louisiana DOTD Movable Bridge Lead for this emergency repair to the hanger plates and counterweight trunnion bearings for this underdeck Straus double leaf bascule bridge. As part of a commissioning task including strain gaging of equipment for contractor PCL, H&H discovered a significant operational resistance in the counterweight bearings. This led to the replacement of the bearings, and structural hanger plate located between the tail end of the bascule leaf, and articulated counterweight frame.			
01/20 – Present	Almonaster Avenue Railroad Bridge over the Industrial Canal Rehabilitation, New Orleans, LA – Port of New Orleans Movable Bridge Mechanical Systems Expert 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 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 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.			
08/23 – Present	SR 605 Bascule Bridge over Industrial Waterway Rehabilitation, Harrison County, MS – Mississippi DOT Senior Movable Bridge Mechanical Engineer leading the design of the mechanical rehabilitation and providing construction services during construction of these twin double-leaf rolling bascules. The full rehabilitation of SR-605 bascule bridge, issued as a task-order to the IDIQ Master Bridge Contract, included engineering assessment, mechanical, electrical, and structural design in addition to the preparation of Traffic Control Plans. All designs will be completed in accordance with AASHTO, FHWA, and MDOT guidelines and specifications. H&H is currently performing construction phase services for the project.			

05/23 – Present	SR 609 Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Senior Movable Bridge Mechanical Engineer responsible for conducting plans review of mechanical rehabilitation plans involving a full mechanical rehabilitation of the operating machinery as well as the HVAC and plumbing systems for the control house. Also provided construction support services as part of the full rehabilitation of the SR 609 bascule bridge. Issued as a task-order to the IDIQ Master Bridge Contract, the scope of this task order included 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. H&H is currently performing construction phase services.
01/12-12/17	Flagler Memorial Bridge over ICWW, Palm Beach, FL - Florida DOT District 4 Senior Movable Bridge Mechanical Engineer / Engineer of Record responsible for this \$95 million design-build project that included the replacement of the entire bridge off-line and parallel to the existing bridge to maintain traffic for this busy causeway. The design/build request for proposal, resulting from a Type 2 Categorical Exclusion Class of Action NEPA process, had strict design requirements regarding environmental mitigation, appearance, and maintainability. Completed in 2018, the twin double-leaf rolling lift bascule span bridge design included a 150-foot rolling-lift-span over the navigable channel, twelve 150-foot pre-stressed concrete approach spans, and approach roadway work.
01/21-11/22 (Design); 11/15 – 09/17 (Study)	Broadway Bridge Rall Wheel and Track Rehabilitation, Multnomah County, OR – Multnomah County Movable Bridge Lead / Engineer of Record for a major complex movable bridge project that includes replacing the eight foot-four-inch diameter Rall wheels at each corner of the bridge; replacing the 33-foot-long track; trunnion axle replacement and associated control strut rehabilitation. Prior projects include the replacement of the anchor struts, and rehabilitation of the operating strut and span drive machinery. Located in downtown Portland, the bridge spans the Willamette River. The bridge is a rare double leaf Rall-type bascule structure that is more than 100 years old. The Rall wheels are part of the bridge operating mechanism, and two Rall wheels support the entire weight of each of the bridge's bascule leaves.
04/15 – 07/17	Morrison Street Bascule Bridge Rehabilitation, Portland, OR – Multnomah County Project Manager for the inspection, analysis, and machinery systems modifications for this existing bascule bridge constructed circa 1958. To improve rideability of the roadway deck, the County selected David Evans and Associates to replace the existing FRP deck with a lightweight concrete system. H&H was selected as a sub-consultant to analyze the mechanical systems, strengthen the trunnion assembly, modify the span drive machinery and brake systems, and rehabilitate the span toe locks. To accommodate for the significant addition of weight to the structure, an innovative trunnion collar strengthening connection was developed, and efficiently balancing the bridge by conceptualizing the addition of steel plate to the back wall of the counterweight frame.
12/12-05/18	Sarah Mildred Long Dual Lift Bridge, US Route 1 Replacement, Kittery, ME and Portsmouth, NH - Maine DOT Movable Bridge Lead / Engineer of Record for the design and construction of this new vertical lift bridge, equipped with dual decks (upper-level roadway, and lower-level rail). The bridge selected is designed with four independent tower columns to house the counterweight sheaves, and independent rope drives at each tower to operate the span. Unique features include movable bridge seats to utilize the movable span for the upper roadway and lower railway usage. The project was constructed using CMGC delivery. The new bridge will carry crucial commercial traffic and heavy freight rail between NH and ME.
10/15-03/16; 10/12-03/13; 10/11-03/12; 10/09-03/10;	Welland Canal Bridges, St. Catherine's, ON - St. Lawrence Seaway Management Corporation Project Director / Movable Bridge Lead responsible for the management and design delivery of several engineering study tasks since 2009. The first major task was the Study to replace Bridge No. 6 carrying CNR traffic was the initial task, which included the inspection, rehabilitation, and conceptual replacement options for this 80-year-old twin single leaf bascule bridge. The project included an in-depth evaluation of the original tread plate castings, and the effect of the wear has on the span drive machinery components. Oct 2009 – March 2010. The second major task assignment was the Traffic Control Device Study for all 10 bridges along the Welland Canal, and 8 bridges in the Maisonneuve Region (Quebec), which included the prioritization of adding traffic safety devices such as warning signs, lights, and barrier gates. (Oct 2011-March2012) The third major task assignment was the Machinery Replacement & Standardization Study for the 10 bridges along the Welland Canal, which comprised of the replacement of all bridge operating machinery with enclosed gearing or hydraulic motors, with an emphasis on replacing the systems with common equipment where practical (Oct 2012 – March 2013). The fourth major task assignment was the Machinery Replacement Design for Bridge No. 21 in Port Colborne.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Alexander (Alec) Noble, PE	Years of relevant experience with this employer	28
	Title	Chief Engineer	Years of relevant experience with other employer(s)	8
Degree(s) / Years / Specialization		B.E. / 1989 / Electrical Engineering		
Active registration number / state / expiration date		Professional Engineer: 081079-1 / NY / 8/31/2026		
Year registered	2003	Discipline	Electrical Engineering	
Contract role(s) / brief description of responsibilities		Technical Advisor / Movable Bridge Electrical Systems Expert		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
01/20 – 02/22	Almonaster Avenue Railroad Bridge over the Industrial Canal Rehabilitation, New Orleans, LA – Port of New Orleans Movable Bridge Electrical Engineer for 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. The main trunnion bearings were rehabilitated and repositioned.			
11/18-present	Lafayette Bascule Bridge, Lafayette, MI - Michigan DOT Movable Bridge Electrical Engineer and QA/QC Engineer for the design of a new electrical system for a new replacement movable bridge in Michigan. Noble reviewed all calculations, specifications, and plans.			
09/16-5/19	Minnesota Slip Bridge, Duluth, MN -- City of Duluth Dept. of Public Works and Utilities Movable Bridge Electrical Engineer for the replacement of a pedestrian bridge control system. Noble conducted in-depth inspection of the original power and control system. He also designed and specified a new PLC-based control system to operate the spans, including inclinometer-based sensing to ensure leaves mated properly due to requirements of mechanical design. Noble reviewed shop drawings and conducted acceptance tests.			
04/13-4/15	Dyckman Street Bridge, South Haven, MI - City of South Haven Movable Bridge Electrical Engineer for the partial hydraulics rehabilitation of a two-leaf bascule bridge. Noble conducted in-depth inspection of existing power and control systems and designed a new PLC-based hydraulic control system to integrate with the existing relay control system. He also designed new submarine cables, a traffic control system, and a CCTV system. Noble conducted shop drawing review and acceptance testing.			
01/18-09/22	Gilmerton Bridge Replacement (Construction, Engineering, and Inspection Services), Chesapeake, VA – Virginia DOT Movable Bridge Electrical Engineer for the replacement of the Gilmerton Bridge in Chesapeake, Virginia. Noble was responsible for the design of a PLC-based skew control system for the vertical lift bridge. The existing skew control system was inaccurate and prone to failure. Noble analyzed the existing PLC program and designed a new PLC-based controller using ethernet encoders, in addition to developing methods to allow the new ethernet-based system to operate on existing wiring.			
06/18 – 03/19	SR 609 Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Movable Bridge Electrical Engineer / QA/QC Advisor responsible for reviewing plans 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 were in accordance to AASHTO, FHWA and MDOT guidelines and specifications.			

10/16-4/17	Flagler Memorial Bridge over ICWW, Palm Beach, FL - Florida DOT District 4 Movable Bridge Electrical Engineer responsible for this \$95 million design-build project that included the replacement of the entire bridge off-line and parallel to the existing bridge to maintain traffic for this busy causeway that connects West Palm Beach to Palm Beach. The design/build request for proposal, resulting from a Type 2 Categorical Exclusion Class of Action NEPA process, had strict design requirements regarding environmental mitigation, appearance, and maintainability. Completed in 2018, the twin double-leaf rolling lift bascule span bridge design included a 150-foot rolling-lift-span over the navigable channel, twelve 150-foot pre-stressed concrete approach spans, and approach roadway work. This project was recognized by ASCE West Palm beach Branch receiving the award of 2018 Project of the Year.
09/15 – 11/15	BNSF Des Allemands Swing Bridge (BNSF Bridge 32.06) Rehabilitation, Des Allemands, LA - BNSF Railway Company QA/QC Advisor for the rehabilitation of the BNSF's Des Allemands Swing Railroad Bridge which included structural condition assessment, engineering report, the development of final bridge and track designs and construction contract documents, load rating analysis, permitting, construction management and on-site construction support. Responsible for all aspect of construction of the new thru plate swing span. Scope included rehabilitation of the foundations, design of the new rest pier caps, rehabilitation of the swing span pivot pier. Swing span pivot pier designed with internal steel framing to transfer live loads to the existing foundation while placing the dead load of the new heavier swing span on micropile foundations, part of the pivot pier rehabilitation. Design also included mechanical equipment, new electrical system capable of operated remotely, electrical design included use of a PLC controls with manual operation available on the swing span.
03/16 – 11/16	Mechanical & Electrical Upgrades to Three Movable Bridges, Sault Ste. Marie, MI/Sault Ste. Marie, ON – Canadian Pacific Railway Movable Bridge Electrical Engineer / QC Oversight for detailed mechanical and electrical inspections and rehabilitation of three side-by-side movable spans, two in Michigan, one in Canada. The bridges include a double-leaf Strauss bascule span, a swing span, and a vertical lift span. The swing span and vertical lift span consisted of full electrical rehabilitations that includes new PLC-based control systems, flux vector drives, conduit systems, and off-site remote-control operations. Prepared design drawings, calculations for equipment sizing, bill of materials and cost estimates.
04/19 – 04/22	Welland Canal Bascule Bridge 6 Major Rehabilitation Design, St. Catherines, Ontario – St. Lawrence Seaway Management Corporation Movable Bridge Electrical Engineer for major bridge rehabilitation project. Work included complete drive machinery rehabilitation, span brake replacement, span lock replacement (per the SLSMC's Bridge Lock Strategy Report), toe bearing de-icing system, replacement of power distribution and electrical equipment, replacement of interior and exterior lighting, replacement of movable span festoon cable systems that provide power to the moving span, replacement of bridge span lock starters and brake timing delay to wind up machinery, rebalance of the spans using dynamic strain gaging, and all span brake testing.
01/16 – Present	Warsaw Road Swing Bridge, Peterborough, Ontario, Canada - Public Works and Government Services Canada Movable Bridge Electrical Engineer responsible for inspection of movable span electrical systems. This swing bridge is located on Parkhill Road, in the City of Peterborough. It was constructed in 1956. The Warsaw Road Bridge is approximately 31.1m long, unequal arm, through-plate girder swing bridge. The short arm of the bridge is approximately 10.0m, and the long arm is approximately 21.1m. The width of the bridge is approximately 10.3m with a roadway of approximately 7.3m. Comprehensive investigation report was created utilizing the latest versions of the CSA and AASHTO movable bridge design requirements to develop multi-leveled repair options for each electrical subsystem. A cost estimate was created to supplement each rehabilitation level option. Recommendations were outlined within report taking into account the proposed structural and mechanical recommendations to ensure proper reliable service for the increased roadway and waterway traffic.
06/09 – Present / 09/96-09/03	Madison Avenue Swing Bridge, New York, NY -New York City DOT Movable Bridge Electrical Engineer for the construction inspection of the major mechanical and electrical rehabilitation of a 307-foot, four-lane swing bridge over the Harlem River between Manhattan and the Bronx.

	Firm employed by		Hardesty & Hanover, LLC	
	Name	Frederick Wetekamm, III, PE	Years of relevant experience with this employer	7
	Title	Senior Project Engineer	Years of relevant experience with other employer(s)	32
Degree(s) / Years / Specialization			M.E. / 2018 / Construction Management B.S. / 1984 / Civil Engineering	
Active registration number / state / expiration date			Professional Engineer: 25369 / LA / 3/31/2026 Certifications: Maintenance and Rehabilitation of Historic Bridges (LADOTD); ATSSA Traffic Control Supervisor and Flagger; FHWA NHI #139005, Driven Pile Foundations – Construction Monitoring	
Year registered	1993	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Constructability Review	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
01/20 – Present	H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Constructability Review Engineer for the bridge assessment, complete rehabilitative engineering design, and road design services required for the partial replacement of the Almonaster Ave Bridge and a new connector road. The Almonaster Ave Bridge crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. 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 the connecting roads were required to return this bridge to its full operating capability. The road design services included a new alignment for the connecting road including all drainage structures. H&H also developed a hydraulic study and a site plan that included several retention ponds for drainage improvements. Other services included environmental, geotechnical, and pavement design. Coordinated with Entergy New Orleans for ROW use for the new connector roads, US Army Corps of Engineers for reconstruction of the existing roadway over the floodwall, and CSX railroad for implementing a schedule for track time during the construction phase.			
01/19 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Constructability Review 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 Blvd to provide a facility carrying three lanes of traffic in each direction. The new bridge is constructed as an independent structure adjacent and north of the existing bridge with a new operator house. The project includes rehabilitation to the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane. Scope includes improvements to bridge and roadway approaches for eastbound and westbound traffic as well as development of a Traffic Control Plan.			
08/18 – 08/21	Lake Pontchartrain Causeway Safety Bay Improvements (CE&I), Jefferson and St. Tammany, LA – GNOEC Project Engineer responsible for providing construction engineering and inspection services required during the safety bay improvement project for fabrication of pre-stressed piles and girders, caps and decks as well as all other construction activities including field monitoring, documentation, preparation of daily reports, participation in construction progress meetings, construction close-out and testing and acceptance of construction materials.			
09/22 – Present	I-10 & I-12 College Dr Flyover Ramp Design- Build, Baton Rouge, LA – LADOTD Construction Quality Control Manager for design and construction quality control/quality assurance for this road and bridge design-build project which is located at the I-10 West exit to College Drive, in advance of the I-10 & I-12 West merge. H&H serves as Design-Builder's Construction Quality Control Firm (CQCF) and oversees all Design Quality Control and Construction Quality Control activities for the project. Responsibilities include the development and implementation of Comprehensive Quality Plan to ensure the design and construction conforms to all specified requirements. H&H will develop, maintain, and update Contractor			

	Quality Management Plan and provide qualified Inspectors, material sampling, testing, independent testing labs to ensure contractors and off-site fabrication facilities meet project specifications and testing and acceptance of construction materials.
02/23 – Present	H.015028.6 Bayou Barataria Movable Bridge Replacement (CE&I), Phase 1, LA 302, Jefferson Parish, LA - LADOTD Project Engineer responsible for managing construction contract administration and construction engineering and inspection services for the Bayou Barataria Movable Bridge Replacement. This project consists of construction of the movable swing span bridge, operator's house, associated substructure elements, and pier protection system along relocated LA 302 in Jefferson Parish. Phase 2 consists of construction of new roadway alignment for LA45 to tie into LA 302 in Jefferson Parish. Assisted in coordination of utility location and relocations for Entergy, Cox, Jefferson Parish Water Dept. and Alpine Exploration (LNG lines).
07/07 – 08/18	S.P. No. 742-36-0117 Fleur De Lis Drive Reconstruction Phase II – Veterans Blvd to 30th Street, Orleans Parish, LA – LADOTD Project Engineer in responsible charge providing construction engineering inspection services for the Fleur De Lis Roadway Rehabilitation Projects Phases 1, 2, and 3 Program which were complete reconstruction of the roadway and drainage. Coordinated utility conflict resolutions with Entergy, Entergy Gas, and Sewerage and Water Board.
07/07 – 11/10	South Louisiana Submerged Roads Program, Orleans Parish, LA – LADOTD Project Engineer in responsible charge providing construction engineering and inspection services for the South Louisiana Submerged Roads Program which provided repairs and resurfacing of 56 roads in Orleans, Jefferson, and St Bernard Parishes that were damaged from Hurricane Katrina. The project was funded by FHWA's Emergency Relief Program. Responsibilities included testing and acceptance of construction materials. Provided diligent oversight on the program and closely monitoring activities; coordinated revised construction method with the Construction Program Manager to save over \$10 million for additional roadways to be added to the programs.
11/09 – 12/12	S.P. No. 742-36-0008 Earhart Blvd. Roadway Reconstruction – Hamilton Street to Pine Street Project, Orleans Parish, LA – LADOTD Project Engineer in responsible charge providing construction engineering inspection services for Earhart Blvd. Rehabilitation Project. Directed all aspects of the program which was a complete reconstruction of the roadway and drainage from Hamilton to Fern. Responsibilities included testing and acceptance of construction materials.
11/15 – 03/18	S.P. No. 006196 Wisner Bridge Replacement, Orleans Parish, LA – LADOTD Project Engineer in responsible charge for contract administration, supervision of the Project Engineer, and LADOTD Certified Inspectors for construction inspection. This project scope was to replace the 1955 bridge over I-610 and Norfolk Southern Railroad with a new structure. The 1,500-foot-long new bridge consists of prestressed concrete pilings, with a combination of precast prestressed concrete girder spans and steel girder spans over I-610. Coordinated with Norfolk Southern for track time during construction for setting girders and bridge concrete work over the track. Worked with the Designer/Engineer of Record, the City of New Orleans, and the LADOTD Program Manager from the inception of the project to provide the most effective design to meet the current needs of the public utilizing the current LADOTD BDEM and LSSRB. The bridge provides a dedicated protected bike lane.
01/07 – 12/17	Area Engineer, LADOTD, District 02, LA – LADOTD Project Coordinator in responsible charge providing for direct oversight on all construction projects including five bridge replacement projects, six roadway restoration projects, the federally funded Submerged Roads Program (55 streets, \$118 million), the federally funded Paths to Progress Program (69 streets, \$90 million), the Regional Transportation Management Center (\$13.9 million), and several Corps of Engineers flood protection projects on the state ROW. As the Department Coordinator, provided technical oversight, interpretation, and review on department standards, policies, testing and inspection procedures, funding expenditures, and documentation; and constantly monitored the quality control methods of contractors, quality assurance expectations of consultants, traffic control plans, project schedules (bar chart and CPM), change orders, and pay requests to confirm compliance with the contract requirements. Provided diligent oversight on the program and closely monitoring activities; coordinated revised construction method with the Construction Program Manager to save over \$10 million for additional roadways to be added to the programs. Provided necessary coordination with utilities and railroads for projects.

	Firm employed by		Hardesty & Hanover, LLC	
	Name		Erik Diaz, PE	Years of relevant experience with this employer
	Title		Senior Structural Engineer	Years of relevant experience with other employer(s)
Degree(s) / Years / Specialization			B.S. / 2008 / Civil Engineering	
Active registration number / state / expiration date			Professional Engineer: 37712 / LA / 09/30/2027 Certifications: NHI 130056 Safety Inspection of In-Service Bridges; Maintenance & Rehabilitation of Historic Bridges (LADOTD); NHI 130081 Load and Resistance Factor Design (LRFD) For Highway Bridge Superstructures; NHI 130078 Fracture Critical Inspection Techniques for Steel Bridges	
Year registered	2013	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities			Structures / Bridge Lead / Load Rating Engineer – Meets MPR 3 and 4	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
01/20 – Present	H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Bridge Engineer for the bridge assessment, complete rehabilitative engineering design, and road design services required for the partial replacement of the Almonaster Ave Bridge and a new connector road. The Almonaster Ave Bridge crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. 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 the connecting roads were required to return this bridge to its full operating capability. Erik provided the design of steel plate girders for the bridge. The road design services included a new alignment for the connecting road including all drainage structures. H&H also developed a hydraulic study and a site plan that included several retention ponds for drainage improvements. Other services included environmental, geotechnical, and pavement design.			
08/19 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Senior Bridge 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 Blvd to provide a facility carrying three lanes of traffic in each direction in an urban area. The new bridge will be constructed as an independent structure adjacent and to the north of the existing bridge with a new operator house. The 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. Erik provided the design of steel plate girders for the bridge. All design work is in accordance with LADOTD Standards and Specifications and reviewed by LADOTD. Load rating was performed using AASHTOWare BrDR load rating software.			
02/22 – 02/25	SR826 Palmetto DB Design and Post, Miami-Dade County, FL – Florida DOT Bridge Engineer for this bridge located in downtown Miami urban area. The bridge design requirement was to keep the existing bridge and roadways open to traffic while widening construction was being performed. H&H performed design calculations for concrete superstructure and steel substructure elements for bridge widening and created details and plan sheets for superstructure and substructure elements for bridge widening.			
07/16 – 07/17	Two US-11 Bascule Bridges over Lake Pontchartrain Rehabilitation, Jefferson and St. Tammany Parishes, LA – LADOTD Senior Movable Bridge Structural Engineer for the comprehensive rehabilitation of one bascule bridge and replacement of another bascule bridge over Lake Pontchartrain. The 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.			

12/17 – 11/18	Widening of I-12 Bridges in Livingston Parish, Livingston Parish, LA - LADOTD Bridge Engineer for this project located on the heavily traveled I-12 in Livingston Parish, LA. Existing bridge traffic was required to be maintained during construction. H&H designed reinforced concrete slab spans, PPC girder spans, and reinforced concrete pile bents. Detailed and created plans for slab spans, PPC girder spans, and reinforced concrete pile bents. H&H also provided construction support by reviewing submittals and responding to RFIs.
12/12 – 10/15	Houma Navigation Canal Bridge Rehabilitation, Houma, LA – LADOTD 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.
08/20 – 12/22	SR 605 Bascule Bridge Over Industrial Waterway, Harrison County, MS – Mississippi DOT Senior Bridge Engineer performing the bridge load rating for movable and fixed bridge approaches. Erik contributed to the structural design for the comprehensive rehabilitation of this bascule bridge over the Industrial Waterway. The 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.
08/15 – 07/19	Vermillion River Vertical Lift Bridges Rehabilitation, Vermillion Parish, LA – LADOTD Senior Bridge Engineer for the inspection, rating, and final rehabilitation recommendations report for two steel vertical lift bridges over the Vermillion River. The work on this project included inspection and load rating to identify components of the bridge to be rehabilitated and evaluation of various alternatives for strengthening the bridge and increasing vehicular vertical clearance. H&H produced engineers cost estimate for repairs, and prepared final report of recommendations.
06/22 – 08/23	SR-609 Movable Bascule Bridge Rehabilitation, IDIQ Master Bridge Design Contract, Ocean Springs, MS – Mississippi DOT Structural Engineer/Structural Inspector responsible for the design, plan review, and quality control for full rehabilitation of SR-609 bascule bridge as a task-order to the IDIQ Master Bridge Contract, which includes engineering assessment, structural and geotechnical design for bridges and retaining walls; hydraulic design for bridges; design for roadway, traffic signals plans, ITS, and roadway lighting; as well as design and constructability review services. All designs will be completed in accordance with AASHTO, FHWA, and MDOT guidelines and specifications.
11/21 – 01/23	H.014363.5 Sidewalk Improvements to Conform to ADA Guidelines, Slidell, LA – LADOTD Project Engineer for various design services including preliminary plans, final plans, construction engineering, project proposal plans, and inspection for LADOTD Sidewalk Improvements to Conform to ADA Guidelines. The project begins at the intersection of LA 1091 (Robert Blvd) with US 190 (Gause Blvd) in the city limits of Slidell, Louisiana, then continues North along LA 1091 for 2.0+/- miles to a location 175 ft. north of the intersection of LA 1091 with Country Club Blvd. The survey will extend along all major side roads 50 ft. from the PT of the curbing in each direction. The project includes providing various design services including preliminary plans, final plans, construction engineering, project proposal plans, and inspection for LADOTD Sidewalk Improvements to Conform to ADA Guidelines.
05/19 – 08/19	Seabrook Bascule Bridge, New Orleans, LA – Port of New Orleans Structural 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.
12/15 – 10/19	UPRR Angleton Bridge over the San Bernard River Replacement of Swing Bridge with New Vertical Lift, Sweeny, TX UPRR Lead Senior Structural Engineer for the design and construction of a new through plate girder vertical lift bridge over the San Bernard River near Sweeny Texas. The project included design of new steel through plate girder vertical lift, bridge protection cell (dolphin), approach spans and construction management. Erik provided the design of steel plate girders for the bridge. Erik provided the design of steel plate girders for the bridge. This project also included emergency bridge repairs due to failure of bridge pier from scour produced by Hurricane Harvey flooding.

	Firm employed by		Hardesty & Hanover, LLC		
	Name		John Corven, PE	Years of relevant experience with this employer	25
	Title		Lead Structural Engineer	Years of relevant experience with other employer(s)	22
Degree(s) / Years / Specialization			M.S. / 1979 / Engineering B.S. / 1978 / Civil Engineering		
Active registration number / state / expiration date			Professional Engineer: 38309 / LA / 03/31/2026		
Year registered	2013	Discipline	Civil Engineering		
Contract role(s) / brief description of responsibilities			Structures / Bridge Lead – 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).				
01/21 – 02/25	SR 826/Palmetto Expressway Capacity Improvement Design-Build, Miami-Dade County, FL – Florida DOT Bridge Technical Advisor for this project which improves operations with an additional SB General purpose lane, auxiliary lanes, and improved shoulder widths, requiring major modifications to the NW 103rd St interchange. The project also includes revised access to the NB and SB express lanes, requiring a new toll site and improvements to the adjoining frontage road system. H&H is the lead designer, responsible for roadway, drainage, permitting, traffic control, tolling, and bridge design.				
02/12 – 06/22	I-59 / I-20 Elevated Interstate, Birmingham, AL – Alabama DOT Chief Engineer responsible for the design of eight, steel curved-plate girder bridges with spans of over 300 ft. on radii as small as 600 ft. in addition to all fracture critical steel members on the project. These bridges were part of the \$700 million project to replace Interstate 59/20 through the Central Business District of downtown Birmingham, AL. The project, which includes 1 million square feet of elevated bridge deck, was constructed in less than 12 months, and plays a significant role in the wider revitalization of the central business district.				
04/17 – Present	I-395 Segmental Bridges, Miami, FL – Florida DOT Chief Engineer for the design of the superstructure and performing the load ratings. H&H is designing seven new precast segmental bridges that are a part of the SR 836 / I-95 / I-395 corridor upgrade. 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). Construction is scheduled to be completed in late 2027.				
06/20 – 12/20	Roosevelt Bridge Emergency Post-Tensioning Repairs, Stuart, FL – Florida DOT Chief Engineer for the emergency repairs to the twin, 4,500-ft.-long post-tensioned segmental bridges that carry US Hwy 1 over the St. Lucie River. During a routine biannual inspection by Florida DOT in 6/2020, inspectors found significant cracking, leading to the closure of the north- and south-bound bridges. The cracking was the result of post-tensioning tendon failures due to excessive corrosion. The engineering team was mobilized the next day under emergency conditions. Within 5 days, the bridges were inspected and analyzed, such that the north-bound 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 11/2020. The work included partial deconstruction and then reconstruction of the segmental bridge and the addition of new post-tensioning tendons.				
9/24 – Present	Whiskey Creek Bridge Rapid Superstructure Replacement, Shasta County, CA – Caltrans Chief Engineer for the superstructure replacement of a three span steel plate girder bridge over the Whiskeytown Lake in Shasta County, California. This project includes a rapid, 2-stage construction, superstructure replacement to remove the existing T-1 Steel superstructure and replace it with new steel plate girders. Due to limited sight access and sensitive aquatic resources near the site, the superstructure replacement will utilize launched plate girders with over 300' spans. Due to the emergency scenario, the design phase of this project is being delivered in less than 12 weeks.				

01/17 – 12/20	Sunshine Skyway Bridge, Tampa, FL – Florida DOT Designer/Investigator/Specialty Engineer PM for this bridge that carries I-275 over Tampa Bay. This bridge includes 8,860 ft. of precast segmental spans and features 1,200-ft. cable-stayed main span. An original design team member, John worked with the stay cable fatigue testing, transverse analysis of the main span box girder (95'-7"), independently reviewed main pier foundations for ship impact (12,000 kips). In the early 2000's, John served as lead investigator for the post-tensioning tendons of the post-tensioned superstructure. Most recently, John oversaw the technical review of biennial inspections of all bridge elements in the ongoing asset management contract.
2/21 – 12/21	Sam Houston Tollway Ship Channel Bridges, Houston, TX – Harris County Tollway Authority Chief Engineer who provided engineering design quality control for engineering and plan modifications for the replacement of the Sam Houston Ship Channel Bridges. The main span unit of the new Sam Houston Ship Channel Bridge (HSC Bridge) replace the existing three-span concrete box girder bridge on the Sam Houston Parkway near Beltway 8 in Houston, TX. The new bridges are the centerpiece of a program to widen the Sam Houston Tollway. The new design provided eight lanes for vehicular traffic and more than 187 feet of vertical clearance for navigation, allowing for future widening and deepening of the channel by the Port of Houston. The southbound bridge was constructed next to the existing bridge. The existing northbound bridge was reconstructed after the southbound side was complete.
11/02 – 02/09	Florida Keys Segmental Bridges Post-Tensioning Rehabilitation, Monroe County, FL – Florida DOT Project Manager for an innovative inspect-maintain contract for the post-tensioning rehabilitation of 11 miles of precast segmental span-by-span bridges constructed in the Florida Keys. Four bridges were involved - 7 Mile Bridge, Long Key Bridge, Channel No. 5 Bridge, and Niles Channel Bridge. All the bridges were built span-by-span using external longitudinal post-tensioning tendons. The work included inspections of the post-tensioning systems including visual inspections of external tendons, vibration testing, pour-back removals, and non-destructive visual inspections using endoscopes. The team then performed the repairs to rehabilitate the post-tensioning systems. The 445-foot spans of these four bridges contained over 66 miles of longitudinal post-tensioning tendons.
01/80 – 11/81	Red River Bridge, Boise, LA – LADOTD Bridge Designer performing the transverse analysis and design of the superstructure and the design of the main piers and foundations. The Red River Bridge is a cast-in-place, balanced cantilever segmental bridge near Boise, LA. The main span lengths of the bridge were 360-, 370-, and 350-ft.
01/11 – 12/18	Post-tensioned Box Girder Design Manual, Washington, DC - Federal Highway Administration Co-principal Investigator/Principal Author of the team from Lehigh University working on a seven-year-long Federal Highway Administration study titled "Advancing Steel and Concrete Bridge Technology to Improve Infrastructure Performance." As part of the study, Mr. Corven authored the "Post-Tensioned Box Girder Design Manual" and produced an instructional video series that presented details for improved inspection of post-tensioning tendons.
03/91 – 08/93	Bridge at Pimmit Run, Washington, DC - Federal Highway Administration Chief Engineer responsible for developing design concepts and directed the final design. The project included the re-decking of a 340-foot by 73-foot riveted steel girder bridge on the George Washington Parkway in Washington, D.C. The new deck system was a precast post-tensioned segmental flat slab. All construction activity for the complete deck replacement took place in five weekends.
02/09 – 08/10	Cross Street Bridge, Middlebury, VT - Town of Middlebury Engineer of Record for the Cross Street Bridge, the first major design-build project in Vermont. The 460-foot-long bridge crosses over Otter Creek at Middlebury, VT. The bridge features a 240-foot simple span main span comprised of spliced, post-tensioned I-girders, the largest application of its type in the United States. The spliced girder main span is comprised of a modified New England Bulb-Tee Girder with a concrete strength of 10,000 psi and constant beam depth of 10 feet. The girders were cast in three segments for transport and erection and used five post-tensioning tendons to splice the segments into a single unit.

	Firm employed by		Hardesty & Hanover, LLC		
	Name		Dennis Gowins, PE	Years of relevant experience with this employer	17
	Title		Senior Structural Engineer	Years of relevant experience with other employer(s)	30
Degree(s) / Years / Specialization			MS / 1990 / Civil Engineering BS / 1978 / Civil Engineering		
Active registration number / state / expiration date			Professional Engineer: 24468 / LA / 09/30/2027		
Year registered	1991	Discipline	Civil Engineering		
Contract role(s) / brief description of responsibilities			Structures / Bridge 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).				
04/17 – Present	I-395 Segmental Bridges, Miami, FL – Florida DOT Senior Structural Engineer for the design of the superstructure and performing the load ratings. H&H is designing seven new precast segmental bridges that are a part of the SR 836 / I-95 / I-395 corridor upgrade. 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). Construction is scheduled to be completed in late 2027.				
07/17 – 06/20	Orlando South Ultimate Interchange Improvements, Orlando, FL – Florida’s Turnpike Enterprise Senior Structural Engineer assisting with concept development, coordination, and project oversight of a complex interchange, including system and service movements. The project includes an evaluation of a complex interchange that provides both direct and indirect ramping between Orange Blossom Trail and the adjacent two limited access highways. The project goals included: construction of direct connection ramps between freeways, an ultimate 10-lane typical section of the turnpike, implementation of AET, consideration of express direct connections, and improvement of surface street operations with two new reliever interchanges. The recommended configuration included improvements to systems interchange, modification to two adjoining interchanges, and new proposed service interchange.				
01/21 – 02/25	SR 826/Palmetto Expressway Capacity Improvement Design-Build, Miami-Dade County, FL – Florida DOT Senior Structural Engineer responsible for roadway, traffic control, tolling, and S&PM design services. This project improves operations with an additional SB General purpose lane, auxiliary lanes, and improved shoulder widths, requiring major modifications to the NW 103rd St interchange. The project also includes revised access to the NB and SB revises express lanes, requiring a new toll site and improvements to the adjoining frontage road system. H&H is the lead designer, responsible for roadway, drainage, permitting, traffic control, tolling, and bridge design.				
02/12 – 06/22	I-59 / I-20 Elevated Interstate, Birmingham, AL – Alabama DOT Senior Bridge Engineer responsible for the design of eight, steel curved-plate girder bridges with spans of over 300 ft. on radii as small as 600 ft. in addition to all fracture critical steel members on the project. These bridges were part of the \$700 million project to replace Interstate 59/20 through the Central Business District of downtown Birmingham, AL. The project, which includes 1 million square feet of elevated bridge deck, was constructed in less than 12 months, and plays a significant role in the wider revitalization of the central business district.				
09/05 – 06/06	Emergency Repairs for the I-10 Twin Span Bridges over Lake Pontchartrain, New Orleans, LA – LADOTD/FHWA Structural Engineer responsible for emergency repairs made to the 5.4-mi.-long twin structures after damage Hurricane Katrina. As a subconsultant he provided all engineering and 24-hour continuous construction services to support the emergency repairs. Phase one of the emergency repairs was carried out in less than one month, 17 days earlier than initial estimates. The second phase of the project included reconstruction of the westbound structure. The bridge twin structures consist of 436, 65-ft. spans founded upon 54-in. cylinder pile bents. Repair procedures included new bents, helper bents, girder support saddles, pile jackets, deck repairs, jack supports, new neoprene bearings, new Teflon bearings, curb repairs, substructure				

	modifications to accept ACROW bridges, erection equipment, span removal procedures and maintenance of traffic plans. Construction was simplified with the use of SPMT's. The project received numerous national awards.
08/14 – 10/15	I-269 over Coldwater River, Marshall County, MS – Mississippi DOT Senior Bridge Engineer responsible for the seismic analysis of this 4,054-ft.-long, 62 span bridge (17 units) carrying I-269 over Coldwater River. The 98-ft.-wide bridge carries six lanes of traffic with barriers. The 65-ft. spans are comprised of 9 Type III AASHTO beams on 11.5-ft. spacings with an 8-in. concrete deck. The bridge is supported on precast concrete pile bents with 24-in. 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.
03/08 – 08/08	Widening of Florida's Turnpike from Atlantic Boulevard to Sawgrass Expressway, Broward County, FL – Florida DOT Structural Department Manager for the widening, which included a 6.8-mi.-long toll-road improvement project from Atlantic Blvd to Broward County Line. The project included the outside widening from six to eight lanes, one new bridge, the replacement of three existing bridges and the widening of five existing bridges. The bridge widening included those over Pompano Canal for SFWMD. In addition, the project includes a 4,800-ft.-long box culvert, over three miles of noise walls as well as MSE, tie-back and sheet-pile retaining walls.
06/06 – 03/07	Replacement and Rehabilitation of the Route LA-70 over Belle River Bridge, Assumption Parish, LA – LADOTD Project Manager/Structural Engineer leading the effort to replace and rehabilitate this structure. The approach aprons, pontoon structure, fender system, and associated rope/pulley opening mechanism of the existing 30-ft. by 120-ft. pontoon swing-span bridge were replaced/upgraded to accommodate two lanes of HS-20 loadings on the new pontoon structure. The design also included replacement/upgrades of the associated mechanical and electrical systems in addition to the structural evaluation on the new pontoon structure.
01/06 – 06/07	Widening of the Huey P. Long Bridge over the Mississippi River, Jefferson Parish, LA -- New Orleans Public Belt Railroad Project Manager/Structural Engineer for the independent design review of the proposed widening of the 1,850' main span cantilever truss spanning the Mississippi River. The main bridge consisted of a 790-ft. main span in conjunction with two 532-ft. cantilever side spans. In addition to this main bridge, an approach through truss of 532-ft. was analyzed for the proposed widening. The proposed widening to the existing bridge was to accommodate six 11-ft. lanes in addition to two rail lines. The current bridge can only accommodate four 9-ft. lanes in addition to the two existing rail lines. The analysis also included the investigation of the substructure elements.
06/08 – 12/08	Restoration of the France Road Terminal Berth 4, New Orleans, LA – Port of New Orleans Design Engineer responsible for the rehabilitation, design, and pile retrofits for this 300-ft. x 12-ft. wharf section and adjacent 80-ft. x 30-ft. entrance ramp. The design-build wharf project involved the retrofit of 260 steel pipe piles and other areas necessary to support the required permit, cranes, excavator, and extreme conveyer loadings. The pilings had significant corrosion and were retrofitted with a unique concrete infill/PT bar system.
01/01 – 02/02	Cooper River Bridge (Arthur Raven Jr. Bridge) – South Carolina DOT Design Engineer responsible for all the site-specific seismic design and all approach structures (steel plate girders and prestressed concrete girders). The 13,200-ft. structure carries eight (four in each direction), 12-ft. lanes of traffic 180 ft. above the river. Foundation elements were founded on cooper marl, and the design accounted for the possibility of liquefaction during a seismic event and ship impact. The total length of the structure was 13,200 ft., with a main span of 1,300 ft. between the towers and was 180 feet above the river. The steel plate girders were launched into final position.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Steven Harlacker, PE, SE	Years of relevant experience with this employer	28
	Title	Principal / Senior 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 / 09/30/2026		
Year registered	2012	Discipline	Structural and Civil Engineer	
Contract role(s) / brief description of responsibilities		Movable Bridge Structural Engineer - Meets MPR 7		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage,” “designed girders,” “designed intersection,” etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
05/18-present	Replacement of the Connecticut River Bridge, Old Saybrook and Old Lyme, CT - Amtrak Project Manager / Engineer of Record for the replacement of this movable bridge carrying two tracks of Amtrak Northeast Corridor traffic over the Connecticut River. Feasible study alternatives for rehabilitation or replacement were determined, and these were analyzed for estimated costs and for comparative benefits as related to the degree to which project needs are met. Navigation clearance requirements are taken from a Navigation Study previously prepared by H&H for the Connecticut River. Cost analysis and impacts to right-of-way, utilities, tidal marshlands, and navigation were investigated. A set of highly ranked alternatives was selected, termed “Best Solution Study Alternatives,” each providing Amtrak combined advantages of cost and of technical benefits. Estimated construction costs for the best solution study alternatives were more than \$100 million. Included were alignment and profiles layout for various rail gradient options. The existing bridge, constructed circa 1907, is a two-track, open deck, electrified railroad bridge, 1,564-foot-long, consisting of seven thru-truss spans, two deck girder spans, and one 158-foot Scherzer-type rolling lift span. In recent years, the draw span of the bridge has been operated approximately 3,700 times annually to accommodate navigation on the Connecticut River.			
05/18-present	Cribari Swing Bridge over the Saugatuck River, Westport, CT - Connecticut DOT Project Manager for a rehabilitation Studies Report of this historic swing bridge (the oldest movable span in Connecticut). Preliminary structure and alignment information for the development of the Environmental Assessment and other NEPA/CEPA activities. To support the development of environmental documentation and comply with National and State environmental policies, H&H has developed preliminary structural concepts and roadway alignments for multiple permanent and temporary bridge solutions. Each of these alternatives have been developed to support CTDOT's extensive public outreach program, which includes participation in the Project Advisory Committee (PAC) presentations to communicate with key stakeholders and gather information for incorporation in Environmental Documents. The alternatives have also been developed in sufficient detail to determine environmental impacts and allow the designation of a preferred alternative. Our involvement includes the development of complex and highly detailed three-dimensional visualization models to illustrate possible solutions and foster PAC participation and engagement.			
02/15 – 06/18	Norwalk River (Route 136) and Yellow Mill (Route 130) Bascule Bridges Storm Hardening Design Services – Connecticut DOT Project Manager for the rehabilitation and storm hardening of these bridges, damaged by flooding due to Superstorm Sandy. Directly responsible for structural, mechanical, & electrical design team management. This project includes provisions to improve the facility's performance during similar storms and provisions to rapidly restore the facility to functionality quickly in the event of a storm that exceeds the 100-year design storm.			
12/11 – 05/12	Saugus Drawbridge Rehabilitation, Saugus, MA – Massachusetts Bay Transportation Authority Movable Bridge Structural Project Engineer / Engineer of Record 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.			

02/16 – 11/17	Chapel Street Swing Bridge Rehabilitation & Painting, New Haven, CT – City of New Haven Project Manager for the design of the Phase 1 Rehabilitation and the Phase 2 Painting contracts. This project included the replacement of mechanical and electrical components, selective superstructure rehabilitation, substructure, and fender work. H&H performed construction inspection services during the Phase I Structural, Mechanical, and Electrical rehabilitation project. Services included field inspection in accordance with the current CTDOT Construction Manual and CTDOT Standard Specifications for the duration of the construction project. Responsibilities included conducting field inspections, attending progress meetings and special meetings as required, and assisting in resolving contract inquiries and addressing field changes. H&H was also responsible for ensuring that the Contractor adhered to all contract requirements and made all required submittals in a timely manner. To support field inspection, H&H office engineers were responsible for maintaining records and documenting the progress of the contract work. H&H responsibilities also included reviewing the Contractor's CPM, bar charts, and/or other project schedules and reviewing contractor-submitted requisitions for payment, which included certifying that quantities submitted for payment are accurate.
07/15 – 03/17	Sarah M. Long Vertical Lift Bridge, Portsmouth, NH & Kittery, ME – Maine DOT Movable Bridge Structural Engineer/QA Engineer responsible for preliminary concept development, preliminary design, and final design services for this complete vertical lift bridge replacement. Responsibilities included developing preliminary design concepts, conducting cost evaluations, and performing engineering evaluations, as well as creating preliminary and final design documents for the chosen 300-foot-long steel box girder lift bridge alternative. QC activities ensure that the lift span design meets the requirements of the Quality Plan. Preliminary concept development involved evaluating variable alignments, structural types, and materials. The selection of a best-fit structure considered bridge engineering, vessel collision resistance, span operation, aesthetics, and construction.
03/11 – 04/13	Murray Morgan Vertical Lift Bridge Rehabilitation Design-Build, Tacoma, WA – City of Tacoma Movable Bridge Structural Engineer/QC Engineer responsible for supervising the structural design aspects of the complete structural, mechanical, and electrical rehabilitation of this 100-year-old, National Register of Historic Places eligible lift bridge. The scope included total design services from preliminary engineering through construction support services as part of a Design-Build team with PCL Constructors. As the Structural Engineer in Charge, this project required oversight of a multi-disciplinary design effort that included bridge member strengthening and seismic upgrades. As QC Engineer, reviewed and verified preliminary and final design documents prepared by multiple collaborators for contract compliance.
02/10 – 12/10	Fairhaven-New Bedford Swing Bridge Rehabilitation, New Bedford, MA – Massachusetts DOT Movable Bridge Project Engineer / Engineer of Record during the preliminary investigation of the source and possible remedy of cracks in the bottom chord of the swing span of the swing bridge carrying Route 6 over the Acushnet River. The preliminary investigation included the development of a comprehensive computer model and subsequent fatigue analysis to determine the approximate constant amplitude fatigue stress range of this 120-year-old bridge and to estimate the remaining fatigue life of the structure. The Preliminary Structures Report presented the results of the fatigue analysis, focusing on rehabilitation techniques available to the department to minimize the likelihood of future crack development.
12/09-05/10	Rehabilitation of the Grand Avenue Swing Bridge, New Haven, CT - City of New Haven Movable Bridge Project Engineer / Engineer of Record leading the preparation of an alternatives study report to provide the city with viable rehabilitation alternatives for the Swing Span. The study focused on methods of supporting the span during extensive operating machinery replacement, alternatives for bridge deck replacement, an investigation of the bridge approaches, scour susceptibility of the original piers, and mitigation techniques to allow the bridge approaches and piers to remain in place. The study provided for a rehabilitation scope of services and order of magnitude cost estimates for the recommended scope and cost and considerations associated with more and less involved rehabilitation alternatives. An on-site condition inspection was also conducted to confirm that the proposed scope was adequate to address the bridge's condition.
11/09 –12/09	First Lieutenant Derek S. Hines Memorial Swing Bridge Design-Build, Amesbury MA – Massachusetts DOT Lead Movable Bridge Structural Engineer responsible for determining bid phase structural improvements to a preliminary design furnished as part of a Design-Build bid package. Bid phase design consisted of redesign of the swing girders, redesign of the pivot girder system, in-depth evaluation and design of the bridge deck, and determination of superstructure loads using the AASHTO LRFD Movable Bridge Code to allow the design of a new pivot pier. Coordination between structural and geotechnical engineers was essential for the design team to complete the pivot pier computations and allow the contractor to make an accurate bid.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Benjamin Hawthorne, PE, SE	Years of relevant experience with this employer	20
	Title	Senior Structural Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S. / 2005 / Civil Engineering		
Active registration number / state / expiration date		Professional Engineer: 44620 / LA / 09/30/2026		
Year registered	2011	Discipline	Structural Engineer	
Contract role(s) / brief description of responsibilities		Movable Bridge Structural Engineer - Meets MPR 7		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
03/20 – Present	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 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.			
07/13 – 05/19	Sarah M. Long Vertical Lift Bridge, Kittery, ME – Maine DOT Movable 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.			
05/18 – 08/18	Cribari Swing Bridge over the Saugatuck River Rehabilitation, Fort Lauderdale, FL – Florida DOT Movable Bridge Project Engineer / Engineer of Record for a rehabilitation Studies Report of this historic swing bridge (the oldest movable span in Connecticut). Responsible for developing the preliminary structure type study and alignment alternatives in support of the Environmental Assessment. Structure type study included investigation of feasible alternatives and preliminary structural analysis of concepts. Assessed general structure dimensions to demonstrate visual impact of the alternatives to the public and other stakeholders.			
06/18-09/21	Replacement of Amtrak Bridge over the Connecticut River, Old Saybrook, Middlesex County, CT - Amtrak Project Engineer / Engineer of Record for the replacement of this bridge that carries 2-tracks of electrified rail. The existing through-truss approach spans and rolling lift bascule truss span will be replaced with a new offline structure comprised of girder approach spans and a 205 feet long fixed trunnion through truss bascule span. The new structure is designed in accordance with AREMA and Amtrak policies. Ben was responsible for leading the design and coordination of all aspects related to the movable bascule truss span – from the drilled shaft foundation to the overhead catenary system (OCS). The fixed trunnion bascule utilizes a passive transition joint in the OCS and its supports are integrated into the structural system. As Deputy Project Manager, Ben oversaw the completion of the Joint Permit Application and completion of the contract documents.			

01/17 – Present	East Haddam Swing Bridge over the Connecticut River Rehabilitation, Haddam, CT – Connecticut DOT Movable Bridge Project Engineer / Engineer of Record 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, floorbeams, 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 Movable 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.
02/10 – 12/10	Fairhaven/New Bedford Swing Bridge Rehabilitation, New Bedford, MA – Massachusetts DOT Assistant Team Leader/ Movable Bridge Structural Engineer responsible for field inspection, report preparation, and structural and economic feasibility analysis of preliminary rehabilitation and replacement options for this thru-truss swing bridge. Developed truss chord member strengthening concepts including post-tensioning using high strength rods. This on-call task provided a Preliminary Structures Report for the movable segment of the Fairhaven/New Bedford Swing Bridge that carries Route 6 over the Acushnet River.
10/11 – 03/12	General Edwards Rolling Lift Drawbridge Emergency Inspection and Rehabilitation, Lynn, MA – Massachusetts DOT Assistant Team Leader/Movable Bridge Structural Engineer responsible for in-depth field inspection and report preparation of the two-span, four-leaf, rolling lift bridge and adjacent fixed span approach structures. A subsequent emergency inspection, required after deformation was noted in the rolling lift rack support, resulted in the design of a temporary strengthening system for the rack support columns.
12/09 – 01/10	Grand Avenue Swing Bridge Rehabilitation, New Haven, CT – City of New Haven Inspector/ Movable Bridge Structural Engineer responsible for field inspection, report preparation, and feasibility and economic analysis of preliminary rehabilitation and replacement options for this 220 foot-long, thru-truss swing bridge.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	James Newberry, PE, SE	Years of relevant experience with this employer	10
	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 / 09/30/2027		
Year registered	2011	Discipline	Structural Engineer, Civil Engineer	
Contract role(s) / brief description of responsibilities		Movable Bridge Structural Engineer – Meets MPR 7		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
08/16 – 02/17	Hillsborough River Vertical Lift Bridge Repair, Tampa, FL – Florida DOT Movable Bridge Structural Engineer responsible for the post-design services for vertical lift bridge, including coordination of shop drawing reviews, plans revisions, and responding to RFI's from the contractor. The project included preparation of mechanical and electrical plans to repair/rehabilitate this historical span-driven vertical lift bridge. The rehabilitation included sheave replacement, wire rope replacement, span lock repairs, and electrical system upgrades.			
01/24 - Present	Platt Street Bridge Rehabilitation, Hillsborough County, FL Hillsborough County Structural Engineer of Record responsible for design and detailing of the sidewalk improvements. H&H was retained to evaluate existing bridge components for their suitability to modify the existing sidewalks using solid aluminum plates and to provide supporting engineering analysis, and other technical documents. The Platt Street Bridge over the Hillsborough River in downtown Tampa was built in 1926 and consists of seven reinforced concrete girder approach spans and a steel girder double leaf bascule span. The roadway carries four 10-foot one-way eastbound lanes out of South Tampa and has sidewalks on both sides.			
01/19 – Present	Beckett Bridge Replacement, Tarpon Springs, FL – Pinellas County Project Engineer / Structural Engineer of Record responsible for the replacement of an existing historic single-leaf bascule bridge with a new 360-foot-long bridge that includes a single-leaf, rolling-lift, bascule span. The bridge carries Riverside Drive over Whitcomb Bayou and features two traffic lanes and a sidewalk. The movable span is 60'-9" long from center of roll to tip of the leaf in the closed position, and features steel plate girder main girders and floor beam and an Exodermic deck that spans longitudinally between floor beams. The simply supported approach spans have a typical length of 60'-0" and consist of prestressed flat slab (standard Florida Slab Beams) with substructure abutment and pier caps that 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. Responsible as EOR for approach span substructure and foundations, and retaining walls. Engineer responsible for final design of bascule span structural elements including main girders, floorbeams, counterweight, and span balance. Project Engineer responsible for oversight and coordination of work for all disciplines, and delivery of project to the County.			
08/11 – 07/13	Sargent Barge Swinging Barge (Platoon) Bridge Rehabilitation, Matagorda County, TX – Texas DOT Movable Bridge Structural Engineer / Engineer of Record responsible for design and preparation of repair plans for miscellaneous structural elements including cable anchorages for the barge span, abutments (foundations, backwall, and cap), bulkheads, and temporary work platforms. Also responsible for design of repairs to the timber approach span stringers. Project scope included replacement of the timber leveling spans with steel framed open grid decks and the operating machinery, replacement of the bridge winch machinery and controls, structural repairs, and replacement of the traffic gates and miscellaneous roadway modifications.			

09/08 – 04/09	Tamiami Swing Bridge Emergency Repairs, Miami, FL – Florida DOT Movable Bridge Structural Designer responsible for the new grid deck, stringers, and sub-stringers to replace the existing members on the swing span. Drafted all sheets in the structure plan sets. The movable bridge specialty engineering services were performed using a design-build approach as a subconsultant to a contractor. Performed in-depth field review, inspection, and measurements of the bridge to assess the conditions requiring emergency repair, clarify scope of work, and verifying the configuration, member sizes, and dimensions with limited or non-existent existing plans of the bridge. Repairs to the steel framing included replacement of deteriorated floor system and bracing members over the operating machinery including a portion of the steel roadway flooring. Repairs to the machinery included replacement of the pivot bearing bronze disk, balance wheel lower track, rack, main drive pinion, shaft and bearings, selected gear sets, speed reducer, machinery brake, machinery support frame, end wedges and end wedge electric linear actuators. Prepared shop drawings used to fabricate the steel and machinery to reduce project costs and time. The design, procurement, fabrication, installation, alignment, and testing were performed in a compressed schedule of 120 days.
06/05 – 06/09	Anna Maria Island (SR 64) over Gulf IWW Bascule Bridge Rehabilitation, Bradenton, FL – Florida DOT Movable Bridge Structural Engineer participated in plan preparations and quantity calculations. The project involved the in-depth inspection, evaluation, and rehabilitation design of a 50-year-old, 3,120-foot-long bridge with a double-leaf trunnion bascule main span. The project included bascule leaf structural steel repairs and modifications; concrete repairs, including hydro-demolition and concrete overlay of the bridge deck; cathodic protection systems; new auxiliary electrical room; replacement of the machinery frame; reconditioning of the operating machinery; replacement of the electrical power and controls; and bridge operator's facilities renovation.
07/07 – 02/08	Wilson Pigott (SR 31) over Okeechobee Waterway Bascule Bridge Rehabilitation, Fort Myers, FL – Florida DOT Movable Bridge Structural Engineer 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.
03/09 – 12/10	LaBelle Drawbridge (SR 29) Repairs & Rehabilitation, Labelle, FL – Florida DOT Movable Bridge Structural Engineer produced various designs of 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.
01/19 – Present	Beckett Bridge Replacement, Tarpon Springs, FL – Pinellas County Project Engineer / Structural Engineer of Record responsible for replacement of an existing historic single-leaf bascule bridge with a new 360-foot-long bridge that includes a single-leaf, rolling-lift, bascule span. The bridge carries Riverside Drive over Whitcomb Bayou and features two traffic lanes and a sidewalk. The movable span is 60'-9" long from center of roll to tip of the leaf in the closed position, and features steel plate girder main girders and floor beam and an exodermic deck that spans longitudinally between floor beams. The simply supported approach spans have a typical length of 60'-0" and consist of prestressed flat slab (standard Florida Slab Beams) with substructure abutment and pier caps that 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. Responsible as EOR for approach span substructure and foundations, and retaining walls. Engineer responsible for final design of bascule span structural elements including main girders, floorbeams, counterweight, and span balance. Project Engineer responsible for oversight and coordination of work for all disciplines, and delivery of project to the County. Post design work anticipated to begin in late 2023.
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.

	Firm employed by	Hardesty & Hanover, LLC		
	Name	Corey Bourgeois, PE	Years of relevant experience with this employer	2
	Title	Bridge Engineer	Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization			B.S. / 2013 / Civil Engineering	
Active registration number / state / expiration date			Professional Engineer: 42362 / LA / 09/30/2026 Certifications: NHI 130078 Fracture Critical Inspection Techniques for Steel Bridges; NHI 130092 Fundamentals of LRFR and Applications of LRFR For Bridge Superstructures; NHI 130081 Load and Resistance Factor Design (LRFD) For Highway Bridge Superstructures; NHI 130056 Safety Inspection of In-Service Bridges	
Year registered	2018	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Bridge Load Rating Engineer – Meets MPR 4	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
11/23 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Bridge 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 Blvd to provide a facility carrying three lanes of traffic in each direction. The new bridge will be constructed as an independent structure adjacent to the north of the existing bridge with a new operator house. The 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 accordance to LADOTD Standards and Specifications and reviewed by LADOTD. Load rating was performed using AASHTOWare BrDR load rating software.			
08/17 – 01/22	H.012071 US 51 Yellow Water River Bridge, Hammond, LA - LADOTD Project Manager for this slab span bridge is located on a highly traveled section of US 51 in Hammond near Southeastern University. Due to rapidly deteriorating site conditions and other political pressure, this project was expedited to a much more compressed schedule than we typically see for bridge projects. He developed alternatives to maintain traffic during construction in this critical section of highway. A unique design was chosen where the bridge will be built in phased construction to allow for a complete replacement with a median turn lane.			
04/16 – 05/19	H.012411 LA 1054 at Big Creek Bridge Replacement, Tangipahoa Parish, LA - LADOTD Project Manager for this emergency project where one of the roadways approaches completely washed out during the March 2016 flooding in Tangipahoa Parish, Louisiana. Since the bridge was a candidate for replacement, it was decided that the entire bridge should be replaced while the roadway was out of service. Corey assisted in coordinating FEMA for emergency funding while also performing all bridge design and construction support.			
05/21 – 12/22	H.014672 I-12: LA 1032 Overpass Repair, Tangipahoa, LA - LADOTD Project Manager for this emergency repair project where an over-height vehicle completely destroyed an exterior prestressed concrete girder. This required the exterior shoulder to be closed in a very busy section of I-12. Corey served as Project Manager and procured the consultant and immediately began the task order creation with one of our in-house retainer contracts. He facilitated constant communication with the consultant making sure that this priority project was kept on schedule.			
11/23 – Present	H.009730.5 In-Depth Bridge Inspection of Complex Structures, Statewide, LA - LADOTD Structural Engineer for the inspection of complex structures such as cantilever trusses, cable-stayed bridges, steel vertical lift bridges, and plate girder bascule bridges statewide under separate task orders. Inspection of two steel truss bridges (Jimmie Davis and Miller's Bluff) and a vertical lift bridge (West Fork) have been completed to date.			

03/25 – Present	H.013818 Golden Meadow Vertical Lift Bridge Rehabilitation, Golden Meadow, LA - LADOTD Structural Engineer / Load Rating for this inspection and rehabilitation project for a 200-foot-long steel vertical lift bridge. After performing an In-Depth inspection of the bridge is complete, a LRFR load rating will be performed based on the inspection findings. A recommended rehabilitation scope of work will be created and once approved by the client, the plans will begin development. This bridge is considered a Historic Preservation Priority bridge therefore the rehabilitation will need to take extra care in maintaining as much as possible of the appearance and function of the bridge to when it was first built.
05/17 – 03/22	H.000337 US 61 Bayou Manchac and Francois Bridges, East Baton Rouge & Ascension Parishes, LA - LADOTD Task Manager for this replacement project consisting of twin 300-ft.-long concrete girder bridges including load rating. The superstructure was AASHTO Type IV girders and substructure was pile bents. Some unique challenges with this project included a severe skew, continuous deck units, and the crossing being part of the Scenic Rivers Program. Corey designed all bridge features including as-designed and load rating for this \$10M project.
11/23 – Present	Waco On-System Bridge Replacements Contract No. 36-01DP5067, Waco District, TX – Texas DOT Structural Engineer for this indefinite deliverable contract. This work authorization consists of replacing seven bridges on three roadways in three different counties in the Waco area. The new structures are precast beam slab bridges. H&H evaluated options and prepared bridge alternatives memos for each bridge accompanied by cost comparisons and bridge layout exhibits. Corey provided review of the final plans and created the final construction cost estimates. H&H is also providing services throughout the construction phase.
08/18 – 06/20	H.000133 US 80 at KCS Railroad, Simsboro, LA - LADOTD Task Manager for this replacement project for a 290-ft.-long railroad overpass in a S-curve. The bridge superstructure consisted of slab spans, and an LG-36 span over the railroad. The substructure was column bents with drilled shaft foundations. This bridge had various geometric difficulties including superelevation, horizontal and vertical curvature, and railroad clearances. Corey designed all bridge features including as-designed load rating for this \$6.5M project.
03/24 – Present	H.009730.5 LADOTD Movable Bridge Manual, New Orleans, LA - LADOTD Structural Engineer responsible for the development of the LADOTD Movable Bridge Inspection Manual (including details, photos, illustrations, and specific examples); building a lesson plan and materials for the classroom training from the inspection manual; and providing classroom and field training. The manual will include bridge inspection principles and overview; movable bridge overview; mechanical, electrical, and structural inspection of movable bridges; operator house; and classroom and field training for electrical, mechanical, and structural).
11/17 – 11/21	H.012622 I-12 Hog Branch Bridge Widening, Livingston Parish, LA - LADOTD Task Manager for the third phase of widening projects along the I-12 corridor in Livingston Parish. The bridge consists of AASHTO type III girder superstructure and pile bent substructure. Corey performed load rating on the existing structure to determine if any strengthening was required. He was responsible for designing all bridge members for this \$16M project.
01/21 – 11/23	LADOTD Bridge Maintenance Section – LADOTD Load Rating Engineer tasked with overseeing the Off-System and Timber Bridge Load Rating Programs. He performed ratings on a variety of bridge types including timber, concrete, and steel structural members. He also performed load ratings for many routine and super load permits.
01/24 – Present	2021-2025 Biennial and Interim Bridge Inspection, Bronx County, Region 11, Bronx, NY – New York State DOT Load Rating Engineer for general, interim, and special inspections for 355 bridges in Bronx County. H&H is providing inspection of 41 bridges over Metro-North, Amtrak, and CSX rail lines. Railroad force account personnel (flagging) were procured directly through this contract. The inspection also includes all appurtenances such as signs and supporting structures, high mast and standard light poles, utilities and communication equipment attached to the structures. The field inspection follows the NYSDOT Bridge Inspection Manual and includes a significant amount of non-destructive testing. Corey is responsible for performing load rating calculations and conducting field inspections to verify the structure's key elements.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Roberto Vicedo, PE	Years of relevant experience with this employer	27
	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 / 03/31/2026		
Year registered	2011	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities		Bridge Load Rating Engineer - Meets MPR 4		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
03/18 – 06/19	SR 609 Bascule Bridge over Old Fort Bayou Rehabilitation, Ocean Springs, MS – Mississippi DOT Structural Engineer for developed structural rehabilitation design and provided construction phase services for 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 included inspection and rehabilitation of structural, mechanical, and electrical bridge components, roadway approaches, and development of maintenance and repair plans.			
01/11-3/17	Flagler Memorial Bridge over ICWW, Palm Beach, FL - Florida DOT District 4 Structural Engineer 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.			
05/16 -10/20	SR-A1A/North Causeway Bridge over ICWW, Fort Pierce, FL - Florida DOT District 4 Structural Engineer for the 4000-foot-long bridge replacement project which replaces a bascule span with a high-level fixed bridge that has 85-foot vertical clearance over the navigable channel. The preferred replacement fixed bridge alternative includes the FIB superstructure and spans over Old Dixie Hwy and the FEC Railway. In addition to the new bridge, the project includes extending Juanita Ave east from US-1 to Old Dixie Hwy and provisions for a new access roadway for the businesses south and north of the new bridge along SR A1A.			
02/19-Present	SR 75 (US 231) Reconstruction, SR 30A (US 98) to South Pipeline Road, Panama City, FL – Florida DOT District 3 Structural Engineer for the new 840-foot steel bridge on SR77 crossing US 231 and the CSX railroad. H&H is providing design services for the single point urban interchange at SR 77 over US 231 and CSX RR improvement project. Work includes design for roadway and drainage design of the intersection, lighting design for the entire project, and bridge design for new major steel structure.			
07/18 – 01/21	SR 3/Christa McAuliffe Bridge Over Canaveral Barge Canal, Merritt Island, FL - Florida DOT District 5 Project Manager in charge of general project coordination and a task for the design, detail of repairs, load rating analysis using AASHTOWare, 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 – 12/21	SR 968/SW 1st Street Bridge Over Miami River, Miami, FL - Florida DOT District 6 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 DISTRICT 6 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 District 4 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.
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
09/07 – 10/09	SR 814 / Atlantic Boulevard Bridge Over ICWW, Pompano Beach, FL - Florida DOT District 4 Project Engineer responsible for general project coordination for this \$5 million construction management at risk project to rehabilitate a Hopkins trunnion double-leaf bascule span bridge. The project included in-depth inspection, condition report with load ratings as well as hydraulic machinery retrofit; electrical system improvements, control house modifications, bascule span structural steel rehabilitation, and new bridge railing.
12/15 – 01/19	Camino Real Bridge over ICWW, Boca Raton, FL – Palm Beach County Bridge Structural Engineer responsible for the load rating analysis of the main girders and developing bascule span rehabilitation plans. The rehabilitation of this historic double-leaf rolling lift span, constructed in 1939, included designs for rehabilitated machinery, new tender house HVAC units, plumbing systems, and span locks, plus the development of technical special provisions. Structural rehabilitation designs involved new roadway grating, floorbeam brackets for wider sidewalks, stringers, and bridge railing. Aluminum structural components were utilized to minimize weight to counter balance.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Jason Biddle, PE	Years of relevant experience with this employer	14
	Title	Mechanical Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.E., Mechanical Engineering, 2010		
Active registration number / state / expiration date		Professional Engineer: 0043431 / LA / 9/30/2027		
Year registered	2019	Discipline	Mechanical Engineer	
Contract role(s) / brief description of responsibilities		Movable Bridge Mechanical Engineer - Meets MPR 5		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
12/22-Present	Rehabilitation of Wilmington Drawbridges, Wilmington, DE Delaware DOT Lead Mechanical Engineer / Engineer of Record for the portion of the task involving developing Work Orders for various priority structural, mechanical, and electrical repairs to be completed at the bridges while the long term bridge rehabilitation project plans are being developed. The Work Order repairs included warning gate replacement, stringer and bearing repairs, bascule leaf misalignment investigations, span lock shimming, speed reducer oil leakage repairs, sump pump replacement, new span drive machinery auxiliary drive installation, and limit switch replacement. Jason led the development of the mechanical repairs, oversaw the development of the Work Orders for other disciplines, reviewed contractor shop drawings, and provided on-site engineering support as repairs were completed. Lead Mechanical Engineer for the project involving rehabilitation design for 3 movable bridges. Responsibilities for the rehabilitation design for the 3 movable bridges which include mechanical rehabilitation design of repairs and replacement of portions of the span drive machinery and span lock machinery at each bridge.			
01/21-present	Replacement of BR 3-164 on SR 36 Cedar Beach Road, Slaughter Beach, DE - Delaware DOT Project Engineer / Mechanical Engineer for the replacement of the existing bobtail swing span with an innovative new Dutch style bascule span. To maintain the existing profile grade, a modified orthotropic steel deck was designed that results in minimal structure depth. A combination of metalizing and galvanization will provide the necessary protective coating in this highly corrosive environment. In addition to the new movable span, the existing approach spans will be replaced with new precast, prestressed, solid slab spans. The new bridge design focuses on accelerated bridge construction techniques to minimize road closures and associated detours. The proposed bridge structure was designed to increase the existing hydraulic opening, thereby improving the flow characteristics of the canal in this high scour area. Responsibilities for the project include various project management tasks, technical supervision, design coordination between disciplines, and review of CPM schedule.			
03/22-06/23	Delaware Third Street Bridge Emergency Span Lock Repairs, Wilmington, DE Delaware DOT Lead Mechanical Engineer for the project involving inspection and repair to the Third Street bridge (BR 1-693) span locks due to a malfunction that damaged the machinery and supports. Responsibilities for the project included performing emergency inspection of the damaged span lock, evaluation of various temporary span lock concepts, development of temporary span lock operating winch system using readily available components, and design of permanent repairs including new motors and reducers. Also provided shop drawing review, RFI response, and assisted with coordination between DelDOT, its contractor, and vendors.			
06/18 – 09/20	City of Baltimore Bridge Design Services On-Call Contract, Baltimore, MD – City of Baltimore Movable Bridge Mechanical Engineer developed mechanical remedial plans for the Hanover Street Bridge, a double-leaf rolling lift to restore operational capability. Also developed maintenance contract bid documents to cover routine maintenance for the electrical and mechanical systems at the City's two movable bridges. Responsibilities included developing and reviewing special provisions, maintenance checklist, and cost estimates. Design			

	responsibilities included assessing components to determine the required repairs, developing contract documents (repair details, special provisions, and cost estimates) for the tail lock machinery repairs as well as shop drawing review services for the replacement span lock machinery.
04/15 – 11/21	Rehoboth Avenue Bascule & Savannah Road Rolling Lift Bridge Rehabilitation, Lewes, DE – Delaware DOT Project Engineer / Mechanical Engineer of Record for the rehabilitation of the Rehoboth Avenue Bridge (single-leaf bascule) and Savannah Road Bridge (double-leaf Scherzer rolling lift bascule). Responsibilities included performing the special rehabilitation inspection of the mechanical systems, preparing reports, and preparing rehabilitation plan sets for mechanical systems. Also providing construction support services during construction including shop drawing review.
05/17 – 07/21	US-17 Swing Bridge over the Perquimans River Design-Build, Perquimans County, NC – North Carolina DOT Movable Bridge Mechanical Engineer providing preliminary and final mechanical engineering designs for this swing bridge replacement project that will replace the existing swing bridge with a new, off-line bridge. 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. Responsibilities for project include reviewing final detail updates for various portions of the mechanical system prior to release for construction. H&H's responsibilities include the complete design of the new swing span, including structural, mechanical, electrical, and geotechnical engineering.
8/2018-present	Centerville Turnpike (Bobtail Swing) Bridge Rehabilitation, Chesapeake, VA - City of Chesapeake, Bridge, and Structures Division Mechanical Engineer / Engineer of Record for the rehabilitation of the Centerville Turnpike Bridge (bobtail swing). Responsibilities include performing the scoping inspection and developing contract documents for the rehabilitation of the turning machinery, stabilizing machinery, and wedge machinery.
06/12 – 02/20	I-695 Drawbridge over Curtis Creek Rehabilitation, Baltimore, MD – Maryland Transportation Authority Movable Bridge Mechanical Engineer involved with the mechanical rehabilitation of this parallel double-leaf bascule. Responsible for assessing traffic control options with temporary bridge operations options during construction, assessing final machinery configuration options for the replacement of span lock mechanical components and report preparation. Construction support services provided during the rehabilitation included specialized on-site inspection of the machinery during construction, inspection of the machinery during routine and test operations throughout construction, and assessment of the new span drive machinery reducers after shop testing.
04/11 – 03/17	2008 Movable Bridge Engineering Services On-Call Contract, Statewide – Maryland State Highway Administration Movable Bridge Mechanical Engineer for on-call contract to design for emergency bridge repair and rehabilitation services of movable bridges: • <i>Maryland Ave Bridge (double-leaf Scherzer rolling lift bascule)</i> – Provided on-site engineering support during replacement of the fractured main pinion. • <i>Chester River Bridge (double-leaf Scherzer rolling lift bascule)</i> – Provided construction services including shop drawing review for the new motor and motor brake, and on-site engineering support during motor alignment and testing of the new motors. • <i>Tilghman Island Bridge (single-leaf Scherzer rolling lift bascule)</i> – Investigated reported coupling and span operation issues. • <i>Pocomoke River Bridge (double-leaf trunnion bascule)</i> – Developed repair details for replacement span drive machinery motors to be performed with the installation of new acceleration contactor system. • <i>Weems Creek Bridge (swing)</i> – Provided emergency response at the request of MDOT SHA to assess the condition of a cracked slewing cylinder connection bracket.
12/12 – 01/14	Front Street & Cedar Creek Bridge Emergency Repairs – Delaware DOT Movable Bridge Mechanical Engineer for the rehabilitation design for emergency repairs. Repairs at the Front Street Bridge (single-leaf bascule) included replacing the motor, brake thrusters, electrical wiring, navigation lights, bascule pier lights, disconnect switches and purging mechanical components of contaminated lubricant. Repairs at the Cedar Creek Bridge (bobtail swing) included replacing electrical wiring, navigation lights, limit switches, flexible lubrication lines, and purging mechanical components of contaminated lubricant. Responsibilities including the development of rehabilitation plans, shop drawing review, and on-site engineering support.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Travis Kimmins, PE	Years of relevant experience with this employer	7
	Title	Senior Mechanical Engineer	Years of relevant experience with other employer(s)	15
Degree(s) / Years / Specialization		M.S., Mechanical Engineering, 2003, University of Tennessee, Knoxville B.E., Mechanical Engineering, 2001, University of Tennessee, Knoxville		
Active registration number / state / expiration date		Professional Engineer: 43676 / LA / 3/31/2026		
Year registered	2019	Discipline	Mechanical Engineering	
Contract role(s) / brief description of responsibilities		Movable Bridge Mechanical Engineer – Meets MPR 5		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
01/20 – Present	Almonaster Avenue Railroad Bridge over the Industrial Canal Rehabilitation, New Orleans, LA – Port of New Orleans Movable Bridge Mechanical Engineer for the bridge assessment, complete rehabilitative engineering design, and construction inspection services required for the partial replacement of 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 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.			
02/23 - Present	H.015028.6 Bayou Barataria Movable Bridge Replacement (CE&I), Phase 1, LA 302, Jefferson Parish, LA - LADOTD Movable Bridge Mechanical Engineer responsible for mechanical construction engineering and inspection services for the Bayou Barataria Movable Bridge Replacement. This project consists of construction of the movable swing span bridge, operator's house, associated substructure elements, and pier protection system along relocated LA 302 in Jefferson Parish.			
08/21 - Present	H.001498.6 (CE&I); LA 24 and LA 16 Company Canal Vertical Lift Bridge, Bourg, LA - LADOTD Movable Bridge Mechanical Engineer providing mechanical engineering inspection for a newly designed 100-foot-long vertical lift bridge and operator's house. The scope of the project includes improving the safety and vehicular movements within the project corridor by realigning approximately 405 feet of LA 316 to the west to avoid conflict with the new bridge structure and approach slabs. During the construction of the new vertical lift bridge and operator house, Mr. Kimmins is providing mechanical engineering inspection services.			
07/23 – 12/23	H.009730.5 In-Depth Bridge Inspection of Complex Structures, Statewide, LA - LADOTD Movable Bridge Mechanical Engineer performing mechanical inspection of movable structures such as steel vertical lift bridges and plate girder bascule bridges statewide under separate task orders. Inspection of a vertical lift bridge in Calcasieu Parish (West Fork) has been completed.			
09/19 – Present	Jupiter Federal Bridge Replacement, Jupiter, FL – FDOT Mechanical Engineer / Engineer of Record responsible for mechanical systems design for this bascule bridge replacement project. H&H serves as Engineer of Record, which addresses structural and functional deficiencies of the existing US 1/SR-5 Jupiter Federal Bridge. Scope includes the development of vertical and horizontal alignment for bridge replacement alternatives and study of the resulting impacts. The design incorporates intersection improvements and enhances traffic flow at both ends of the approximately 2,960-foot-long project corridor, integrating it into the bridge replacement design. Providing construction inspection support services and quality reviews on all shop drawing reviews and RFI responses.			
11/23 – 03/24	NASA Stennis Mechanical Bridge Inspection, Stennis Space Center, MS - National Aeronautics and Space Administration Senior Mechanical Engineer for the In-Depth inspection of the mechanical components of the bridge in accordance with AASHTO, NASA Guide for Bridge Inspection, National Bridge Inspection Standards (NBIS), and the most current version of the AASHTO Manual for Bridge Evaluation and other			

	applicable documents. Scope includes inspection of all gearing, shafts, shaft couplings, trunnion bearings, machinery brakes, and center lock assemblies. The inspection report met NASA, NBIS and MBE requirements.
10/19 – 01/20	Annual Inspection of Almonaster Railroad Bascule Bridge over the Industrial Canal, New Orleans, LA – Port of New Orleans Movable Bridge Mechanical Engineer for an annual inspection of the Almonaster Avenue Railroad Bascule, which involved 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.
03/19 – 12/23	SR-605 Movable Bascule Bridge over Industrial Waterway, Harrison County, MS - MDOT Mechanical Engineer / Engineer of Record led the design of the mechanical rehabilitation and managed mechanical construction services during construction of these twin double-leaf rolling bascules. The full rehabilitation of SR-605 bascule bridge, issued as a task-order to the IDIQ Master Bridge Contract, included engineering assessment, mechanical, electrical, and structural design in addition to the preparation of Traffic Control Plans. All designs were completed in accordance with AASHTO, FHWA, and MDOT guidelines and specifications. H&H performed construction phase services.
11/20 – 03/23	SR 609 Bascule Bridge Rehabilitation, Ocean Springs, MS - MDOT Mechanical Engineer responsible for conducting plans review of mechanical rehabilitation plans involving a full mechanical rehabilitation of the operating machinery as well as the HVAC and plumbing systems for the control house. Also provided construction support services as part of the full rehabilitation of the SR 609 bascule bridge. Issued as a task order to the IDIQ Master Bridge Contract, the scope of this task order 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 were in accordance with AASHTO, FHWA, and MDOT guidelines and specifications. H&H performed construction phase services.
10/20 – 02/21	Broadway Bridge over the Harlem River Rehabilitation, Bronx & Manhattan, NY - New York City DOT Movable Bridge Mechanical Engineer for the rehabilitation of the Broadway Bridge over the Harlem River. Project mechanical construction inspection work includes clean and inspect all the ropes and replace select ropes; replacement of primary reducers and provide shaft for auxiliary power; replacement of all pillow block sleeve bearing bushings; replacement of motor and machinery brakes; removal of abandoned rope oiling system; replacement of upper and lower air buffers; replacement of span lock machinery; replacement of elevators; balancing the lift span; repair of centering device. Responsible for reducer testing witnessing and performed thermal photography to aid in inspection/reporting effort.
10/18 – 07/21	East Michigan Street Lift Bridge over Milwaukee River, Milwaukee, WI – City of Milwaukee Movable Bridge Mechanical Engineer / Engineer of Record managing the mechanical systems replacement of the East Michigan Street Bridge, a 178-foot-long vertical lift bridge. Mechanical work also included providing construction support services. The control system was designed to enable the bridge to operate locally or from a remote location. He was also responsible for the design of the hydraulic system. Provided construction inspection support services, including shop drawing reviews, responses to RFIs, field support to address construction issues, and functional testing support. Also, troubleshoot issues with the hydraulic system / control system to address skew issues.
08/12 – 04/18	Jamestown Scotland Ferry Hydraulic System Rehabilitation, Jamestown, VA – VDOT Senior Movable Bridge Mechanical Engineer / Engineer of Record responsible for the design of the hydraulic system to replace the existing hydraulic system. Provided construction services responsible including shop drawing reviews, responses to RFIs, witnessing shop testing, and field support during key construction events. During construction, there was a change in consultants for CEI services. Mr. Kimmins took on a larger role to ensure that the project was completed in accordance with the requirements from the contract documents, and on schedule. The ferry remained operational throughout construction.
03/11 – 06/18	Terengganu Bridge, Kuala Terengganu, Malaysia – PJSI Consultants Mechanical Engineer responsible for leading the hydraulic system design for Malaysia's first movable bridge, a double-leaf bascule to connect the peninsulas of Maura North and Maura South. The bridge has become Terengganu's signature landmark as it lures tourists to this oil-rich state. The bridge controls included programmable logic controller and relay circuits to control a hydraulic span drive system. Provided construction services support

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Donald Marinelli, PE	Years of relevant experience with this employer	20
	Title	Senior Mechanical Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		M.E., Mechanical Engineering, 2010, Johns Hopkins University B.S., Mechanical Engineering, 2005, York College of Pennsylvania		
Active registration number / state / expiration date		Professional Engineer: 43538 / LA / 9/30/2025		
Year registered	2019	Discipline	Mechanical Engineer	
Contract role(s) / brief description of responsibilities		Movable Bridge Mechanical Engineer - Meets MPR 5		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
01/20 – Present	Almonaster Avenue Railroad Bridge over the Industrial Canal Rehabilitation, New Orleans, LA – Port of New Orleans Movable Bridge Mechanical Engineer for the bridge assessment and complete rehabilitative engineering design required for the partial replacement of this 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. Although the existing substructure could remain, modifications were deemed necessary to accommodate the rehabilitated superstructure. H&H developed design plans to replace the span drive and span lock machinery, operating strut, guide assembly, live load bearings, counterweight trunnion pin, and bushing. Main trunnion bearings were rehabilitated.			
05/18 – 06/18	SR 609 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Movable Bridge Mechanical Engineer responsible for conducting strain gage balance testing as part of the full rehabilitation design of the SR 609 bascule bridge. Issued as a task-order to the IDIQ Master Bridge Contract, the scope of this task order included developing standard and special bridge services, statewide for MDOT. 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.			
10/19 – 01/20	Annual Inspection of Almonaster Railroad Bascule Bridge over the Industrial Canal, New Orleans, LA – Port of New Orleans Movable Bridge Mechanical Engineer for an annual 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.			
12/21-03/24	Chesapeake & Delaware (C&D) Canal Rehabilitation, Middletown, DE - Carload Express & Delmarva Central Railroad Project Engineer / Mechanical Engineer of Record for the rehabilitation design of the C&D Canal railroad lift bridge. Responsibilities included completion of the design level inspection, repair recommendations, final design and bid phase services. Don coordinated with the railroad, USACE, and local stakeholders through DE and MD Pilot's Association meetings for railroad and canal outages. Rehabilitation scope included trunnion shaft and bearing inspection, reducer replacement, motor and brake replacement, counterweight guide repairs, span lock rehabilitation, electrical system replacement, signal system replacement (designed by a sub), and minor structural repairs. After bids came in, the project did not proceed. The federal grant funds were returned to FRA.			
08/08 – 08/10	Woodrow Wilson Memorial Bridge, Washington, DC - Maryland DOT/State Highway Administration Movable Bridge Mechanical Engineer responsible for preparing trunnion, span lock and tail lock maintenance manuals for the new bascule leaves, developing load rating for bascule spans, and operating bridge for one year prior to initiation of the asset management contract. Scope included providing engineering support during bridge operations following the construction. Responsibilities included the operation of eight bascule leaves and all ancillary devices from the control house, visual inspection of the machinery rooms, electrical rooms, lock platforms, and pedestrian walkways during			

	openings, troubleshooting during malfunctions and failures, recording electrical measurements during operations and reporting all deficiencies. The new bridge carries twelve lanes of Interstate I-95/495 traffic.
09/05 – 06/13	Pennington Avenue Drawbridge Rehabilitation, Baltimore, MD – City of Baltimore Movable Bridge Mechanical Engineer / Engineer of Record responsible for the rehabilitation design, construction support, and construction inspection of the mechanical systems as part of substructure and superstructure rehabilitation for the twin, double-leaf Hopkins trunnion-type bascule bridge. Mechanical system design included rehabilitation of the span drive machinery, trunnion bearings and live load bearings and the complete replacement of the center lock and tail lock machinery.
07/14 – 07/19	I-695 Drawbridges: Comprehensive Engineering Design Services, Statewide, MD – Maryland Transportation Authority Project Engineer / Mechanical Engineer of Record involving the structural, mechanical, and electrical rehabilitation of the I-695 Drawbridges over Curtis Creek as part of the Construction Management at Risk (CMAR) project. Responsibilities included overall project management during the design and construction phases of the multi-discipline design team, development of the RFP for MDTA's first CMAR contract, coordinating design work with subconsultants, coordination with Construction Manager throughout design, and mechanical system replacement and rehabilitation. The mechanical system design included the new span drive machinery configuration, center lock and tail lock machinery rehabilitations, and live load bearing adjustments. Responsibilities also included construction support services included shop drawing review, on-site support, and witnessing field testing.
04/15 – 11/21	Rehoboth Avenue Bascule & Savannah Road Rolling Lift Bridge Rehabilitation, Lewes, DE – Delaware DOT Project Engineer / Mechanical Engineer of Record for the rehabilitation of the Rehoboth Avenue Bridge (single-leaf bascule) and Savannah Road Bridge (double-leaf Scherzer rolling lift bascule). Responsibilities included performing the special rehabilitation inspection of the mechanical systems, preparing reports, and preparing rehabilitation plan sets for mechanical systems. Also providing construction support services during construction including shop drawing review.
05/09 – 08/17	2008 MDOT/SHA Movable Bridge Engineering Services, Statewide – Maryland DOT/State Highway Administration Lead Movable Bridge Mechanical Engineer for the on-call contract to perform structural, mechanical, and electrical condition inspection, evaluation, and design for emergency bridge repair and/or rehabilitation services of movable bridges, statewide, for the State Highway Administration's Bridge Inspection and Remedial Engineering Division. Responsibilities included planning AASHTO routine inspection of movable bridges statewide, performing the inspection of the mechanical systems at each bridge, inspection report preparation, rehabilitation design, and on-call field assignments because of operational issues.
02/05 – 08/06	South Branch Lift Bridge, Design for Ropes Rehabilitation, Chicago, IL – AMTRAK Movable Bridge Mechanical Engineer responsible for providing mechanical engineering design services for developing plans for new operating rope linkages and new sheave assembly, as well as developing rope tensioning procedure as part of the replacement design of the end connection and tensioning devices for the operating ropes.
04/06 – 04/15	2008 and 2005 Bridge Safety Inspection Services Contracts, Statewide – Delaware DOT Movable Bridge Mechanical Engineer providing mechanical inspections evaluations and strain gage balance testing of the bascule bridges, creating a mechanical system O&M Manual, developing a mechanical system maintenance program for each bridge, and emergency response for operational failures. Serviced eight movable bridges owned by DelDOT. H&H was responsible for AASHTO routine and in-depth inspections for eight of Delaware's movable bridges, creation of operations and maintenance manuals for all eight movable bridges, documentation of the mechanical and electrical as-built conditions, and emergency response of operational failures.
04/15 – 10/16	Washington State On-Call Movable Inspection, Statewide – Washington DOT Movable Bridge Mechanical Engineer for on-call services to support the State Bridge and Structures Office with special engineering expertise and design support services for new movable bridge design and existing movable bridge rehabilitation on a task order, on-call basis. Provided in-depth mechanical inspections and reports on the Chehalis River Bridge, Hood Canal Bridge and Heron Street Bridge.

	Firm employed by	Hardesty & Hanover, LLC		
	Name	Matthew Gagliano, PE	Years of relevant experience with this employer	29
	Title	Senior Mechanical Engineer	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization		M.S. / 2018 / Mechanical Engineering B.S. / 1994 / Civil Engineering		
Active registration number / state / expiration date		Professional Engineer: 37500 / LA / 03/31/2027		
Year registered	2012	Discipline	Mechanical Engineering	
Contract role(s) / brief description of responsibilities		Movable Bridge Mechanical Engineer - Meets MPR 5		
Experience dates (mm/yy-mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
02/23 - Present	H.015028.6 Bayou Barataria Movable Bridge Replacement (CE&I), Phase 1, LA 302, Jefferson Parish, LA - LADOTD Mechanical Construction Engineer assisting in the mechanical construction engineering and inspection services for the Bayou Barataria Movable Bridge Replacement. This project consists of construction of the movable swing span bridge, operator's house, associated substructure elements, and pier protection system along relocated LA 302 in Jefferson Parish.			
10/15 – 02/18	Norwalk River (Route 136) and Yellow Mill (Route 130) Bascule Bridges, HUD Movable, Storm Hardening Design Services, Norwalk and Bridgeport, CT – Connecticut DOT Lead Mechanical Construction Engineer responsible charge for managing construction inspection for the rehabilitation and storm hardening of two movable bridges, damaged by flooding due to Superstorm Sandy. The rehabilitation included structural, mechanical, and electrical upgrades as well as revisions to the Department's Operation and Maintenance procedures before and after major coastal storms. This project included provisions to improve the facility's performance during similar storms and provisions to rapidly restore the facility to functionality quickly in the event of a storm that exceeds the 100-year design storm. Mr. Gagliano was responsible for the design, preparation of contract drawings, specifications, and cost estimate for new counterweight pit dewatering systems. Design featured a three-tier pump-out system consisting of a primary diaphragm pump filtering and oil-water separator system, a high-volume sump pump backup system, and a tertiary standpipe for hookup of a trailer-mounted diesel power pump capable of flow rates over 2,000 gallons per minute.			
02/13 – 03/18	Tom Adams Bridge Rehabilitation, Charlotte County, FL - Charlotte County Lead Mechanical Construction Engineer responsible for managing this rehabilitation project for a double-leaf bascule span carrying four lanes of traffic. The project featured a new multi-level control house with unobstructed 360-degree views. Mr. Gagliano was responsible for the design and construction oversight of new operating machinery for double-leaf trunnion bascule span meeting AASHTO standards. New operating machinery replaced existing Hopkins machinery within its original envelope and is a compact installation operated by 20 hp motors and gear reduction transmission. Design of HVAC and plumbing using Florida Building Code for new control house featuring a 4 ton air conditioner system and a wastewater pump with force main extension.			
11/18 – 08/23	Rehabilitation of Route 1 Bridge over Housatonic River, Milford, CT - CTDOT Project Engineer for the inspection of the operating machinery and electrical repairs of the double leaf movable span. Repairs include refurbishing gear reducers, adding collars to the machinery shafts and new dewatering pumps for the counterweight pit. Reviewed contractor submittals, attended progress meetings, performed key construction milestone site inspections.			
01/19 - Present	Connecticut River, Old Saybrook, CT - Amtrak Mechanical Engineer of Record for design of new operating machinery featuring a 60-inch diameter fixed trunnion for the Northeast corridor railroad new bridge's 200 feet bascule span. Bridge designed to carrier twin high speed rails. Responsible for design of the span locks, tail locks, HVAC and plumbing for the new control house.			

05/23 – Present	Rehabilitation of Mystic River Bridge over Mystic River, Mystic, CT - CTDOT Project Engineer for rehabilitation study report to investigate repairs to the bridge structure, operating machinery, electrical system, and control house of the historical heel trunnion type bascule span. Repairs include refurbishing gear reducers and reconditioning trunnion bearings.
12/16 – 11/18	Spuyten Duyvil Swing Bridge Rehabilitation, New York, NY - Amtrak Mechanical Engineer / Engineer of Record for final design on rehabilitation of this railroad bridge's movable span between Manhattan and the Bronx. He was responsible for design computations, modeling, and production of contract drawings for innovative replacement of swing bridge rim bearing with 4 bogie assemblies. Reviewed shop drawings, perform construction inspection, and attended construction progress meetings. The bridge's mechanical and electrical systems were damaged in 2012 by Super Storm Sandy. The project included rehabilitation of the center bearing, end machinery systems, electrical systems, and masonry at the piers. Responsible for mechanical design.
02/12 – 01/15	Metro-North Railroad Movable Bridge Inspection New Haven Line, New Haven, CT - Connecticut DOT Rail Lead Mechanical Engineer responsible for mechanical & electrical inspections of 5 movable bridges on the Metro North Railroad New Haven line as a sub-consultant to WSP. Routine and/or verification inspection of the Walk Bridge over the Norwalk River, Devon Bridge over the Housatonic River, Saugatuck Bridge, Cos Cob Bridge over the Mianus River in Greenwich, and Peck Bridge in Bridgeport. Movable spans are either a swing span or twin single-leaf bascules carrying four tracks. Inspections and subsequent reports were conducted and prepared according to the Connecticut Department of Transportation Office of Rail Railroad Bridge Inspection Manual. Inspected and evaluated movable span according to AREMA standards.
02/07 – 03/08	17th Avenue Bridge over Miami River, Miami, FL - Miami-Dade County Public Works Department Lead Mechanical Engineer / Engineer of Record for design for the replacement of the mechanical and electrical systems on this 1928 double-leaf bascule bridge. This design-build project (teamed with PCL Construction Inc.) rehabilitated the 3 girder, 148 feet double-leaf bascule span. The project included the detailed inspection of the mechanical and electrical systems, the preparation of a Design Report, detailed design of the replacement of the existing mechanical drive gear system and electrical system with a new hydraulic motor system and electrical systems. Responsible for the design of machinery, preparation of contract drawing, review and signing and sealing shop drawings, and construction support.
01/12 – 06/14	General Edwards Bridge, Task No. 2 Construction Phase Services, Boston, MA - MASSDOT Mechanical Engineer involved in the design of mechanical repairs. The project consisted of the replacement of an inoperable primary bridge control system and upgrades to the prime movers, motor, and machinery brakes, related mechanical operating components, and stabilize the granite veneer of the 4-basculer bridge towers. The scope also included retrofitting the pin and hanger systems with a redundant support system in the event of a failure and preparing a Preliminary Structures Report in anticipation of complete rehabilitation of the historic structure. The General Edwards Bridge consists of 13 steel multi-deck girder spans including a 106 feet main twin double-leaf basculer span. Several spans are suspended from fracture critical pin and hanger systems to accommodate thermal expansion and contraction.
01/24 – 08/24	I-275 Tolls (38th Avenue North to 4th Street North) Design, Pinellas County, FL - FDOT Mechanical Engineer of Record responsible for design plans, calculations, and specifications for the toll facilities' mechanical systems. This project includes the construction of express lanes along I-275 from north of 38th Avenue North to north of 4th Street North for a total distance of approximately 7.5 miles. H&H is developing toll facility plans, modified special provisions, technical special provisions, reports, and design calculations per the latest General Tolling Requirements (GTR).
08/19 - Present	East Haddam Swing Bridge, East Haddam, CT - CTDOT Lead Mechanical Engineer responsible charge for machinery rehabilitation and construction support. This historical bridge features a swing span of 456 feet long through truss supported on a pivot bearing and built in 1913. Operating machinery was sized for increased resistance due to addition of a pedestrian sidewalk on the swing span. Machinery rehabilitation includes new span drive machinery featuring an open bevel gearset with an axially adjustable bevel gear, and new rack and pinions. New larger discs and modified oil box design for the pivot bearings. Balance wheels, center, and edge wedge machinery assemblies refurbishing requirements specified. Specified and detailed refurbishing requirements for barrier gates including new hydraulic cylinder assemblies and repairs to its hydraulic power unit. Lead technical expert in construction meetings.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Andrew Barthle, PE	Years of relevant experience with this employer	22
	Title	Senior Electrical Engineer	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization		BS / 2003 / Electrical Engineering		
Active registration number / state / expiration date		Professional Engineer: 0034062 / LA / 3/31/2027		
Year registered	2008	Discipline	Electrical and Computer Engineer	
Contract role(s) / brief description of responsibilities		Movable Bridge Electrical Engineer – Meets MPR 6		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
08/08 – Present	H.002798.6; Bayou Teche Swing Bridge at Oaklawn, St. Mary Parish, LA – Louisiana DOTD Electrical Engineer responsible for providing electrical design calculations, plan preparations and post-design services for the bridge power distribution and relay-based control system for this movable bridge. Built in 1941, the original National Register of Historic Places eligible 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 the project schedule. Due to permitting issues, design activities were placed on hold for several years extending the schedule. H&H is currently providing construction phase services for the project.			
01/20 – 04/23	Almonaster Avenue Railroad Bridge over the Industrial Canal, New Orleans, LA – Port of New Orleans Electrical Engineer 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 of the circa-1920 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.			
04/18 – 08/22	SR 609 over Old Fort Bayou Bascule Bridge Rehabilitation, Gulfport, MS – Mississippi DOT Electrical Engineer of Record responsible for the electrical design and construction support for the full rehabilitation of the 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.			
01/19 – 08/20	SR 605 Over Industrial Waterway Canal Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Electrical Quality Control Engineer responsible for the assessment, design, plan review, and quality control of electrical systems for the SR 605 double-leaf bascule bridge, as a task-order to the IDIQ Master Bridge Contract which included providing standard and special bridge services, statewide for MDOT. Scope included the inspection of structural, mechanical, and electrical components of the bridge and roadway approaches and the development of maintenance and rehabilitation/repair plans for elements identified during inspection. All designs were prepared in accordance with AASHTO, FHWA and MDOT guidelines & specs.			
08/16-5/21	SR-A1A/North Causeway Bridge over ICWW, Fort Pierce, FL - Florida DOT District 4 Electrical Engineer for the 4000-foot-long bridge replacement project which replaces a bascule span with a high-level fixed bridge that has 85-foot vertical clearance over the navigable channel. The preferred replacement fixed bridge alternative includes the FIB superstructure and spans over Old			

	Dixie Hwy and the FEC Railway. In addition to the new bridge, the project includes extending Juanita Ave east from US-1 to Old Dixie Hwy and provisions for a new access roadway for the businesses south and north of the new bridge along SR A1A.
02/23-Present	Venetian Causeway over Biscayne Bay, Miami Beach, FL - Miami-Dade County Lead Electrical Engineer / Engineer of Record responsible for the delivery of final design and post-design services for the replacement of the double-leaf, rolling-lift bascule bridge (Bridge 10) along the historic Venetian Causeway. The 305 foot long replacement bridge includes 77 foot longarched approach spans flanking a 151 foot long double-leaf bascule span with cruciform aesthetic railings. The bridge is designed to meet the resilience demands of Biscayne Bay including sea-level rise.
05/18-12/18	I-110 Bridge over the Back Bay of Biloxi, Harrison, MS - Mississippi DOT Lead Electrical Engineer for routine/fracture critical inspection of I-110 Bridge over the Back Bay of Biloxi for the Mississippi Department of Transportation. Inspection included electrical, mechanical, and structural inspection of all components of the bascule and anchor spans and NBIS and element inspection for the entire bridge.
10/19-10/21	Seabrook Railroad Bascule Bridge Annual Inspection, New Orleans, LA - Port of New Orleans Electrical Engineer for the annual inspection of the Seabrook Trunnion Bascule Bridge crossing the Inner Harbor Navigation Canal in New Orleans. Services included routine and fracture critical inspection involving the structural, mechanical, and electrical inspection of all components of the bascule, counterweight, and tower spans per the Bridge Safety Management Program. Also conducted NBIS and element inspection for the entire bridge.
12/17-5/18	SR 75 (US 231) Reconstruction, SR 30A (US 98) to South Pipeline Road, Panama City, FL – Florida DOT District 3 Electrical Engineer for the new 840-foot steel bridge on SR77 crossing US 231 and the CSX railroad. H&H is providing design services for the single point urban interchange (SPUI) at SR 77 over US 231 and CSX RR improvement project. Work includes design for roadway and drainage design of the intersection, lighting design for the entire project, and bridge design for new major steel structure.
05/17-present	Jupiter Federal Bridge Replacement, Jupiter, FL Florida DOT District 4 Lead Electrical Engineer / Engineer of Record responsible for providing electrical engineering and design services during the preliminary, final, and post-design phases of this bascule bridge replacement project which includes interior lighting (machinery areas, control room, etc.) as well as lighting for the observation deck beneath the bridge. H&H is serving as Engineer of Record and our design addresses the structural and functional deficiencies of the existing US-1 / SR-5 Jupiter Federal Bridge from CR-A1A (Ocean Boulevard) to Beach Road. Scope includes the development of vertical and horizontal alignment for bridge replacement alternatives and the study of the resulting impacts. The design incorporates intersection improvements and improved traffic functions at both ends of the approximately 2,960-foot-long project corridor into the bridge replacement design. The project includes ADA access ramps to eight-foot sidewalks and a new seven-foot buffered bike lane for additional safety.
12/11-4/17	Flagler Memorial Bridge over ICWW, Palm Beach, FL - Florida DOT District 4 Electrical Engineer responsible for this \$95 million design-build project that included the replacement of the entire bridge off-line and parallel to the existing bridge to maintain traffic for this busy causeway that connects West Palm Beach to Palm Beach. The design/build request for proposal, resulting from a Type 2 Categorical Exclusion Class of Action NEPA process, had strict design requirements regarding environmental mitigation, appearance, and maintainability. Completed in 2018, the twin double-leaf rolling lift bascule span bridge design included a 150-foot rolling-lift-span over the navigable channel, twelve 150-foot pre-stressed concrete approach spans, and approach roadway work. This project was recognized by ASCE West Palm beach Branch receiving the award of 2018 Project of the Year.
08/08 – 08/13	SP 700-99-0430; Judge Seeber Vertical Lift Bridge over Inner Harbor Navigational Canal, New Orleans, LA – Louisiana DOTD Electrical Engineer responsible for overseeing the replacement of the vertical lift bridge's entire electrical system for this Preservation Priority Bridge. Scope included replacing the replay-based control system, and essentially the in-kind replacement of the switched secondary resistance motor drive with synchro-tie skew control. Prepared the initial scoping inspection report and coordinated post design services for the electrical and machinery rehabilitation of a 250-foot tower-drive vertical lift span.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Marco Lara, PE	Years of relevant experience with this employer	8
	Title	Senior Electrical Engineer	Years of relevant experience with other employer(s)	13
Degree(s) / Years / Specialization		BS / 2004 / Electrical Engineering		
Active registration number / state / expiration date		Professional Engineer: 0044115 / LA / 3/31/2026		
Year registered	2019	Discipline	Electrical Engineer	
Contract role(s) / brief description of responsibilities		Movable Bridge Electrical Engineer - Meets MPR 6		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
11/20–Present	Almonaster Avenue Railroad Bridge over the Industrial Canal Rehabilitation, New Orleans, LA – Port of New Orleans Movable Bridge Electrical Engineer for the bridge assessment and complete rehabilitative engineering design and construction inspection services required for the rehabilitation and roadway replacement of the Strauss-heel trunnion bridge. H&H’s 2019 assessment of the circa-1920 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.			
08/21 – 01/22	Lapalco Boulevard Movable Bridge over Harvey Canal, Westwego, LA - Jefferson Parish DPW Movable Bridge Electrical Engineer contributing to the pre-design electrical inspection and resulting Bridge Design Report (BDR) for the rehabilitation and widening of the existing four-lane Lapalco Boulevard project includes rehabilitation to the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lanes as well as the design of a new three-lane double bascule movable bridge crossing of Harvey Canal 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 and development of a Traffic Control Plan was also included.			
04/18-03/21	SR 75 (US 231) Reconstruction, SR 30A (US 98) to South Pipeline Road, Panama City, FL – Florida DOT District 3 Project Electrical Engineer / Engineer of Record responsible for technical review of the 60% constructability roadway lighting design consisting of calculations and plan preparations, including Lighting Design Analysis Report (LDAR) and Lighting Justification Report (LJR). H&H is providing design services for the single-point urban interchange (SPUI) at SR 75 over US 231 and CSX RR improvement project			
04/09 – 06/13	Crescent Beach Bridge Rehabilitation (SR 206), St. Johns County, FL – Florida DOT Movable Bridge Electrical Engineer / Engineer of Record responsible for rehabilitation of existing double-leaf, trunnion bascule bridge. Rehabilitation consisted of replacement of electrical power and controls with new Motor Control Center (MCC) and programmable logic controller (PLC) and replacement of drum switches and wound rotor motors with flux vector motors, drives, and brakes. Also included replacement of traffic gates, new open grid decking, and tender house improvements. Permit application was created for submarine cable replacement. Duties included shop inspections, witness testing, field inspection, and estimate of completion.			

03/18 – 07/19	Cass Street Bascule Bridge over Hillsborough River, Tampa, FL - Hillsborough County Government Movable Bridge Electrical Engineer / Engineer of Record responsibilities included producing and developing calculations and design plans for the rehabilitation of this historic double-leaf bascule bridge. The major rehabilitation involved replacing obsolete and aging electrical equipment such as the programmable Logic Controller (PLC), motor control panels and cabinets; conduit and wiring associated with a generator, automatic transfer switch, safety interlock, etc.; auxiliary drive bevel gear bushing, span drive motor, span lock & pinion, span lock brake & bushings; and emergency Drive bevel gear, shaft bushing, bearing & couplings, live load shoe, and lighting. H&H is providing design plans for structural rehabilitation and controller system replacement. Services included inspections of the structural, electrical, and mechanical components; a bridge development report; structural, electrical, and mechanical construction plans; temporary traffic control plans (TTC); specifications; engineer's estimate of probable construction cost; and post-design services.
03/18 – 07/19	Brorain Street Bascule Bridge over Hillsborough River, Tampa, FL - Hillsborough County Government Movable Bridge Electrical Engineer responsibilities included producing and developing calculations and design plans for this double-leaf bascule bridge rehabilitation. This rehabilitation involved replacing aging electrical equipment, such as the main drive motors, brakes, motor control panels, span drive system and lock motor, limit switches, lighting, and upgrading the electrical service. H&H provided designs for the National Register of Historic Places eligible bridge including a structural rehabilitation and controller system replacement. Services included inspections of the structural, electrical, and mechanical components; a bridge development report; structural, electrical, and mechanical construction plans; TCP; specifications; engineer's estimate of probable construction cost;
05/17 – 07/17	Arthur Kill Vertical Rail Lift Bridge, Elizabethport, NJ / Staten Island, NY – New York City Economic Development Corporation Movable Bridge Electrical Engineer responsible for performing in-depth inspections of the existing span drive, limit switches, motor control center, termination cabinets, control console, and bridge electrical system on the Arthur Kill Vertical Lift Bridge. With a single-track tower drive and a 558-foot-long span, <i>this bridge has the longest lift span of any bridge of its type in the world</i>. Observed bridge operations and visually evaluated aerial cables. Performed electrical testing of electrical service, motors, motor brakes, and span locks. Reviewed previous bridge inspection reports and prepared checklist for field evaluation of corrected and uncorrected deficiencies.
1/10-10/15	Ocean Avenue Bridge, Lantana, FL - Palm Beach County Movable Bridge Electrical Designer responsible for electrical design of power distribution layout and plan sheets of relay-based control system with PLC monitoring and diagnostic alarm system for the replacement of double-leaf bascule bridge. Span motor controls are flux vector drive with encoder feedback. Performed lighting analysis and design of electrical equipment room, control house, and bascule piers. Provided standby generator sizing, power flow and voltage drop studies, short circuit analysis, and lighting panel calculations. Duties include shop drawing review, shop inspections, witness testing, field inspection, and estimate of completion.
07/10 – 01/13	Sargent Barge Swinging Barge (Platoon) Bridge Rehabilitation, Matagorda County, TX – Texas DOT Movable Bridge Electrical Designer. Drafted electrical repair plans for power distribution system, panel schedules, control schematics, equipment layouts and conduit & cable schedules. Design includes a programmable logic controller (PLC) control-based system utilizing wireless modems to eliminate the submarine cable. Operating system includes two winches on vector controlled variable speed drives, integrated to control back tension on the payout winch in each direction, to maintain absolute control of the barge in tidal currents. The center span is a 125-foot cable operated swinging barge with motor operated leveling spans and aprons on each end. Project scope included replacement of the timber leveling spans with steel framed open grid decks and the operating machinery, replacement of the bridge winch machinery and controls, structural repairs, and replacement of the traffic gates and miscellaneous roadway modifications.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Christopher Svara, PE	Years of relevant experience with this employer	26
	Title	Senior Electrical Engineer	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization		BS / 1993 / Applied Physics BS / 1993 / Electrical Engineering		
Active registration number / state / expiration date		Professional Engineer: 0044080 / LA / 3/31/2026		
Year registered	2019	Discipline	Electrical Engineer	
Contract role(s) / brief description of responsibilities		Movable Bridge Electrical Engineer – Meets MPR 6		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
08/08 – 08/13	Judge Seeber Vertical Lift Bridge over Inner Harbor Navigational Canal (SP 700-99-0430), New Orleans, LA – LADOTD Lead Movable Bridge Electrical Engineer / Engineer of Record provided inspection and rehabilitative design services for the electrical rehabilitation of a 250-foot tower-drive vertical lift span. The rehabilitation design of this Preservation Priority Bridge encompassed various electrical elements including a new control system, new distributed power distribution system, motor controllers, control desk, and limit switches. Provided the electrical design, including calculations, design drawings, and specifications. During the construction phase, provided construction support services for the construction, including shop drawing review, and responded to various Requests for Information.			
01/19 – Present	SR 605 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – Mississippi DOT Movable Bridge Electrical Engineer 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.			
08/10 – 07/13	Murray Morgan Vertical Lift Bridge Rehabilitation, Tacoma, WA – City of Tacoma Lead Movable Bridge Electrical Engineer / Engineer of Record responsible for developing the electrical design required to replace the complete electrical system on a span drive lift bridge. Scope for this National Register of Historic Plans listed bridge included providing the electrical design, including calculations, design drawings, and specifications as well as providing construction support services for the construction, including shop drawing review, Requests for Information, meetings, on-site testing, and start up. This rehabilitation design included a new programmable logic control system, a radio communication system to reduce cables from the movable span to the fixed piers, control desk, new distributed power distribution system consisting of a movable span, near side, and far side electrical equipment locations, motor drives, utility service, and power distribution.			
08/17 – 07/19	I-90 Lacey V Murrow Pontoon Bridge Rehabilitation, Seattle, WA – Washington State DOT Bridge Preservation Office Movable Bridge Electrical Engineer for an I-90 Lacey V Murrow Bridge electrical inspection and rehabilitative design project. H&H's electrical inspection of eastbound I-90 revealed that the electrical switchgears and five pairs of transformers needed to be replaced and the neutral and ground conductors needed to be separated. H&H's rehabilitative recommendations also required that submersible fuses in three pontoons be reconfigured and reinstalled, and that a fault current and arc flash hazard analyses be performed on all medium voltage equipment. H&H was responsible for the in-depth inspection, associated inspection report, subsequent electrical system design, and construction support services.			

07/10 – 04/16	SR 520 Evergreen Point Floating Bridge and Landings Project, Seattle, WA – Washington State DOT Bridge Preservation Office Movable Bridge Electrical Engineer on this design-build project to replace the SR 520 Floating Bridge with a new parallel bridge and maintenance facility. Prepared a design-build Request for Qualifications and Request for Proposal for the replacement SR 520 Evergreen Point Floating Bridge and Bridge Maintenance Facility. The floating bridge work included preliminary design and complete technical requirements for a specialized structure. The Maintenance Facility included preliminary design and complete technical requirements for LEED compliant facility. Work also included support during the bidding and selection process as well as reviewing the design-build team's design submittals, attending task force meetings with the design-build team to keep the project requirements clear, and reviewing construction submittals.
06/17 – 04/18	Centerville Swing Bridge over the Chesapeake & Albemarle Canal Rehabilitation, Chesapeake, MA – City of Chesapeake Lead Movable Bridge Electrical Engineer for the rehabilitation of the Centerville Swing Bridge's bascule span. The project consisted of a site inspection to verify the condition of the electrical systems. After the site visit, a detailed scope of work was developed to identify the rehabilitation work that was required. Once the scope was defined and approved by the City, then construction plans, specifications, calculations, and cost estimates were prepared for a complete electrical rehabilitation of the bridge electrical system. The planned scope of work also included construction support services.
12/98 – 12/01	Chehalis River Bascule Bridge Rehabilitation, Aberdeen, WA – Washington State DOT Bridge Preservation Office Movable Bridge Engineer responsible for field inspection and subsequent design of the new electrical system for this Warren deck truss bascule bridge. Electrical designs were prepared for hydraulic center lock rehabilitation, traffic and pedestrian gate replacement, and new bridge electrical control and indication modifications. Project scope also included site inspection to evaluate existing equipment to determine what systems needed replacement versus maintenance. Design work included new control system, power distribution, hydraulic center locks, and gates as well as construction support services. Construction should be completed by Summer 2021.
10/99 – 03/01	Woodrow Wilson Bascule Bridge Replacement Contract, Washington, DC – Maryland State Highway Admin. / Virginia DOT Movable Bridge Electrical Engineer / Engineer of Record designing the new electrical systems for a new 12-lane bascule bridge to replace the existing I-95 Potomac River crossing. The new bridge is comprised of four side-by-side double-leaf bascule spans, each with a 270-foot center-to-center trunnion spacing and an overall bridge width of 249 feet. Responsibilities include the complete design of the completely new electrical systems. Features of the span include a composite concrete deck, moment-resisting span locks, tail locks, and the option of independent or group leaf operation. The bridge has been designed to accommodate future transit system plans.

	Firm employed by	Hardesty & Hanover, LLC		
	Name	Robert Hideck, PE	Years of relevant experience with this employer	12
	Title	Senior Roadway Engineer	Years of relevant experience with other employer(s)	11
Degree(s) / Years / Specialization			B.S. / 2002 / Civil Engineering	
Active registration number / state / expiration date			Professional Engineer: 41953 / Louisiana / 3/31/2026	
Year registered	2017	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Roadway Design Engineer – Meets MPR 8	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
01/21 – 02/25	SR 826/Palmetto Expressway Capacity Improvement Design-Build, Miami-Dade County, FL – Florida DOT Engineer of Record responsible for roadway, traffic control, tolling, and S&PM design services. This project improves operations with an additional SB General purpose lane, auxiliary lanes, and improved shoulder widths, requiring major modifications to the NW 103rd St interchange. The project also includes revised access to the NB and SB revises express lanes, requiring a new toll site and improvements to the adjoining frontage road system. H&H is the lead designer, responsible for roadway, drainage, permitting, traffic control, tolling, and bridge design.			
07/16 – 9/21	SR A1A North Bridge Replacement, Fort Pierce, FL – Florida DOT Roadway Design Engineer for the planning and design of a new high-level fixed bridge carrying SR A1A and the East Coast Greenway over the Intracoastal Waterway, FEC Railroad, and Old Dixie Highway. Scope included staged construction to maintain traffic, elimination of at-grade rail crossing, design of new roadway alignments and access roads, and integration of an observation deck. H&H coordinated extensively with utilities, FEC Railroad, adjacent businesses, and permitting agencies. The project also included geotechnical, drainage, hydrogeology, lighting, signals, signage, and maintenance of traffic for both vehicular and marine users.			
11/20 – Present	H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Roadway Design Engineer for the bridge assessment, complete rehabilitative engineering design, and road design services required for the partial replacement of the Almonaster Ave Bridge and a new connector road. The Almonaster Ave Bridge crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. The Almonaster Ave Bridge crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. 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 the connecting roads were required to return this bridge to its full operating capability. The road design services included a new alignment for the connecting road including all drainage structures. H&H also developed a hydraulic study and a site plan that included several retention ponds for drainage improvements. Other services included environmental, geotechnical, and pavement design.			
09/15 – 12/18	44th Ave E from 45th St E to 44th Ave Plaza E, Braden River Segment, Manatee County, FL – Manatee County Roadway Engineer of Record/Senior Roadway Engineer responsible for roadway and traffic control design and plans preparation. The project included the design for the reconstruction and extension of 44th Ave East from 45th St East to 44th Ave Plaza East. The design plans include reconstruction from a two-lane roadway to a four-lane divided urban roadway. A new bridge was designed to cross over the Braden River, as well as a realignment of Morgan Johnson Rd and Caruso Rd to provide route continuity.			

01/16 – 05/18	I-75 SB Off-Ramp from S of Bypass Canal to EB/WB I-4, Hillsborough County, FL – Florida DOT Roadway Engineer responsible for the roadway and temporary traffic control design and plans preparation for this two-mi. roadway improvement project that included ramp widening, an extension of the ramp to provide off-line queueing, and an extended auxiliary lane on I-75. A unique aspect of the design team's approach was incorporation of operational improvements into a long-term buildout. This project was expedited for construction based on no right of way acquisition or impact to Florida Gas Transmission lines.
11/24 – Present	SR 33 Bridge Replacements, Franklin County, MS – Mississippi DOT Senior Roadway Engineer for the Phase A Final Right-of-Way Plans for roadway design and roadway hydraulic design for four bridge replacements along SR 33 (Bridge Nos. 31.9, 34.6, 34.9, and 35.3). The project scope includes roadway realignment, roadway hydraulic design, preliminary right-of-way design, and final right-of-way design. H&H is providing the realignment of the roadway to run parallel to the existing and redesigning of one intersection at the end of the project. A hydraulic study and report is to be completed to resize the existing pipes, if necessary, and to verify sizing for a reinforced box culvert. A set of preliminary right-of-way plans are to be created following MDOT guidelines and using the approved alignment from MDOT. Final right-of-way plans will be delivered after hydraulic design and roadway design have been finalized and a plan set has been created.
01/16 – 06/23	Sand Lake Rd (SR 482) Interchange, Orange County, FL - Florida's Turnpike Enterprise Senior Roadway Engineer responsible for the traffic control design and plans preparation. As a sub-consultant, H&H prepared the temporary Traffic Control Plans design for the construction of a new interchange located on the Florida Turnpike and Sand Lake Rd (SR 482) in Orange County, Florida. As part of H&H's innovative design, ramp construction took place early to allow mainline traffic to be diverted during off peak hours while bridge reconstruction over the Turnpike is ongoing. This project also included coordination with FDOT District 5 for the reconstruction of Sand Lake Road.
04/17 – 05/23	SR 75 (US 231) from SR 30A (US 98) to Pipeline Road, Panama City, FL – Florida DOT Engineer of Record responsible for design and preparation of roadway, signing and pavement marking, and temporary Traffic Control Plans. H&H is providing design services for the single point urban interchange (SPUI) at SR 77 over US 231 and CSX RR improvement project. Work includes design for roadway and drainage design of the intersection, lighting design for the entire project, and bridge design for a new 840-ft. steel bridge.
07/17 – 06/20	Orlando South Ultimate Interchange Improvements – Florida's Turnpike Enterprise Senior Roadway Engineer responsible for concept development, coordination, and project oversight of a complex interchange, including system and service movements. The project includes an evaluation of a complex interchange that provides both direct and indirect ramping between Orange Blossom Trail and the adjacent two limited access highways. The project goals included: construction of direct connection ramps between freeways, an ultimate 10-lane typical section of the turnpike, implementation of AET, consideration of express direct connections, and improvement of surface street operations with two new reliever interchanges.
03/07 – 10/13	Veterans Expressway (SR 589) Widening from Memorial Highway to Gunn Highway – Florida's Turnpike Enterprise Project Engineer responsible for roadway design, preparation of plans, coordination of sub-consultants and multiple disciplines, post-design services, and civil/site design for six toll sites. As part of the expansion, the existing conventional cash toll collection method was converted to an AET collection method. The project included two full interchanges and four partial interchanges. Due to the proximity to the Tampa International Airport, aviation permits were required throughout the project corridor and extensive coordination was required with the FAA. This activity included meeting with aviation agency staff and the design team to adjust design element locations and/or elevations for the acquisition of FAA determinations required for HCAA permits. The project also included the milling and resurfacing of the existing roadway, as well as widening and reconstruction.
03/15 – 03/17	Fort Hamer Bridge Approaches, Upper Manatee River Rd to Fort Hammer Road, Manatee County, FL – Manatee County Project Roadway Engineer responsible for roadway and temporary Traffic Control Plans. This project included the design of over a mile of approach roadway for a new bridge over the Manatee River, connecting Upper Manatee River Rd with Fort Hamer Road. The project was designed for stage construction with the two lanes being delivered with initial construction.

	Firm employed by	Hardesty & Hanover, LLC		
	Name	John Rayer, PE	Years of relevant experience with this employer	1
	Title	Roadway Engineer	Years of relevant experience with other employer(s)	6
Degree(s) / Years / Specialization			BS / Civil Engineering / 2018	
Active registration number / state / expiration date			Professional Engineer: 47089 / LA / 03/31/2027	
Year registered	2022	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Roadway Design Engineer – Meets MPR 8	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
10/24 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Roadway 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 Blvd to provide a facility carrying three lanes of traffic in each direction. The new bridge is constructed as an independent structure adjacent and north of the existing bridge with a new operator house. The project includes rehabilitation to the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane. In addition to design of the new bridge, all roadway approaches and intersections in the vicinity of the bridge (eastbound and westbound) will be redesigned to accommodate the new structure. Scope includes development of a Traffic Control Plan.			
10/24 – Present	H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Roadway Engineer for the bridge assessment, complete rehabilitative engineering design, and construction inspection services required for the partial replacement of the Almonaster Ave Bridge, a movable Strauss-heel trunnion bridge. The Almonaster Ave Bridge crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. H&H's 2019 assessment of the circa-1920 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.			
11/24 – Present	SR 33 Bridge Replacements, Franklin County, MS – Mississippi DOT Roadway Engineer for the Phase A Final Right-of-Way Plans for roadway design and roadway hydraulic design for four bridge replacements along SR 33 (Bridge Nos. 31.9, 34.6, 34.9, and 35.3). The project scope includes roadway realignment, roadway hydraulic design, preliminary right-of-way design, and final right-of-way design. H&H is providing the realignment of the roadway to run parallel to the existing and redesigning of one intersection at the end of the project. A hydraulic study and report are to be completed to resize the existing pipes, if necessary, and to verify sizing for a reinforced box culvert. A set of preliminary right-of-way plans are to be created following Mississippi Department of Transportation's (MDOT) guidelines and using the approved alignment from MDOT. Final right-of-way plans will be delivered after hydraulic design and roadway design have been finalized and a plan set has been created.			
04/24 – Present	H.009730.5 SNBI Data Collection, Statewide, LA - LADOTD Engineer responsible for retrieving, verifying, and entering the Specifications for the Nation Bridge Inventory (SNBI) data into InspectX for the bridges statewide for Louisiana Department of Transportation and Development (LADOTD). Tasks include review of pertinent documents such as rehabilitation plans, as-built plans, shop drawings, and inspection reports. These documents will be obtained from various LADOTD offices including General Files, Bridge Design Section, Bridge Maintenance Section, and District offices. Necessary information will be collected from the site when such information is unavailable from the plans.			

01/21 – 12/23	H.012001 – LA 339: Canal & Creek Bridges, Various Locations, LA – LADOTD Roadway Engineer for this bridge replacement project. The goal of the project was to replace three existing bridges with new, reinforced concrete box culverts on LA 339. John developed the 60% final roadway plans and calculations as well as the cost estimates for each phase of the project. The estimated cost for this project at 60% Final Plans was approximately \$2,500,000. This project is scheduled to bid in 2025.
06/21 – 10/22	H.008358 – Black Bayou Bridge, Madisonville, LA – LADOTD Roadway Engineer for this bridge replacement project in Madisonville, Louisiana along the Tchefuncte River on LA 1077. John's role for the project was to develop the alignment of the roadway and the diversion roadway for construction. John also developed the cost of construction for the roadway aspects of the project. The construction cost of the project at bid was \$4,291,639.25.
01/21 – 11/22	H.010885 – LA 91: Bayou Plaquemine Brule BR Replacement, Acadia Parish, LA – LADOTD Roadway Engineer for this bridge replacement project in Acadia Parish, LA. The existing pontoon bridge was to be replaced with a new bridge that met vertical requirements for boat traffic. John's responsibilities as Roadway Designer including creating an alignment for the new bridge to reconnect to the existing roadways. The bridge and roadway needed to be lengthened and raised substantially more than was originally proposed to allow for adequate vertical clearance in the waterway, which resulted in the project being put on hold due to the added construction costs.
06/18 – 8/20	I-10 Widening through Baton Rouge, Baton Rouge, LA – LADOTD Roadway Designer for this project which consisted of developing alternatives and cost estimates for the expansion of I-10 through Baton Rouge, Louisiana from the I-10/I-12 split to LA 415. John's role for this project was to calculate the quantities and costs. After presenting alternatives and developing estimates, the final estimated cost, with contingencies, was approximately \$1 billion.
06/18 – 12/20	LA 336, Breaux Bridge, LA – LADOTD Roadway Designer for this restoration project located in downtown Breaux Bridge, Louisiana. The project consisted of the restoration of a historical lift span bridge. John's responsibilities on this project included developing calculations and drawings for the lift and bridge sections.
01/23 – 10/24	Emerald Forest Blvd. to LA 59 Expansion Study, Covington, LA – St. Tammany Parish Roadway Engineer for this project consisting of an alignment study for a new roadway to be proposed between US 190 and LA 59 in Covington, Louisiana. John's responsibilities on this project included developing three alternatives to present to St. Tammany Parish. Each alignment consisted of multiple roundabouts at intersections along the proposed roadways.
03/23 – 10/24	Pontchartrain Yacht Club Bulkhead Improvements, Mandeville, LA – Pontchartrain Yacht Club Lead Roadway Engineer for the replacement of the bulkhead around the Pontchartrain Yacht Club in Mandeville, Louisiana. As Lead Engineer, John was responsible for the preparation of plans and calculations of the bulkhead section.
09/24 – Present	US 90 Bridge Replacement, Terrell County, TX – TxDOT Roadway QC Reviewer for the replacement of two US 90 bridges at Sanderson Canyon. One of the existing bridges is 322 ft. long, with eight spans of approximately 40 ft. each, and the new bridge will be 339 ft. long with three spans of 113 ft. each. The other existing bridge is 520 ft. long with 13 spans of approximately 40 ft. each and is over existing UPRR tracks; the new bridge will be 623 ft. long with four spans varying from 138 ft. to 150 ft. each. John's responsibilities include independent review of bridge plans prepared by the prime.

	Firm employed by	Hardesty & Hanover, LLC		
	Name	Linh Kim, PE	Years of relevant experience with this employer	5
	Title	Civil Engineer	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization			B.S. / 2017 / Civil Engineering	
Active registration number / state / expiration date			Professional Engineer: 47527 / LA / 9/30/2027 Certifications: NHI 130081 Load and Resistance Factor Design (LRFD) For Highway Bridge Superstructures; ATSSA Traffic Control Supervisor and Flagger	
Year registered	2023	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities			Bridge Design Engineer and Load Rating Engineer	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
02/21 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Structural Engineer for the pre-design inspection, rehabilitation, and widening of the existing four-lane Lapalco Blvd to provide a facility carrying three lanes of traffic in each direction, as well as the design of a new three-lane double bascule movable bridge crossing of Harvey Canal. The scope of services also includes the design of a new bridge to be constructed as an independent structure adjacent and north of the existing bridge with a new operator house. All design work is in accordance with LADOTD Standards and Specifications and being reviewed by LADOTD. Load rating was performed using AASHTOWare BrDR load rating software.			
04/22 – 02/25	SR826 Palmetto Design-Build Design and Post, Miami-Dade County, FL – Florida DOT Structural Engineer for this bridge located in downtown Miami urban area. The bridge design requirement was to keep existing bridge and roadways open to traffic while widening construction was being performed. H&H performed design calculations for concrete superstructure and steel substructure elements for bridge widening and created details and plan sheets for superstructure and substructure elements for bridge widening.			
09/20 – Present	H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Bridge Engineer for the bridge assessment, complete rehabilitative engineering design, and road design services required for the partial replacement of the Almonaster Ave Bridge and a new connector road. The Almonaster Ave Bridge crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. 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 the connecting roads were required to return this bridge to its full operating capability. The road design services included a new alignment for the connecting road including all drainage structures. H&H also developed a hydraulic study and a site plan that included several retention ponds for drainage improvements. Other services included environmental, geotechnical, and pavement design.			
09/21 – 07/22	Tennessee Bridge Inspection and Load Rating – Norfolk Southern Corp., Decatur, AL - Norfolk Southern Corp. Structural Engineer Intern providing 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 H&H through this contract. The task involves 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.			
09/19 – 11/19	H.002176.5: LA 10 Bridges (Burton's Lake, Bayou HaHa, Bayou TawPaw) – LADOTD Civil Engineer Intern created General Plans set for three different bridges after receiving information from Road Design and Hydraulics. Linh contributed to the preparation of 60% Preliminary Plans Set to be sent out Hydraulics, Property Survey, and Subgrade Soil Survey sections.			

09/22 – Present	I-10 & I-12 College Dr Flyover Ramp Design- Build, Baton Rouge, LA – LADOTD Structural Engineer for design and construction quality control/quality assurance for this road and bridge design-build project which is located at the I-10 West exit to College Drive, in advance of the I-10 & I-12 West merge. H&H serves as Design-Builder's Construction Quality Control Firm (CQCF) and oversees all Design Quality Control and Construction Quality Control activities for the project. Responsibilities include the development and implementation of Comprehensive Quality Plan to ensure the design and construction conforms to all specified requirements. H&H will develop, maintain, and update Contractor Quality Management Plan and provide qualified Inspectors, material sampling, testing, independent testing labs to ensure contractors and off-site fabrication facilities meet project specifications.
07/20 – 12/22	SR-605 Movable Bascule Bridge over Industrial Waterway, Harrison County, MS – Mississippi DOTD Structural Designer assisting with the load rating calculations and analysis for full rehabilitation design of the SR-605 bascule bridge as a task-order to the IDIQ Master Bridge Contract. The scope includes engineering assessment; mechanical, electrical, and structural designs; and preparation of Traffic Control Plans. All designs will be completed in accordance with AASHTO, FHWA and MDOT guidelines and specifications.
08/20 – Present	H.001498.6; LA 24 and LA 16 Company Canal Vertical Lift Bridge, Bourge, LA – LADOTD Structural 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; and construction close-out, etc.
07/23 – Present	H.009730.5 In-Depth Bridge Inspection of Complex Structures, Statewide, LA - LADOTD Structural Inspector performing inspection of complex structures such as cantilever trusses, cable-stayed bridges, steel vertical lift bridges, and plate girder bascule bridges statewide under separate task orders. Inspection of two steel truss bridges (Jimmie Davis and Miller's Bluff), a vertical lift bridge (West Fork), and a US 90 bridges at Krotz Springs have been completed to date.
03/24 – Present	H.009730.5 LADOTD Movable Bridge Manual, New Orleans, LA – LADOTD Structural Engineer responsible for the development of the LADOTD Movable Bridge Inspection Manual (including details, photos, illustrations, and specific examples); building a lesson plan and materials for the classroom training from the inspection manual; and providing classroom and field training. The manual will include: bridge inspection principles and overview; movable bridge overview; mechanical, electrical, and structural inspection of movable bridges; operator house; and classroom and field training for electrical, mechanical, and structural).
01/19 – 04/19	H.009498.5: LA 121: Calcasieu River Bridge, Lake Charles, LA – 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-ft.-long using four 60-ft.-long deck spans with a bridge width of 42.5 ft. 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.
09/19 – 11/19	H.009482.5: LA 113: Jim Burney Branch Bridge – LADOTD Civil Engineer Intern contributing to the preparation of 60% final plans review and submittal. Linh completed revisions for initial design due to comments from the district and Project Engineer reviewer. He completed a bridge rating using AASHTOWare Bridge Rating software and STAAD Analysis.
12/19 – 04/20	I-10: Texas State Line - East of Coone Gully - LADOTD Civil Engineer Intern checking bent detail and quantities for three of five bridge sites (six bridges total). Linh completed a bridge rating using AASHTOWare Bridge Rating software and STAAD Analysis for all bridge sites (10 bridges total). He checked Pile data quantities to ensure Geotechnical and Bridge Plans have the same values and designed a custom elastomeric bearing pad for prestressed girder bridges.

	Firm employed by	Hardesty & Hanover, LLC		
	Name	Rafal Wuttrich, PE	Years of relevant experience with this employer	11
	Title	Senior Structural Engineer	Years of relevant experience with other employer(s)	14
Degree(s) / Years / Specialization			MS / 2001 / Civil Engineering BS / 1994 / Civil Engineering	
Active registration number / state / expiration date			Professional Engineer: 63030 / FL / 02/28/2027	
Year registered	2005	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Structural Bridge Design Engineer	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
02/21 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Senior Structural Engineer for the pre-design inspection, rehabilitation, and widening of the existing four-lane Lapalco Blvd to provide a facility carrying three lanes of traffic in each direction, as well as the design of a new three-lane double bascule movable bridge crossing of Harvey Canal. The scope of services also includes the design of a new bridge to be constructed as an independent structure adjacent and north of the existing bridge with a new operator house. All design work is in accordance with LADOTD Standards and Specifications and being reviewed by LADOTD. Load rating was performed using AASHTOWare BrDR load rating software.			
07/17 – 06/20	Orlando South Ultimate Interchange Improvements – Florida’s Turnpike Enterprise Senior Structural Engineer assisting with concept development, coordination, and project oversight of a complex interchange, including system and service movements. The project includes an evaluation of a complex interchange that provides both direct and indirect ramping between Orange Blossom Trail and the adjacent two limited access highways. The project goals included: construction of direct connection ramps between freeways, an ultimate 10-lane typical section of the turnpike, implementation of AET, consideration of express direct connections, and improvement of surface street operations with two new reliever interchanges. The recommended configuration included improvements to systems interchange, modification to two adjoining interchanges, and new proposed service interchange.			
01/21 – 02/25	SR 826/Palmetto Expressway Capacity Improvement Design-Build, Miami-Dade County, FL – Florida DOT Senior Structural Engineer responsible for design of modifications to the Ramp D Flyover Bridge. This project improves operations with an additional SB general purpose lane, auxiliary lanes, and improved shoulder widths, requiring major modifications to the NW 103rd Street interchange. H&H is the lead designer, responsible for roadway, drainage, permitting, traffic control, tolling and bridge design. Responsible for bridge modeling, staged construction analysis, temporary pier support analysis and design, bridge load rating, and plans production. To allow for widening of the mainline, the bridge section of the Ramp D Flyover Bridge required reduction by removing the existing exterior continuous steel plate girder line from End Bent 1 to Pier 6. Removal of one girder line resulted in force imbalances on numerous substructure locations, requiring modification of the existing substructure. Existing Piers 2 and 3 are hammerhead-type piers with single column on pile footings that required partial removal of the existing cap, use of post-tensioning connecting the existing pier cap to new column struts, and connection of PT to pier footing extension counterweights attached to the existing footing. Existing Pier 4 is a straddle-type pier that required strengthening to satisfy current AASHTO LRFD design specifications. Existing Pier 5 is a C-type pier that required replacement of the column and cap. Pier 5 work was staged using temporary steel piers connected to the existing footing with undercut anchors, and new cap and column using reinforcement anchored to the existing footing with undercut anchors. Existing Pier 6 required attachment of a new concrete counterweight with steel ballast to the existing pier cap. For the superstructure, the deck overhang required reconstruction for the reduced width, and bridge drainage system required replacement.			

08/16 – 06/18	I-75 SB Exit Design from S of Bypass Canal to EB/WB, Tampa, FL – Florida DOT Senior Structural Engineer assisting with preparation of plans and engineering documentation. This two-mi. roadway improvement project included the addition of a new auxiliary lane for southbound I-75 from south of the Bypass Canal to the southbound off-ramp and widening the I-75 southbound off-ramp from one to two lanes. A unique aspect of the design approach was the incorporation of this design into a long-term buildout of the interchange. This project was expedited for construction based on no right of way acquisition or impacts to Florida Gas Transmission lines.
05/18 – 11/19	SR 5 (Overseas Highway) over Moser Channel (7 Mile Bridge), Monroe County, FL – Florida DOT Senior Structural Engineer responsible for performing structural design calculations and various other tasks, including Finite Element Analysis (FEA) for the custom temporary support system, a segmental post-tensioned concrete superstructure, to facilitate rehabilitation of columns at 16 intermediate piers and one expansion Pier 22 (replacement of bearings and concrete repairs). Weight transfer at intermediate piers was enabled by a pair of two-part friction collar steel weldments, each having a support arm with hydraulic jacks placed on top to provide lifting force separating superstructure from permanent column bearings. Friction between the steel weldments and the concrete columns was induced by clamping force from 24 steel rods stressed at 118 kips each. Maximum anticipated vertical reaction (service) at any of the two support points was 537 kips at each support arm, including restored traffic during pier repairs. The collars were fully load tested before traffic was allowed back on the bridge. Weight transfer at expansion Pier 22 is provided by a four-part friction collar, each with a supporting arm, thus a pair of arms supports each side of the expansion joint. An additional steel assembly wedge is on each side of the segment webs for additional support points.
04/17 – 04/24	Gateway Expressway Improvement Design-Build, Pinellas County, FL – Florida DOT Senior Structural Engineer responsible for quality control of design calculations and plans of four bridges in Segment 4. Structure designs included bridge widening of the existing I-275 SB over Gandy Blvd. (Bridge 22) and I-275 SB over Roosevelt Boulevard (Bridge 23) four-span prestressed concrete beam structures. I-275 NB over Roosevelt Boulevard (Bridge 24) replaced an existing four-span prestressed concrete beam structure with a new two-span prestressed concrete beam structure on a parallel alignment. I-275 over Big Island Gap (Bridge 29) modified an existing three-span prestressed concrete beam structure, which relocated the existing concrete median traffic railing and installed new bridge drainage components (scuppers and longitudinal conveyance system) for I-275 NB.
02/15 – 12/16	I-75 at SR 50 Interchange Bridge Replacement & Widening, Hernando County, FL – Florida DOT Senior Structural Engineer responsible for contributing to the design and plan preparations for the replacement of twin bridges on I-75 over SR 50. Additional engineering responsibilities included the design of the early works construction package, temporary and permanent wall design, and contributions to the new bridge superstructure design. The two 29-ft., 6-in. individual bridges carry the north and southbound traffic of I-75 to a single-point urban interchange at SR 50. The approximately 12-ft.-deep superstructure consists of weathering steel plate girder structures supported on end bents. Mechanically stabilized earth walls wrap around each bridge and continue for hundreds of feet before meeting grade. This design-build project also used a temporary widening of the existing southbound I-75 bridge as part of the maintenance of traffic plan during construction of the new bridge.
03/17 – 02/23	SR 75 (US 231) from SR 30A (US 98) to Pipeline Road, Panama City, FL – Florida DOT Senior Structural Engineer responsible for the design of a new 840-ft.- long steel bridge on SR 75, crossing US 231 and the CSX railroad, as part of a new single-point urban interchange (SPUI). The design consists of a single three-span continuous unit (215, 355, and 215 ft.) with steel plate girders and a concrete deck. The intermediate pier columns support integral post-tensioned concrete caps. Responsible for Bridge Development Report (BDR), and leading role for all aspects of structural design.
06/15 – 05/19	I-75 CD Ramp over Sligh Avenue, Hillsborough County, FL – Florida DOT Senior Structural Engineer responsible for the preliminary design, Bridge Development Report, and load rating of the widening of a 233-ft.-long three-span interstate ramp bridge over Sligh Avenue. The proposed widening of the superstructure and substructure included prestressed beams on a hammerhead pier substructure.

	Firm employed by	Hardesty & Hanover, LLC		
	Name	Courtney Mai, EI	Years of relevant experience with this employer	1
	Title	Civil Designer	Years of relevant experience with other employer(s)	3
Degree(s) / Years / Specialization			B.S. / 2018 / Civil Engineering	
Active registration number / state / expiration date			Engineer in Training: 35745 / LA / 09/30/2026	
Year registered	2024	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Structural Bridge Designer	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
04/24 – Present	H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Engineer Intern for the complete rehabilitative engineering design, and road design services required for the partial replacement of the Almonaster Ave Bridge and a new connector road. The Almonaster Ave Bridge crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. 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 the connecting roads were required to return this bridge to its full operating capability. The road design services included a new alignment for the connecting road including all drainage structures. H&H also developed a hydraulic study and a site plan that included several retention ponds for drainage improvements. Other services included environmental, geotechnical, and pavement design.			
04/24 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Engineer Intern for the design of a new three-lane double bascule movable bridge crossing of Harvey Canal and the widening of the existing four-lane Lapalco Blvd to provide a facility carrying three lanes of traffic in each direction in an urban area. The new bridge will be constructed as an independent structure adjacent to the north of the existing bridge with a new operator house. The 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 in accordance with LADOTD Standards and Specifications and reviewed by LADOTD.			
04/24 – Present	H.009730.5 SNBI Data Collection, Statewide, LA – LADOTD Engineer Intern for retrieving, verifying, and entering the Specifications for the Nation Bridge Inventory (SNBI) data into InspectX for the bridges statewide for Louisiana Department of Transportation and Development (LADOTD). Tasks include review of pertinent documents such as rehabilitation plans, as-built plans, shop drawings, and inspection reports. These documents will be obtained from various LADOTD offices including General Files, Bridge Design Section, Bridge Maintenance Section, and District offices. Necessary information will be collected from the site when such information is unavailable from the plans.			
04/24 – Present	I-10 & I-12 College Dr Flyover Ramp Design- Build, Baton Rouge, LA - LADOTD Engineer Intern for construction quality control/quality assurance for this flyover ramp design-build project which is located at the I-10 West exit to College Dr, in advance of the I-10 & I-12 West merge. H&H serves as Design-Builders Construction Quality Control Firm (CQCF) and oversees all Design Quality Control and Construction Quality Control activities for the project. Scope includes the development and implementation of Comprehensive Quality Plan to ensure the design and construction conforms to all specified requirements. H&H will develop, maintain, and update Contractor Quality Management Plan and provide qualified Inspectors, material sampling, testing, and independent testing labs to ensure contractors and off-site fabrication facilities meet project specifications.			

06/24 – Present	H.009730.5 LADOTD Movable Bridge Manual, New Orleans, LA - LADOTD Engineer Intern responsible for the development of the LADOTD Movable Bridge Inspection Manual (including details, photos, illustrations, and specific examples); building a lesson plan and materials for the classroom training from the inspection manual; and providing classroom and field training. The manual will include bridge inspection principles and overview; movable bridge overview; mechanical, electrical, and structural inspection of movable bridges; operator house; and classroom and field training for electrical, mechanical, and structural.
04/24 – Present	H.009730.5 In-Depth Bridge Inspection of Complex Structures, Statewide, LA - LADOTD Structural Inspector performing inspection of complex structures such as cantilever trusses, cable-stayed bridges, steel vertical lift bridges, and plate girder bascule bridges statewide under separate task orders. Inspection of two steel truss bridges (Jimmie Davis and Miller's Bluff) and US 90 bridges at Krotz Springs have been completed to date.
05/19 – 05/22	Engineer Intern for various following projects: - Designed various pipe racks, access tunnels, and rock anchors for underground mining for Freeport. - Designed various foundations and equipment platforms such as monorails, tank supports, pipe supports for industrial facilities. - Inspection of various wharves throughout the New Orleans area. Performed inspection and developed inspection reports. Assisted in design and load capacity. - Design of equipment supports and pipe racks for offshore platforms. - Design of pipe supports, foundations, access platforms, auxiliary building for industrial complexes.
07/24 – 12/24	I-110 Bascule Bridge over Biloxi Back Bay Inspection, Biloxi, MS - Mississippi DOT Structural Inspector providing routine and fracture critical structural inspection of all components of the bascule and anchor spans per the Movable Bridge Inspection Manual. Providing NBIS and element inspection for the entire bridge.
01/25 – Present	H.015963.5 IDIQ Contract for Movable Bridge Preservation Task US 165 Red River MB Ped Gates (Jackson St.), Rapids Parish, LA - LADOTD Structural Designer assisting in developing plans and specifications to accommodate new pedestrian gates to this vertical lift bridge in accordance with LADOTD policies and standards. Providing new ADA accessible pedestrian gates and signage to pedestrian gate panel warning do not proceed. Also detailing Traffic Control plan sheets.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Elizabeth Barabas, PE	Years of relevant experience with this employer	14
	Title	Inspection Team Leader	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		BS / 2007 / Civil Engineering		
Active registration number / state / expiration date		Professional Engineer: 92352 / NY / 12/31/2027 NHI Safety Inspection of In-Service Bridges, Course #130055, 2014 NHI Bridge Inspection Refresher Training, Course #130053, 2023 NHI Fracture Critical Inspection Techniques for Steel Bridges, Course #130078, 2016 NHI LRFR for Highway Bridges, Course #130092, 2020 SPRAT Rope Access Level 1 (2022) OSHA Confined Space Training (2017)		
Year registered	2019	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		NBIS Inspection Team Leader		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
09/18 – 11/18	I-110 Bridge over Biloxi Back Bay, IDIQ Master Bridge Design Contract, Harrison, Mississippi - Mississippi DOT Team Leader for routine/fracture critical inspection of I-110 Bridge over Biloxi Back Bay for Mississippi Department of Transportation. Inspection included electrical, mechanical, and structural inspection of the bascule and anchor spans and NBIS and element inspection for the entire bridge in accordance with state, AASHTO, and FHWA requirements.			
11/21-11/25	MDTA Structures Inspection Program and Miscellaneous Engineering Services (Statewide, MD) – Maryland Transportation Authority Signature Bridge Inspection Team Leader responsible for performing the hands-on inspection of the inspection of the suspension spans (S32-S34) of the westbound William Preston Lane (WPL) Bridge. This included rope access for the main span cables and suspender ropes and underbridge inspection vehicle (UBIV) for the floor trusses, girders, stringers, and secondary members. Liz also led the inspection of multiple bridges carrying MD200 (Intercounty Connector) over roadways and streams. Structures included steel and prestressed concrete girders on straight and curved alignments. Findings were reported in ASIR.			
04/23- Present	MDOT SHA BCS 2021-21 Bridge Condition Inspection of Routine, Complex & Movable Bridges (Statewide, MD) – Maryland DOT Inspection Team Leader responsible for the condition inspection and evaluation of the US340 bridge over the Potomac River, CSX rail and Sandy Hook Road. The bridge consists of 2 steel beam approach spans and 4 three-unit continuous steel truss main spans. Liz performed the hands-on inspection of bridge elements including the truss, stringers, floor beams, girders, piers, and secondary members using rope access through aided climbing. Liz prepared the inspection report, updated element ratings and SI&A inventory.			
02/22-03/24	NYSTA Biennial Inspection of the Governor Mario M. Cuomo Cable-Stayed Bridge (Tarrytown, NY) – New York State Thruway Authority Inspection Team Leader responsible performing the hands-on inspection of this cable-stayed bridge. Liz inspected all elements including cables, girders, stringers, piers, towers, and secondary members, along with 82 multi-girder approach spans and all appurtenances such as sign structures, high mast lights and standard light poles. Access methods included rope aided climbing, underbridge inspection vehicle (UBIV), bucket boats, plus catwalks and traveler platforms. Managed all field inspection teams, including subconsultants, arranged for traffic control, issued critical findings and immediate repair notices. Prepared bridge inventory records, flag reports, and inspection reports via NYSDOT's Bridge Data Inventory System (BDIS).			
04/22-08/25	NYSDOT Biennial, Interim, and Special Inspection of Various Countywide Bridges (Bronx, NY) Inspection Team Leader performing the comprehensive inspection, structural analysis, and load rating services for 355 movable and truss bridges, including 41 bridges over passenger/freight rail. Liz provided biennial inspection reports (through BDIS), and emergency response inspection and structure evaluation services. The field inspection is performed per NYSDOT Bridge Inspection Manual and includes NDT.			

04/15 – 02/16	Biennial Inspection of the Atlantic Beach Bridge, Nassau County, NY – Nassau County Bridge Authority Team Leader responsible for the biennial inspection of a double leaf bascule bridge and approaches. Work included the inspection and examination of the condition of all structural components in accordance with NYSDOT requirements. Responsibilities included inspection scheduling, MPT coordination, field documentation and sketches, updating and verifying Bridge Inventory data, and NYSDOT inspection report.
05/17 – 12/19	Biennial and Special Inspection of the Throgs Neck Bridge, Bronx, NY - Triborough Bridge and Tunnel Authority Team Leader responsible for the overall management of the structural inspection of the Throgs Neck Bridge and associated ramp structures. Project includes National Bridge Element (NBE) Inspection of all structural elements (including fracture critical elements such as truss chords and gusset plates), load rating calculations and updates, inventory updates and report submittals. Supplementary tasks include design document preparation for structural repairs of elements requiring immediate repair, special interim inspections, and scoping studies for future projects related to the facility.
05/16 – 11/16	Biennial Inspection of Robert F. Kennedy Bridge, New York, New York – MTA Bridges and Tunnels Team Leader for the biennial inspection of the Harlem River Lift Bridge, approaches, and associated ramp structures. Work included the inspection and examination of the condition of all structural components in accordance with NYSDOT requirements. The inspections included all elements on the three through truss spans, lift span towers, decks, structural framing, and piers, as well as all abutments and retaining walls. Responsible for hands-on inspection and concrete sounding on the structure, documentation of inspection findings, creation of field sketches, preparation of Bridge Data sheets, updating and verifying inventory data/database, NYSDOT inspection reports, high rocker bearing report, wearing surface report, preparation of bridge flag reports.
06/14 – 02/15	Biennial and Interim Inspections of Robert F. Kennedy Bridge, New York, New York – MTA Bridges and Tunnels Team Leader for the biennial & interim inspections of the suspension spans, approaches, and associated ramp structures of the Robert F. Kennedy Bridge. Work included the inspection and examination of the condition of all structural components in accordance with NYSDOT requirements. Responsible for NYSDOT inspection reports, hollow concrete report, preparation of bridge flag reports, documentation of inspection findings, creation of field sketches, preparation of Data sheets, updating and verifying data and database.
04/15 – 02/16	Biennial Inspection of the Henry Hudson Bridge, New York, New York – MTA Bridges and Tunnels Team Leader for the biennial inspection of the arch span, upper & lower level, approaches, and associated ramps. Work included the inspection and examination of the condition of all structural components in accordance with NYSDOT requirements for the biennial inspection and verification of load ratings. Responsible for load ratings, inspection reports, preparation of bridge flag reports, documentation of inspection findings, creation of field sketches, preparation of data sheets, and updating database. Also assisted in development of a computerized asset management system for client element database.
05/18 – 06/19	Biennial Inspection of the Verrazzano-Narrows Bridge, New York, New York – Triborough Bridge and Tunnel Authority Team Leader responsible for the inspection of the Verrazzano-Narrows Bridge main cables and suspender ropes. Performing analysis, special fracture critical inspections, load ratings and providing recommendations, repair estimates, and rehabilitation design. Fracture critical elements such as truss chords and gusset plates. Load rating calculations and updates.
05/13 – 02/15	NYSDOT Biennial & Interim Bridge Inspections, Nassau/Suffolk, NY – New York State DOT Assistant Team Leader responsible for the inspection of multiple bridges; documentation of inspection findings, preparation of field sketches and flag reports, MPT coordination, updating and verifying Bridge Inventory data, and NYSDOT inspection reports.
05/11 - 09/11, 05/12 - 09/12, 01/13 - 05/13, 06/15 - 07/15	Biennial & Interim Bridge Inspections of Rainbow Bridge, Lewiston-Queenston Bridge, and Whirlpool Rapids Bridge, Niagara Falls, NY – Niagara Falls Bridge Commission Team Leader (2015)/Assistant Team Leader (2011-2013) responsible for the inspection of a 950-foot steel hingeless spandrel arch span bridge and its reinforced concrete barrel arch span approaches, as well as a 1,000-foot steel hingeless spandrel arch span bridge and its steel box girder approaches, and inspection of a two-hinged bi-level steel truss arch bridge and its plate girder railway approach spans. Inspections included primary fracture critical structural elements such as eyebar trusses, arch ribs, spandrel columns/girders, floorbeams, and approach span girders/floorbeams, as well as secondary members. Inspection also included a steel roof truss canopy as well as other buildings, plazas, and facilities associated with the bridges. Responsibilities included documentation of inspection findings, preparation of field sketches, updating and verifying Bridge Inventory data, inspection reports, and client reports.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Brianna Kovacs, PE	Years of relevant experience with this employer	8
	Title	Inspection Team Leader	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S. / 2017 / Civil Engineering / University of Maryland		
Active registration number / state / expiration date		Professional Engineer: 51187 / MD / 12/6/2025 NHI Safety Inspection of In-Service Bridges, Course #130055, 10/2018 NHI Bridge Inspection Refresher Training, Course #130053, 2023 NHI Fracture Critical Inspection Techniques for Steel Bridges, Course #130078, 2022 Inspection and Maintenance of Ancillary Highway Structures, Course #130087, 2021 Underwater Bridge Inspection, Course #130091, 2022 NHI -Stream Stability & Scour at Highway Bridges for Bridge Inspectors, Course #135047V (2024) NHI Scour at Highway Bridges: Concepts and Definitions, Course #135087, 2024 NHI Stream Stability Factors and Concepts, Course #135086 (2024) OSHA Confined Space Training (2021)		
Year registered	2016	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		NBIS Inspection Team Leader		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
09/18 – 11/18	I-110 Bridge over Biloxi Back Bay, IDIQ Master Bridge Design Contract, Harrison, Mississippi - Mississippi DOT Team Leader for routine/fracture critical inspection of I-110 Bridge over Biloxi Back Bay for Mississippi Department of Transportation. Inspection included electrical, mechanical, and structural inspection of the bascule and anchor spans and NBIS and element inspection for the entire bridge in accordance with state, AASHTO, and FHWA requirements.			
04/23- Present	MDOT SHA BCS 2021-21 Bridge Condition Inspection of Routine, Complex & Movable Bridges (Statewide, MD) – Maryland DOT/SHA Team Leader responsible for the condition inspection and evaluation of the US340 bridge over the Potomac River, CSX rail and Sandy Hook Road. The bridge consists of 2 steel beam approach spans and 4 three-unit continuous steel truss main spans. Responsible for performing the hands-on inspection of bridge elements including the truss, stringers, floor beams, girders, piers, and secondary members using rope access through aided climbing. Also prepared the inspection report, updated element ratings and SI&A inventory.			
07/22 - Present	Citywide Structures & Bridges On-Call Engineering Services, Fairfax, Virginia – City of Fairfax Structural Bridge Inspection Team Leader responsible for the inspection of reinforced and prestressed concrete slab bridges and developing and reviewing the inspection reports.			
09/20-10/24	Annual NBIS Bridge Inspection, Evaluation, & Rating Services, Statewide, MD - Maryland DOT/SHA Team Leader responsible for the condition inspection and evaluation of culverts, bridges, and movable bridges in Baltimore City and several Maryland counties. Brianna obtained right of entry permits for MTA, CSX, and AMTRAK railroads access, MOT permits for street closures, special access requests from private companies, and equipment and MOT vendors. Performed hands-on inspections, recorded SI&A and Element Level Condition States following FHWA, AASHTO, and the client and developed inspection reports within the client's Asset Management system, which included clearance and sounding sketches. Inspected structures made of timber, concrete culverts, multi-beam steel, and concrete spans, through girders and steel through trusses. The three movable structures comprised of a swing span, a rolling lift span, and a double-leaf bascule each received a full hands-on inspection of the structural, mechanical, and electrical systems.			

07/21-11/25	Facility Inspections, Intercounty Connector (ICC), Laurel, MD - Maryland Transportation Authority Structural Bridge Inspection Team Leader responsible for developing inspection cost proposal, coordination with subcontractors, equipment vendors and the facility owner, as well as performing physical on-site condition inspections and developing and reviewing reports for all traffic related structures on the ICC (bridges, small structures/pipes, high mast light poles, roadway pavement, traffic safety features, low level lights, retaining walls, noise walls, and underground structures).
06/20-11/21	Moravia Road (Bridge BWC5595001) Emergency Inspection and Rehabilitation, Statewide, MD – Maryland Transportation Authority Structural Bridge Inspector and Load Rating Engineer responsible for initial emergency inspection, drawing repair plans and using load rating analysis software to perform the load rating based on the repair design.
07/17-12/19	NBIS Bridge Inspection, Evaluation, & Rating Services, Statewide, MD – Maryland DOT/SHA Team Leader responsible for the condition inspection and evaluations of eight multi-girder interstate bridges on I-95 and I-495. Performed this work in nighttime lane closures with multiple MOT set-ups and bucket truck access. Coordinated with the client's regional TCM before, during, and after each closing. Recorded findings of deterioration, corrosion, and safety concerns as well as condition states for each of the bridge elements following AASHTO and updated SI&A following FHWA and client standards. Used an ultrasonic thickness meter to determine the extent of section loss on structural elements. Developed all reports with color photographs, vertical clearance sheets, and sounding profiles in the client's web-based asset management and reporting system. Also, responsible for the delivery of condition inspection and evaluation reports for bridges and culverts in in several Maryland counties. Performed hands-on inspections, and developed reports with updated SI&A and ELI condition states in the client's asset management database.
11/18-06/21	NBIS Facilities Inspection Services, Statewide, MD – Maryland Transportation Authority Assistant Team Leader responsible for coordinating access and teams for the annual condition inspection and evaluation, including documenting all inventory data for MDTA bridges on I-95, I-695, I-895, and US 50 over the Chesapeake Bay. Obtained MOT lane closure and detour permits from City and State agencies, and coordinated weekly work schedules with MDTA, subconsultants, equipment and MOT vendors. Additional responsibilities include overall facility tracking of inspections and reports for structures assigned to the JV team, hands-on and visual inspections of the facility bridges, recording SI&A and element level condition states, documenting inspection findings in client's web-based application for asset management, reviewing inspection reports generated by other firms to maintain consistency in reporting, processing invoices received from equipment and MOT vendors, preparing progress reports, and coordinating the NDT of pins and parapet tie-downs.
09/17-12/18	Annual NBIS Facilities Inspection, Statewide, MD - Maryland Transportation Authority Assistant Team Leader responsible for the planning, coordination, and execution of annual condition inspections and evaluations of 64 MDTA-owned bridges on a 60-mile length of I-95 for the JV project team. Brianna coordinated with firms and vendors to perform multiple simultaneous inspections and meet the client's FHWA asset anniversary dates. Brianna personally coordinated obtaining MOT lane closure permits, scheduling equipment, and MOT vendors for 19 bridges. She performed hands-on inspections, including night work, updated SI&A, and element level data collection and generated inspection reports in the client's web-based electronic asset management system.
7/17-10/17	Comprehensive Engineering Services Contract, Curtis Creek, Baltimore, MD - Maryland Transportation Authority Assistant Team Leader for the project involving the structural inspection of the I-695 drawbridge (parallel double-leaf bascule). Responsible for preliminary and final designs, calculations, and drawings of temporary and permanent structural repairs to the I-695 Bridges over Curtis Creek. Under this contract, H&H performed the inspection of the I-695 bridges over Curtis Creek, which crosses over CSX rail tracks. To complete the inspection, we obtained right-of-entry permits and insurance for any work over active tracks. The bridge was accessed using an 85' manlift from within a lane closure at a track crossing beneath. This overall inspection was complicated by the immediate proximity of the Pennington Avenue bridges. All inspectors had current rail safety certifications and training for the equipment used.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Paul Marzuillo, PE	Years of relevant experience with this employer	12
	Title	Inspection Team Leader	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		MS / 2014 / Civil Engineering BS / 2012 / Civil Engineering		
Active registration number / state / expiration date		Professional Engineer: 096567-1 / NY / 11/30/2027 NHI Safety Inspection of In-Service Bridges, Course #130055, 2/2017 NHI Bridge Inspection Refresher Training, Course #130053, 2022 NHI Bridge Inspection Refresher Training, Course #130053, 2023 NHI Fracture Critical Inspection Techniques for Steel Bridges, Course #130078, 2018		
Year registered	2016	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		NBIS Inspection Team Leader		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
07/21-present	2021-2025 Biennial and Interim Bridge Inspection, Bronx County, Region 11, Bronx, NY- New York State DOT Team Leader for general, interim, and special inspections for 355 bridges in Bronx County. Responsible for structural analysis, load rating calculations, AASHTOWare model checks and updates, and biennial inspection reports (through BDIS). H&H is providing inspection of 41 bridges over Metro-North, Amtrak and CSX rail lines. Railroad force account personnel (flagging) were procured directly through this contract. The inspection also includes all appurtenances such as signs and supporting structures, high mast and standard light poles, utilities and communication equipment attached to the structures. The field inspection follows the requirements of the NYSDOT Bridge Inspection Manual and includes a significant amount of non-destructive testing. Inspection teams followed rigorous security and NYCDOT permitting requirements and handled all aspects of WZTC, which required challenging closures at varied working hours.			
04/20-05/21	2020-2021 Biennial Inspection of the Mario Cuomo Bridge, Tarrytown, NY -New York State Thruway Authority Field Operations Coordinator / Team Leader for the biennial bridge inspection for the Governor Mario M. Cuomo Bridge (formerly the Tappan Zee Bridge). The inspection includes the northbound and southbound Bridges. H&H is following the Uniform Code of Bridge Inspection as required as per the NYSDOT Bridge Inspection Manual. The inspection includes National Bridge Elements (NBE's), Bridge Management Elements (BME's) which are rated in accordance with AASHTO's Element Level Inspection method. In addition, Agency Developed Elements (ADE's) are being rated as outlined in the NYSDOT Bridge Inspection Manual per AASHTO's Element Level Inspection method. H&H is also responsible for traffic control. The bridge inspection is performed, processed, and submitted using NYSDOT's Bridge Data Inventory System (BDIS).			
04/18 – 03/19	Biennial Inspection of the Verrazzano-Narrows Bridge, New York, NY – Triborough Bridge and Tunnel Authority Team Leader responsible for the inspection of the Verrazano-Narrows Bridge main cables and suspender ropes. Performed analysis, special fracture critical inspections, and load ratings. He also provided recommendations, repair estimates, and rehabilitation design. Responsible for inspecting fracture critical elements, such as truss chords and gusset plates.			
05/17 – 12/23	Biennial Inspections of the Goethals Bridge, Elizabeth, NJ – New York/New Jersey Link Team Leader for the initial Biennial Bridge inspection of the cable-stayed Goethals Bridge (both eastbound and westbound structures) including the structure approach ramps. Work included a hands-on field inspection of the cable-stayed main spans primary elements, including the towers, main cable sockets, and span floorsystem in order to develop NYSDOT Reports and a Facility Condition Survey. The H&H inspection team worked closely with NYNJ Link to perform inspections within strict traffic maintenance windows.			

06/17 – 01/18	Biennial Inspection of the Throgs Neck Bridge, Bronx, NY – Triborough Bridge and Tunnel Authority Team Leader responsible for the overall management of the structural inspection of the Throgs Neck Bridge and associated ramp structures. Project includes National Bridge Element (NBE) Inspection of all structural elements (including fracture critical elements such as truss chords and gusset plates), load rating calculations and updates, inventory updates and report submittals. Supplementary tasks include design document preparation for structural repairs of elements requiring immediate repair, special interim inspections, and scoping studies for future projects related to the facility.
06/16 – 04/17	Biennial Inspection of RFK Vertical Lift Bridge, Group B, New York, NY – Triborough Bridge and Tunnel Authority Team Leader responsible for the biennial inspection of a vertical lift bridge and its approach spans. Led the inspection of fracture critical girders, pier caps, primary members, structural deck, and secondary members. Responsible for documenting inspection findings, creating field sketches, preparing Bridge Data sheets, and updating and verifying Bridge Inventory data. Also prepared bridge flag reports and New York State DOT Biennial inspection reports.
03/16 – 11/16	2016 Condition Survey of Terminal Bridges at the JFK Airport, Jamaica, NY – Port Authority of New York & New Jersey Assistant Team Leader/Security Information Manager for the Biennial Inspection of 11 Vehicular Bridges and 7 Pedestrian Bridges at John F. Kennedy International Airport. The structures were comprised of several types including steel multi-stringer, and prestressed concrete girder and box beam superstructures. The inspection included landside and airside structures and required significant coordination with the Facility and Port Authority Police for security reasons. The inspection was performed in compliance with the latest NYSDOT/ FHWA/ NBIS requirements including those for element level inspections. The inspection determined the condition of the specific structures and identified structural and non-structural deficiencies which may present a potential safety hazard. Was tasked with developing quantities and elements within BDIS and for developing the NYSDOT reports through BDIS, as well as developing recommendations to rectify all observed deficiencies.
01/15 – 12/16; 07/17-12/18	Biennial Inspection of the Whirlpool Rapids Bridge and Interim Inspection of the Rainbow and Lewiston-Queenston Bridge, Niagara Falls, NY – Niagara Falls Bridge Commission Team Leader (2017) / Assistant Team Leader (2015) responsible for performing hands-on structural inspection, report preparation and repair recommendations for a 950-foot steel hingeless spandrel arch span bridge and its reinforced concrete barrel arch span approaches as well as a 1,000-foot steel hingeless spandrel arch span bridge and its steel box beam approach spans. Inspection included fracture critical elements such as arch ribs, spandrel columns and girders, and approach box beams and floorbeams. Inspection scope also included the approach span bridges, adjoining plazas, the NFBC Administration Building, and associated roadways of the Niagara Falls Bridge Commission. Work included preparation of NYSDOT Biennial and Facility Narrative reports for all three bridges. Also performed interim inspection of a two-hinged bi-level steel truss arch bridge and its plate girder railway approach spans.
04/14 – 03/15	2014 and 2015 Biennial Inspection of the RFK Suspension Bridge, New York, NY – Triborough Bridge and Tunnel Authority Assistant Team Leader responsible for performing hands-on inspection of various concrete, steel, and aluminum elements throughout the RFK Bridge – Group A bridges. The RFK Group A bridges consist of 142 main-line spans, as well as an exit ramp, two (2) pedestrian ramps, and two (2) out-of-service vehicular ramps. The main-line bridge includes a 2,724-foot suspension bridge and seven spans of thru-trusses, both with orthotropic decks, as well as steel framed approach spans with a cast-in-place concrete deck. The inspection included 100% hands-on inspection of all fracture critical and special emphasis members per the NYSDOT Bridge Inspection Manual 2014 Edition. In addition to these elements, Was responsible for inspection of truss elements, main suspension cables and cable strands. The cable strand inspection involved wedging several strands to reveal the condition of the interior wires. This procedure was completed per NCHRP Report 534: Guidelines for Inspection and Evaluation of Suspension Bridge Parallel Wire Cables, 2004 Edition. Developed NYSDOT Inspection Reports and for noting all deficiencies observed during inspection, creating field sketches, and updating and verifying the Bridge Inventory data. He was responsible for developing NBE elements and quantities.
04/13-08/14	2013-2014 Region 10 Biennial and Interim Bridge Inspection, Long Island, NY - New York State DOT Team Leader for biennial inspections of over 300 Long Island Bridges in both Nassau and Suffolk Counties. The structures vary in size and type and include the Robert Moses Causeway NB and SB bridges over Great South Bay, as well as the Fire Island Inlet Bridge, Loop Parkway over Swift Creek, Bayville Bridge, Meadowbrook, and Wantagh Parkway bridges over Goose Creek and Sloop Channel near Jones Beach. The inspections included decks, structural framing (fracture critical at approximately 100 structures) and piers, as well as all abutments and retaining walls. In addition to these primary structural elements, Hardesty & Hanover inspected the structures appurtenances, signs and their supporting structures, light standards, and electrical equipment on the bridges.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Rima Zahalan, PE	Years of relevant experience with this employer	12
	Title	Inspection Team Leader	Years of relevant experience with other employer(s)	6
Degree(s) / Years / Specialization		M.S., Structural Engineering, 2010 B.S., Civil Engineering, 2008 B.A., Mathematics, 2008		
Active registration number / state / expiration date		Professional Engineer: NY / 095009 / 6/30/2026 NHI-130055: Safety Inspection of In-Service Bridges / 2013 NHI-130053: Bridge Inspection Refresher / 2023 NHI-130078: Fracture Critical Inspection Techniques for Steel Bridges / 2015 NHI-135087: Stream Stability & Scour at Highway Bridges, 2015 NHI-135086 Stream Stability Factors and Concepts, Course #135086, 2015 NHI-130087: Inspection and Maintenance of Ancillary Highway Structures / 2015 NHI-130092: Fundamentals of LRFR and Applications of LRFR for Bridge Structures / 2020 OSHA-ANSI: Fall Protection / 2014 OSHA: Confined Space Training, 2015		
Year registered	2015	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		NBIS Inspection Team Leader		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
06/24-present	2024 and 2026 Biennial Bridge Inspection & Design of Miscellaneous Structural Repairs at the RFK Bridge: Approach Spans & Lift Spans – Group B - New York, NY Triborough Bridge and Tunnel Authority Team Leader responsible for the biennial inspection of a vertical lift bridge and its approach spans and ramp structures. Responsible for inspecting and reporting with Element Level Bridge Inspection (ELBI) quantities and condition state rating. Responsible for writing flag and CMR reports and developing Biennial Reports.			
10/21-01/22	Inspection of 3 On-System Bergen County Movable Bridges, Group 02H0, Cycle 1 – New Jersey DOT Team Leader for the NBIS structural evaluation, analysis, and inspection covering three movable bridges: Court Street (CR 56) over the Hackensack River, Kingsland Avenue Bridge over the Passaic River, and Union Avenue Bridge over the Passaic River. Both Court Street and Kingsland Avenue bridges are Fracture Critical. Ms. Zahalan’s responsibilities included performing hands-on inspections, updating, and reviewing all structure inventory, appraisal items, bridge inspection reports, coding bridge elements, scheduling, MPT/equipment arrangements, field priority repair identification and assessment, repair design and drawings as needed, SI&A/CombIS item and element coding, and coordinating with county engineers and supervising teams for on-site mechanical & electrical inspections and testing. Equipment used on this project included bucket trucks, snoopers, ladders, MPT coordination, and nondestructive testing.			
05/16 – 05/18	2016 Biennial Inspection of the Robert F. Kennedy Harlem Lift Bridge, New York, NY – Triborough Bridge and Tunnel Authority Project Engineer/Team Leader responsible for performing in-depth structural inspections, condition evaluations, reporting, and load ratings of the project bridges. Project includes inspection of mechanical and electrical systems of the Harlem River Lift Bridge and associated ramp structures of the Robert F. Kennedy Bridge. Includes elevator inspection, fathometric surveys, diving inspections, design document preparation for structural repairs of elements			

	requiring immediate repair, auxiliary testing to determine extent of deterioration, special interim inspections, and scoping studies for future projects related to the facility.
05/17 – 12/21	Biennial Inspection of the Throgs Neck Bridge, Queens/Bronx, New York – Triborough Bridge and Tunnel Authority Structural Qualified Team Leader (QTL) responsible for field inspection, inventory and database coding, flag report writing, biennial and supplemental report writing, fracture critical element inspection, load ratings, and repair designs (3 BINS) for this complex, long span suspension bridge and its approach spans. The Throgs Neck Bridge carries I-295 traffic between the Bronx and Queens and features an 1800-foot main suspension span over the East River, with 555-foot side spans.
04/17 – 01/18	2017 Biennial Inspections of the Goethals Bridge, Elizabeth, NJ – NYNJ Link Structural Qualified Team Leader (QTL) responsible for the biennial inspection of the new Goethals Bridge replacement. The 1,635-foot eastbound bridge was the first of the twin cable-stayed structures to be constructed. Performed inspection of towers, cables, cable sockets, steel girders, floor trusses, and prestressed concrete beams, and prepared inspection reports for NYSDOT, NJDOT, and PANYNJ. The new design allows for a future light rail or bus corridor between the roadways.
01/17 – 03/17	2016 Interim Inspection of the Henry Hudson Bridge, New York, New York – Triborough Bridge and Tunnel Authority Qualified Team Leader (QTL) for interim inspection of the Henry Hudson Bridge and associated ramp structures of the Queens Midtown Tunnel. Work included the sounding and condition assessment of concrete components using inspection software on tablets.
6/2018 – 2/2020	2018 Biennial Bridge Inspection & Design of Miscellaneous Structural Repairs at the Verrazzano-Narrows Bridge, New York, NY – Triborough Bridge and Tunnel Authority Structural Team Leader responsible for the hands-on NBIS inspection of the Verrazzano-Narrows Bridge including main cables and suspender ropes. Responsible for daily field coordination of all inspection team personnel, and the coordination of flag and CMR reporting with the quality control engineer and TBTA flag and CMR managers. Performed analyses, special fracture critical inspections (truss chords and gusset plates), load rating calculations and updates, and provided recommendations, repair estimates, and rehabilitation design.
06/14 – 10/14	Route 1&9 Pulaski Skyway Rehabilitation – New Jersey DOT Team Leader who performed an in-depth inspection of the superstructure and substructure elements from Pier 78 to 98, including the main truss over the Passaic River, to document and assess existing conditions of all steelwork including trusses, gusset plates, truss bracing members, floor beams, and secondary members along with substructure elements necessary for the design of the structure rehabilitation. Performed load rating analysis for the inspected portion of the truss bridge, using CSi Bridge software to model and analyze the structure under the guidelines of the Load and Resistance Factor (LRFR) rating.
01/13 – 12/15	Inspection of 80 Morris County Bridges (14E5 & 43) and On- & 32 Off-System Morris County Bridges, (14A1) – New Jersey DOT Team Leader for the structural evaluation, analysis, and inspection of over 150 Morris County Bridges for NJDOT. Structure types included arches, culverts, steel/concrete stringer and floorbeam systems, box beams, prestressed girders, trusses, concrete slabs, and thru girders. Responsibilities include performing and managing field teams for hands-on inspections, QA/QC of all structure inventory and appraisal items and bridge inspection reports, coding bridge elements, scheduling, agency/consultant negotiations and coordination, MPT/equipment arrangements, field priority repair identification and assessment, repair design and drawings, and SI&A/CombIS item and element coding. Equipment used included bucket trucks, snoopers, ladders, MPT coordination, and nondestructive testing.

	Firm employed by		Hardesty & Hanover, LLC	
	Name	Dalton Hunt, EI	Years of relevant experience with this employer	3
	Title	Civil Designer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S. / 2017 / Civil Engineering		
Active registration number / state / expiration date		Engineer in Training: 35118 / LA / 9/30/2026 Certifications: NHI 130055 – Safety Inspection of In-Services Bridges; ATSSA Traffic Control Supervisor and Flagger; LPA CE&I Certified		
Year registered	2022	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		Bridge Inspector		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
03/22 – 10/23	H.014363.5 IDIQ Contract for ADA Design Projects Statewide, Slidell, LA - LADOTD Engineer Intern responsible for the evaluation and consideration of current sidewalk features of Robert Blvd. in Slidell, LA. Plans were designed and revised in-house in preparation of the overhaul of sidewalks and adding of ADA compliant handicap ramps and landing areas along the roadway to bring the sidewalks up to current LADOTD standards.			
02/22 – Present	Lapalco Blvd Movable Bridge over Harvey Canal, Westwego, LA - Jefferson Parish DPW/LADOTD Engineer Intern for the pre-design inspection, rehabilitation, and widening of the existing four-lane Lapalco Blvd to provide a facility carrying three lanes of traffic in each direction, as well as the design of a new three-lane double bascule movable bridge crossing of Harvey Canal in an urban area. The scope 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 accordance to LADOTD Standards and Specifications. Load rating was performed using AASHTOWare BrDR load rating software.			
03/24 - Present	H.009730.5 In-Depth Bridge Inspection of Complex Structures, Statewide, LA - LADOTD Structural Inspector performing inspection of complex structures such as cantilever trusses, cable-stayed bridges, steel vertical lift bridges, and plate girder bascule bridges statewide under separate task orders. Inspection of two steel truss bridges (Jimmie Davis and Miller's Bluff) and a vertical lift bridge (West Fork) have been completed to date.			
01/22 – 11/22	Almonaster Ave 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 bridge and a new connector road. The road design services include a new alignment for the connecting road, including all drainage structures. H&H developed a hydraulic study and site plan that includes several retention ponds for drainage improvements. All design work is according to LADOTD Standards and Specifications and reviewed by LADOTD.			
09/22 - Present	I-10 & I-12 College Dr Flyover Ramp Design- Build, Baton Rouge, LA - LADOTD Engineer Intern for design and construction quality control/quality assurance for this flyover ramp design-build project which is located at the I-10 West exit to College Dr, in advance of the I-10 & I-12 West merge. H&H serves as Design-Builder's Construction Quality Control Firm (CQCF) and oversees all Design Quality Control and Construction Quality Control activities for the project. Scope include the development and implementation of Comprehensive Quality Plan to ensure the design and construction conforms to all specified requirements. H&H will develop, maintain, and update Contractor Quality			

	Management Plan and provide qualified Inspectors, material sampling, testing, and independent testing labs to ensure contractors and off-site fabrication facilities meet project specifications.
04/22 – Present	H.001498.6; LA 24 and LA 16 Company Canal Vertical Lift Bridge, Bourge, LA - LADOTD Civil Intern 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.
12/22-08/23	SR 605 Bascule Bridge over Industrial Waterway, Harrison County, MS – MDOT Engineer Intern for the comprehensive rehabilitation of this bascule bridge over the Industrial Waterway. The 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.
06/22 – 08/23	SR 609 Movable Bascule Bridge Inspection and Load Rating, Ocean Springs, MS – MDOT Engineer Intern for inspection of SR 609 Bridge. The scope of work included the in-depth, NSTM, routine, and element level inspection of structural, mechanical, and electrical components of the bridge, as well as the roadway approaches. Load rating was performed using AASHTOWare BrDR load rating software.
03/23-06/23	I-59 / I-20 Box Girder Bridges Inspection and Load Rating, Meridian, MS – MDOT Engineer Intern for the inspection of the two box girder bridges. Bridge No. 147.9A at I-59 and Bridge No. 131.5B at I-20 are located in Lauderdale County. The inspection required night work to avoid lane closures on I-20 and I-59, as well as traffic control for lane closures and use of a confined space rescue team for inspection of inside the boxes. The repair recommendations will be made based on the inspection results and the load rating.
03/24 - Present	H.009730.5 LADOTD Movable Bridge Manual, New Orleans, LA - LADOTD Structural Designer responsible for the development of the LADOTD Movable Bridge Inspection Manual (including details, photos, illustrations, and specific examples); building a lesson plan and materials for the classroom training from the inspection manual; and providing classroom and field training. The manual will include: bridge inspection principles and overview; movable bridge overview; mechanical, electrical, and structural inspection of movable bridges; operator house; and classroom and field training for electrical, mechanical, and structural).
12/23 – Present	H.015028.6 Bayou Barataria Movable Bridge Replacement (CE&I), Phase 1, LA 302, Jefferson Parish, LA - LADOTD Engineer Intern responsible for providing construction contract administration and construction engineering and inspection services for: Bayou Barataria Movable Bridge Replacement. This project consists of construction of the movable swing span bridge, operator's house, associated substructure elements, and pier protection system along the relocated LA 302 in Jefferson Parish.
9/22 – Present	H.014530: Almonaster Ave Railroad Bridge over the Industrial Canal, New Orleans, LA - Port of New Orleans Structural Intern assisting with a variety of repairs on this steel Strauss Trunnion Bascule Bridge. Major work included replacement of components of the railroad floor system stringers and floor beams that rated lower than E-60 and replacement of deteriorated lateral connection plates. The cracked concrete on the rest pier in the area of the bearings was removed and replaced with higher strength concrete. The replacement and tightening of loose or missing fasteners throughout the entire structure was also included in the repair scope. Scope included bridge design and repair plans, contract specifications, construction inspection, and construction support services.
06/22-08/24	H.002798.6 Bayou Teche Movable Bridge at Oaklawn, St. Mary Parish, LA - LADOTD Structural Intern assisting in the design, calculations, 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.

	Firm employed by	Hardesty & Hanover, LLC		
	Name	Sean Brock, EI	Years of relevant experience with this employer	2
	Title	Mechanical Engineer Intern	Years of relevant experience with other employer(s)	11
Degree(s) / Years / Specialization			B.S. / 2023 / Mechanical Engineering	
Active registration number / state / expiration date			Engineer in Training: 35473 / LA / 09/30/2027	
Year registered	2023	Discipline	Mechanical Engineering	
Contract role(s) / brief description of responsibilities			Mechanical Engineer Intern	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
07/23 - Present	H.001498.6 (CE&I); LA 24 and LA 16 Company Canal Vertical Lift Bridge, Bourg, LA - LADOTD Mechanical Engineer Intern providing mechanical engineering inspection for a newly designed 100-foot-long vertical lift bridge and operator's house. The scope of the project includes improving the safety and vehicular movements within the project corridor by realigning approximately 405 feet of LA 316 to the west to avoid conflict with the new bridge structure and approach slabs. During the construction of the new vertical lift bridge and operator house, Mr. Brock is providing mechanical engineering inspection services.			
06/23 - Present	Lapalco Bridge, Jefferson Parish, LA - Jefferson Parish DPW Mechanical Designer for the design of a six-lane bascule bridge parallel and adjacent to the existing bridge. The new bridge will carry three westbound lanes and the existing bridge will be modified to carry three eastbound lanes plus a pedestrian and bicycle path. Scope includes the design of a new three-lane double-leaf bascule bridge and approach spans that will be north of and parallel to the existing bridge, as well as design modifications to the existing bridge to reconfigure it to include three eastbound lanes plus a pedestrian and bicycle path. H&H's preliminary design work included a visual mechanical systems inspection.			
11/23 - Present	H.015028.6 Bayou Barataria Movable Bridge Replacement (CE&I), Phase 1, LA 302, Jefferson Parish, LA - LADOTD Mechanical Engineer Intern assisting in the construction contract administration and mechanical construction engineering and inspection services for the Bayou Barataria Movable Bridge Replacement. This project consists of construction of the movable swing span bridge, operator's house, associated substructure elements, and pier protection system along relocated LA 302 in Jefferson Parish.			
12/24 - Present	LA 56 Boudreaux Canal MB Replacement; H.002244.5, Terrebonne Parish, LA - LADOTD Mechanical Designer producing plans and specifications to provide notes, technical provisions and mechanical general plan. H&H will design a hydraulic system, including a hydraulic power unit, center wedge assemblies, and end roller assemblies including the roller ramps. The hydraulic system will incorporate redundant variable displacement vane pumps, be designed to accommodate 4,500 openings per year, and be relocated to a novel placement for swing bridges of this configuration to prioritize access for maintenance personnel.			
10/23 – 01/24	Bayou Portage Bascule Bridge, Pass Christian, MS - Mississippi OSARC Mechanical Inspector for in-depth mechanical inspection of this single leaf bascule bridge which included conditional assessment of the bridge's mechanical and electrical systems. Mr. Brock performed a visual inspection, clearance measurements, measurements of relative span motion under live load, pressure and flow measurements, evaluation of all mechanical components, and preparation of the inspection report.			
08/23- Present	LADOTD Movable Bridge Manual, New Orleans, LA - LADOTD Mechanical Designer responsible for assisting in development of mechanical components of LADOTD Movable Bridge Inspection Manual (including details, photos, illustrations, and specific examples); building a lesson plan and materials for the classroom training from the inspection manual; and providing classroom and field training. The manual will include: bridge inspection principles and overview; movable bridge overview; mechanical, electrical, and structural inspection of movable bridges; operator house; and classroom and field training for electrical, mechanical, and structural.			

09/22 – 04/24	Cedar Lake Bridge Inspection, Biloxi, MS - Mississippi OSARC Mechanical Inspector for in-depth mechanical inspection for the swing bridge. Mr. Brock observed bridge operations and visually evaluated cables. He performed testing of electrical service, motors, motor brakes, and span locks. He reviewed previous bridge inspection reports and prepared checklist for field evaluation of corrected and uncorrected deficiencies. Tasks included submitting a detailed report to the client that documented deficiencies and recommendations.
11/23 – 03/24	NASA Stennis Mechanical Bridge Inspection, Stennis Space Center, MS - National Aeronautics and Space Administration Mechanical Inspector for the In-Depth inspection of the mechanical components of the bridge in accordance with AASHTO, NASA Guide for Bridge Inspection, National Bridge Inspection Standards (NBIS), and the most current version of the AASHTO Manual for Bridge Evaluation and other applicable documents. Scope includes inspection of all gearing, shafts, shaft couplings, trunnion bearings, machinery brakes, and center lock assemblies. The inspection report met NASA, NBIS and MBE requirements.
06/23 – 12/24	SR605 Bridge Inspection, Gulfport, MS - MDOT Mechanical Inspector for the 2023 In-Depth, Nonredundant Steel Tension Member (NSTM), Routine, and Element Level Inspection of the SR 605 Bridge. H&H performed an examination including an examination of the bridge structural systems, the bridge mechanical and electrical systems, and an arm's length NSTMs, as requested by Mississippi DOT. The NBIS and element structural inspection consisted of a visual and hands-on examination of the approach spans, bascule and anchor spans, access platforms and ladders, operator house, and the fender system. The fracture critical inspection consisted of hands-on arm's length examination of the bascule span girders and floor beams.
07/23 – 12/23	H.009730.5 In-Depth Bridge Inspection of Complex Structures, Statewide, LA - LADOTD Bridge Mechanical Inspector performing mechanical inspection of movable structures such as steel vertical lift bridges and plate girder bascule bridges statewide under separate task orders. Inspection of a vertical lift bridge in Calcasieu Parish (West Fork) has been completed. Tasks include review of pertinent documents such as rehabilitation plans, as-built plans, shop drawings, and inspection reports.
01/24 – 05/24	Port Aransas Ferry Mechanical / Electrical Inspection, Port Aransas, TX - TxDOT Mechanical Inspector for the inspection of mechanical and electrical systems of Corpus Christi SH 361 Ferry Ramps 1 – 11. Each of the Harbor Island ferry ramp structures consists of a ferry landing with two tower structures supporting a movable span (or ramp), which lowers onto the deck of the ferry. Scope included performing a condition assessment of all electrical and mechanical systems, measurement of motor loads during operation, insulation resistance testing of the motor windings, and identifying deficiencies within the mechanical and electrical systems that require action to improve the operation and reliability of the ramp systems. Mr. Brock created reports for the inspection process and element level assessment of the current conditions of the mechanical and electrical systems of the ramps including recommendations for repair, rehabilitations, and improvements.
09/23 – 02/24	Popp's Ferry Bascule Bridge, Biloxi, MS - Mississippi OSARC Mechanical Inspector for the in-depth inspection of the Popp's Ferry double leaf bascule bridge which included condition assessment of all electrical and mechanical systems. Inspections included measurement of the motor loads during bridge operation, determination of the insulation resistance of the submarine cable conductors, measurements of the mechanical/hydraulic systems, identification of deficiencies in the bridge's operation systems, and preparation of the inspection report.
08/10 – 12/13	Trident Maritime Systems, New Orleans, LA - US Joiner, LLC Welder/Joiner First Class responsible for analyzing blueprint schematics to weld and fabricate Navy and marine vessel spaces to specification. Mr. Brock was responsible for meeting delivery deadlines and Quality Assurance inspections of large-scale marine projects.

	Firm employed by	Hardesty & Hanover, LLC		
	Name	Kenneth Pecquet, PE	Years of relevant experience with this employer	7
	Title	Electrical Engineer	Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization			B.S. / 2012 / Electrical Engineer	
Active registration number / state / expiration date			Professional Engineer: 47471 / LA / 09/30/2027	
Year registered	2023	Discipline	Electrical Engineering	
Contract role(s) / brief description of responsibilities			Electrical Engineer	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
02/23 - Present	H.015028.6 Bayou Barataria Movable Bridge Replacement (CE&I), Phase 1, LA 302, Jefferson Parish, LA - LADOTD Electrical Construction Engineer assisting in the construction contract administration and electrical construction engineering and inspection services for the Bayou Barataria Movable Bridge Replacement. This project consists of construction of the movable swing span bridge, operator's house, associated substructure elements, and pier protection system along relocated LA 302 in Jefferson Parish.			
08/22 - Present	H.001498.6 (CE&I); LA 24 and LA 16 Company Canal Vertical Lift Bridge, Bourg, LA - LADOTD Electrical Construction 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; and construction close-out.			
11/18 – 08/21	Lake Pontchartrain Causeway Safety Bay Improvements (CE&I), Metairie, LA - Greater New Orleans Expressway Commission Electrical Engineering Construction Inspector responsible for providing construction engineering and inspection services required during the Safety Bay improvement project. Mr. Pecquet's responsibilities included conducting construction engineering and inspection services required during the safety bay improvement project for inspection of all safety bays power, lighting, communication, CCTV, and traffic signal systems. Responsibilities included field inspections, documentation, preparation of daily reports, participation in construction progress meetings, and construction closeout.			
12/24 - Present	IDIQ Contract for Movable Bridge Preservation Task US 165 Red River MB Ped Gates (Jackson St.), Rapids Parish, LA – LADOTD Electrical Engineer developing plan sheets, creating electrical general plan in accordance with LADOTD policies and standards, adding new operable pedestrian gates for pedestrian walkway on the fixed spans beyond both ends of the lift span.			
08/23 - Present	H.009730.5 LADOTD Movable Bridge Manual, New Orleans, LA - LADOTD Electrical Engineer responsible for the development of the electrical components of the LADOTD Movable Bridge Inspection Manual (including details, photos, illustrations, and specific examples); building a lesson plan and materials for the classroom training from the inspection manual; and providing classroom and field training. The manual will include: bridge inspection principles and overview; movable bridge overview; mechanical, electrical, and structural inspection of movable bridges; operator house; and classroom and field training for electrical, mechanical, and structural).			
12/19 – 08/24	Bayou Teche Movable Bridge at Oaklawn, Franklin, LA - LADOTD Electrical Engineer providing the electrical design for the movable bridge as well as the bridge parking and walkway lighting. The lighting design includes photometric analysis in accordance with IES standards, selection of luminaires and electrical equipment, and complete change order plan sheets detailing the placement of lights, connections to the existing electrical system, and item lists. H&H performed a field survey and review of bridge plans to complete an arc flash hazard analysis of the bridge electrical system using industry standard analysis software.			

04/19 – Present	Jupiter Federal Bascule Bridge Replacement, Jupiter, FL – FDOT Movable Bridge Electrical Engineer Intern contributing to the design of this bascule bridge replacement project. The SWAT process of overlapping the design phase with the PD&E phase requires that the preliminary design phase includes coordination and support of the NEPA process in developing the Type 2 Categorical Exclusion documentation. H&H will serve as Engineer of Record for the project which addresses the structural and functional deficiencies of the existing US-1 / SR-5 Jupiter Federal Bridge from CR-A1A (Ocean Boulevard) to Beach Road. Work includes the development of vertical and horizontal alignment for bridge replacement alternatives and the study of the resulting impacts. The design incorporates intersection improvements and improves traffic functions at both ends of the approximately 2,960-foot long (0.56 mile) project corridor into the bridge replacement design. The project will include ADA access ramps to the 8-foot sidewalks and a new 7-foot buffered bike lane for additional safety.
01/20 – Present	Almonaster Avenue Railroad Bridge over the Industrial Canal Rehabilitation, New Orleans, LA – Port of New Orleans Movable Bridge Electrical 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's electrical system. 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.
12/19 – 01/21	Bayou Teche Swing Bridge at Oaklawn (H.002798.6), St. Mary Parish, Louisiana - LADOTD Movable Bridge Electrical Engineer Intern responsible for providing post-design electrical design calculations and plan revisions for the bridge power distribution and relay-based control system for this movable bridge. Built in 1941, the original historically significant bridge was replaced with a new hydraulically operated swing bridge. H&H provided the electrical design for the bridge in line with LADOTD's design requirements and standard design details and coordinated closely with the other design disciplines to ensure success. All design deliverables adhered to the schedule. Due to permitting issues, design was placed on hold for several years extending the schedule.
08/19 - Present	Lapalco Boulevard Movable Bridge over Harvey Canal, Westwego, LA - Jefferson Parish DPW Electrical Engineer contributing to the pre-design electrical inspection and resulting Bridge Design Report (BDR) for the rehabilitation and widening of the existing four-lane Lapalco Boulevard project includes rehabilitation to the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lanes as well as the design of a new three-lane double bascule movable bridge crossing of Harvey Canal 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 and development of a Traffic Control Plan was also included. Project is being designed to LADOTD standards and specifications.
07/23 – 12/23	H.009730.5 In-Depth Bridge Inspection of Complex Structures, Statewide, LA - LADOTD Electrical Engineer for Calcasieu River Vertical Lift Bridge at West Fork. The electrical system routine inspection included inspecting accessible components of the main bridge power distribution, bridge grounding system, motor controls, control systems (panel and consoles), electrical systems for the traffic control lighting system, traffic gate assemblies, traffic resistance barriers, span lock motors, span drive braking system, span drive motors, limit switches and related conduit and wiring.
10/19 – 12/20	SR 609 Movable Bascule Bridge over Old Fort Bayou Rehabilitation, Ocean Springs, MS - MDOT Movable Bridge Electrical Engineer Intern contributing to the electrical design services 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.

	Firm employed by	Hardesty & Hanover, LLC		
	Name	Christopher Aubert, EI	Years of relevant experience with this employer	3
	Title	Electrical Engineer Intern	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization			B.S. / 2022 / Electrical Engineering	
Active registration number / state / expiration date			Engineer in Training: 35397 / LA / 09/30/2027	
Year registered	2023	Discipline	Electrical Engineering	
Contract role(s) / brief description of responsibilities			Electrical Engineer Intern	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
07/23 – 12/23	H.009730.5 In-Depth Bridge Inspection of Complex Structures, Statewide, LA - LADOTD Electrical Inspector for Calcasieu River Vertical Lift Bridge at West Fork. The electrical system routine inspection included inspecting accessible components of the main bridge power distribution, bridge grounding system, motor controls, control systems (panel and consoles), electrical systems for the traffic control lighting system, traffic gate assemblies, traffic resistance barriers, span lock motors, span drive braking system, span drive motors, limit switches and related conduit and wiring.			
08/22 - Present	Almonaster Avenue Railroad Bridge over the Industrial Canal, New Orleans, LA - Port of New Orleans Electrical Inspector for the rehabilitation and partial replacement of the Almonaster Avenue Bridge, a movable Strauss-heel trunnion bridge. H&H's assessment revealed that improvements to the electrical and mechanical systems, superstructure, and counterweight were required to return this bridge to its full operating capability. 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.			
08/23 - Present	H.009730.5 LADOTD Movable Bridge Manual, New Orleans, LA - LADOTD Electrical Designer assisting in the development of electrical components of LADOTD Movable Bridge Inspection Manual (including details, photos, illustrations, and specific examples); building a lesson plan and materials for the classroom training from the inspection manual; and providing classroom and field training. The manual will include: bridge inspection principles and overview; movable bridge overview; mechanical, electrical, and structural inspection of movable bridges; operator house; and classroom and field training for electrical, mechanical, and structural).			
08/22 – 08/24	H.002798.6 Bayou Teche Movable Bridge at Oaklawn, St. Mary Parish, LA - LADOTD Electrical Designer contributing to the design, calculations, plan preparation, and inspection services for 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 in the design phase.			
08/22 - Present	SR-605 Movable Bascule Bridge over Industrial Waterway, Harrison County, MS - MDOT Electrical Inspector contributing to the electrical inspection and design for the full rehabilitation of SR-605 bascule bridge as a task-order to the IDIQ Master Bridge Contract which includes engineering assessment, mechanical, electrical, and structural design in addition to the preparation of Traffic Control Plans. All designs will be completed in accordance with AASHTO, FHWA, and MDOT guidelines and specifications.			
08/22 – 08/23	SR 609 Movable Bascule Bridge Rehabilitation, Ocean Springs, MS – MDOT Electrical Inspector contributing to the electrical inspection and design 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. 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.			

09/22 – 03/23	NASA Stennis Bridge Inspection, Kiln, MS - National Aeronautics and Space Administration (NASA) Electrical Inspector provided electrical engineering inspection for the SR 607 Trent Lott Boulevard Bridge over the Navigable Waterway located at the NASA John C. Stennis Space Center. The scope of the project was a routine mechanical and electrical inspection of a bascule bridge and an inspection report. During the inspection of the bascule bridge and operator house, Chris provided electrical inspection services.
01/24 – 05/24	Port Aransas Ferry Mechanical / Electrical Inspection, Port Aransas, TX – TxDOT Electrical Inspector for inspection of mechanical and electrical systems of Corpus Christi SH 361 Ferry Ramps 1-11. Each of the Harbor Island ferry ramp structures consists of a ferry landing with two tower structures supporting a movable span (or ramp), which lowers onto the deck of the ferry. The scope included performing a condition assessment of all electrical and mechanical systems, measurement of motor loads during operation, insulation resistance testing of the motor windings, and identifying deficiencies within the mechanical and electrical systems that require action to improve the operation and reliability of the ramp systems. H&H created reports for the inspection process and element level assessment of the current conditions of the mechanical and electrical systems of the ramps including recommendations for repair, rehabilitations, and improvements.
10/23 – 01/24	Bayou Portage Bascule Bridge, Pass Christian, MS - Mississippi OSARC Electrical Inspector for in-depth electrical inspection of this single-leaf bascule bridge which included conditional assessment of the bridge's mechanical and electrical systems. He performed testing of motors, motor brakes, and span locks. He assisted in evaluating all electrical components and prepared the inspection report.
09/23 – 02/24	Popp's Ferry Bascule Bridge, Biloxi, MS - Mississippi OSARC Electrical Inspector for the in-depth inspection of this double-leaf bascule bridge which included condition assessment of all electrical and mechanical systems. Inspections included measurement of the motor loads during bridge operation, determination of the insulation resistance of the submarine cable conductors, identification of deficiencies in the bridge's operation systems, and preparation of the inspection report.
08/22 - Present	H.001498.6 LA 24 and LA 16 Company Canal Vertical Lift Bridge Replacement (CE&I), Bourge, LA - LADOTD Electrical Inspector providing electrical engineering inspection during the construction of a newly designed 100-ft-long vertical lift bridge and operator's house. The scope of the project includes improving the safety and vehicular movements within the project corridor by realigning approximately 405 ft of LA 316 to the west to avoid conflict with the new bridge structure and approach slabs.
10/23 - Present	Lapalco Boulevard Bridge, Harvey, LA - Jefferson Parish Department of Engineering Electrical Designer for the design of a six-lane bascule bridge parallel and adjacent to the existing bridge. The new bridge will carry three westbound lanes and the existing bridge will be modified to carry three eastbound lanes plus a pedestrian and bicycle path. Project scope includes the design of a new three-lane double-leaf bascule bridge and approach spans that will be north of and parallel to the existing bridge, as well as design modifications to the existing bridge to reconfigure it to include three eastbound lanes plus a pedestrian and bicycle path. H&H's preliminary design work included a visual structural inspection of the fracture critical elements, primary and secondary structural members, as well as electrical and mechanical systems inspections.
02/23 - Present	H.015028.6 Bayou Barataria Movable Bridge Replacement (CE&I), Phase 1, LA 302, Jefferson Parish, LA - LADOTD Electrical Inspector assisting in the construction contract administration and electrical construction engineering and inspection services for the Bayou Barataria Movable Bridge Replacement. This project consists of construction of the movable swing span bridge, operator's house, associated substructure elements, and pier protection system along relocated LA 302 in Jefferson Parish.
12/24 - Present	IDIQ Contract for Movable Bridge Preservation Task US 165 Red River MB Ped Gates (Jackson St.), Rapids Parish, LA – LADOTD Electrical Designer assisting in the development of plan sheets, creating electrical general plan in accordance with LADOTD policies and standards, adding new operable pedestrian gates for pedestrian walkway on the fixed spans beyond both ends of the lift span.

	Firm employed by		Hardesty & Hanover, LLC		
	Name		J. Webb Jones, PE	Years of relevant experience with this employer	14
	Title		Senior Highway Engineer	Years of relevant experience with other employer(s)	16
Degree(s) / Years / Specialization			B.S. / 2001 / Civil Engineering		
Active registration number / state / expiration date			Professional Engineer: 56950 / Florida / 2/28/2027		
Year registered	2001	Discipline	Civil Engineering		
Contract role(s) / brief description of responsibilities			Roadway Design Engineer		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
07/16 – 9/21	SR A1A North Bridge Replacement, Fort Pierce, FL – Florida DOT Senior Roadway Engineer for the planning and design of a new high-level fixed bridge carrying SR A1A and the East Coast Greenway over the Intracoastal Waterway, FEC Railroad, and Old Dixie Highway. Scope included staged construction to maintain traffic, elimination of at-grade rail crossing, design of new roadway alignments and access roads, and integration of an observation deck. H&H coordinated extensively with utilities, FEC Railroad, adjacent businesses, and permitting agencies. The project also included geotechnical, drainage, hydrogeology, lighting, signals, signage, and maintenance of traffic for both vehicular and marine users.				
07/17 – 06/20	Orlando South Ultimate Interchange, Orange County, FL - Florida's Turnpike Enterprise Deputy Project Manager responsible for concept development of alternatives. This project includes an evaluation of a complex interchange that provides both direct and indirect ramping between Orange Blossom Trail and the adjacent two limited access highways. The project goals included: construction of direct connection ramps between freeways, an ultimate 10-lane typical section of the turnpike, implementation of AET, consideration of express direct connections, and improvement of surface street operations with two new reliever interchanges. The recommended configuration included improvements to the systems interchange, modification to two adjoining interchanges, and new proposed service interchanges.				
01/16 – 12/17	I-75 (SR 93A) SB Off-Ramp form S of Bypass Canal to EB/WB I-4, Hillsborough County, FL – Florida DOT Project Manager/Engineer of Record responsible for project coordination and oversight. This two-mi. roadway improvement project included the addition of a new auxiliary lane for southbound I-75 from south of the Bypass Canal to the southbound off-ramp and widening the I-75 southbound off-ramp from one to two lanes. A unique aspect of the design approach was the incorporation of this design into a long-term buildout of the interchange. This project was expedited for construction based on no right of way acquisition or impacts to Florida Gas Transmission lines.				
01/16 – 10/17	SR 826/Sunny Isle Twin Bridge Improvements, Sunny Isle, FL – Florida DOT Roadway Design Lead/Signing and Pavement Marking Engineer of Record responsible for signing and pavement marking and roadway design, as well as temporary traffic control (TTC) plans. The project included a vibration study of the bridge control house; design recommendations for improvements, public involvement, permitting, TTC plans, roadway, drainage, signing and pavement markings analysis and plans, and construction cost estimates. Both four-lane bridges have 16 spans with pre-stressed AASHTO concrete and steel beams and a double-leaf trunnion bascule span.				
01/21 – 02/25	SR 826/Palmetto Expressway Capacity Improvement Design-Build, Miami-Dade County, FL – Florida DOT Senior Roadway Engineer responsible for QC on this project. This project improves operations with an additional SB General purpose lane, auxiliary lanes, and improved shoulder widths, requiring major modifications to the NW 103rd St interchange. The project also includes revised access to the NB and SB express lanes, requiring a new toll site and improvements to the adjoining frontage road system. H&H is the lead designer, responsible for roadway, drainage, permitting, traffic control, tolling, and bridge design.				

01/16 – 12/23	Sand Lake Rd Interchange, Orange County, FL - Florida's Turnpike Enterprise Senior Roadway Engineer responsible for the temporary Traffic Control Plans design for the construction of a new interchange located on the Florida's Turnpike and Sand Lake Rd (SR 482) in Orange County, Florida. As part of an innovative design, ramp construction will take place early to allow mainline traffic to be diverted during off peak hours while bridge reconstruction over the Turnpike is ongoing. This project also includes coordination with FDOT District 5 and the reconstruction of Sand Lake Rd.
11/16 – 02/19	Gateway Express Improvements, Pinellas County, FL – Florida DOT Project Engineer responsible for technical oversight of temporary Traffic Control Plans. This project will deliver limited and controlled access connections from the Bayside Bridge on the north, US 19 on the west, and the St. Pete Clearwater International Airport to I-275 general purpose and new express lanes. H&H's scope on this design-build project includes contributing to FDOT's Alternative Technical Concepts (ATC) process; developing temporary traffic control plans design for Segments 2 and 4; project tolls design (four sites) for Segments 1, 2 and 4; and structures design for four bridges in Segment 4.
03/13 – 10/14	Central Polk Pkwy (Segment 1) from Polk Pkwy SR540 to SR 35 (US 17), Polk County, FL – Florida DOT Engineer of Record/Senior Engineer responsible for roadway design and plans production. This project required the use of Corridor Modeler software to aid in the design of a new six-lane expressway facility. The project included the design of a one-mi. new alignment, over two mi. of widening, and a new interchange at SR 540 including over two mi. of new ramp alignments. This segment was among several that were under design to complete the northeasterly connection of Central Polk Pkwy to I-4.
01/14 – 12/15	Gandy Blvd Bridge Approaches, Pinellas Count, FL – Florida DOT Senior Engineer responsible for QA/QC for the Traffic Control Plans for the construction of a 2.5-mi.-long segment of improved grade-separated lanes to increase capacity on the Gandy Bridge approach using design-build delivery. The project is 2.5 mi. long, includes three grade separations, and is being delivered substantially under budget with design-build delivery.
07/13 – 02/14	Turnpike Mainline (SR 91) Interchange at I-4 Design-Build, Orange County, FL – Florida's Turnpike Enterprise Project Engineer responsible for the design and preparation of traffic control and roadway plans. The project included operational improvements, including mainline auxiliary lanes and ramp lane additions. A unique feature of the proposed design was a new ramp structure, replacing the need for widening, to avoid FGT impacts.
04/17 – 03/20	SR 75 (US 231) from SR 30A (US 98) to Pipeline Road, Panama City, FL – Florida DOT Senior Roadway Engineer responsible for preparation of roadway and temporary Traffic Control Plans. The project consists of providing design services for the single point urban interchange (SPUI) at SR 77 over US 231 and CSX RR improvement project. The work includes roadway and drainage design of the intersection, lighting design for the entire project, and design for new 840-ft. steel bridge.
01/16 – 05/20	Districtwide Interstate Program Manager (IPM) – Florida DOT Senior Engineer responsible for concept development and review of plans. This multi-discipline, indefinite quantity contract provided as-needed services to support the Florida DOT work program for all interstate highway improvements in the five-county FDOT District region. The geographic limits include over 150 mi. of I-275, I-4, and I-75 and key contributing arterials.
07/12 – 02/15	SR 212 (Beach Boulevard) Landscaping from St. Johns Bluff Road to San Pablo Road, Duval County, FL – Florida DOT Engineer of Record/Senior Engineer responsible for design and production of traffic control plans. The project involved roadway design for over 5.6 miles, including landscaping and irrigation improvements for proposed bold landscaping within existing medians on Beach Boulevard, from St. Johns Bluff Road to San Pablo Road in Jacksonville.
07/23 – Present	SR 535 Interchange Improvements at I-4 & WB Express Lane Extension from west of SR 536 to west of Daryl Carter Parkway Design-Build, Orange County, FL – Florida DOT Chief Engineer responsible for temporary traffic control design and plans preparation. The interchange improvements will partially reconstruct I-4 and SR 535 (Apopka-Vineland Road) to enhance safety and improve access to and from westbound I-4. The extension project will add a single, buffer-separated, westbound managed lane to I-4 from west of SR 536 to west of Daryl Carter Parkway.

	Firm employed by		Hardesty & Hanover, LLC		
	Name		Benjamin Bower, PE	Years of relevant experience with this employer	8
	Title		Roadway Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization				B.S. / 2017 / Civil Engineering	
Active registration number / state / expiration date				Professional Engineer: 92137 / Florida / 02/28/2027	
Year registered	2021	Discipline		Civil Engineering	
Contract role(s) / brief description of responsibilities				Roadway Design Engineer	
Experience dates (mm/yy–mm/yy)		Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
07/19 – 9/21		SR A1A North Bridge Replacement, Fort Pierce, FL – Florida DOT Roadway Engineer for the planning and design of a new high-level fixed bridge carrying SR A1A and the East Coast Greenway over the Intracoastal Waterway, FEC Railroad, and Old Dixie Highway. Scope included staged construction to maintain traffic, elimination of at-grade rail crossing, design of new roadway alignments and access roads, and integration of an observation deck. H&H coordinated extensively with utilities, FEC Railroad, adjacent businesses, and permitting agencies. The project also included geotechnical, drainage, hydrogeology, lighting, signals, signage, and maintenance of traffic for both vehicular and marine users.			
01/21 – 02/25		SR 826/Palmetto Expressway Capacity Improvement Design-Build, Miami-Dade County, FL – Florida DOT Roadway Engineer assisting with roadway and temporary traffic control services. This project improves operations with an additional SB General purpose lane, auxiliary lanes, and improved shoulder widths, requiring major modifications to the NW 103rd St interchange. The project also includes revised access to the NB and SB revises express lanes, requiring a new toll site and improvements to the adjoining frontage road system. H&H is the lead designer, responsible for roadway, drainage, permitting, traffic control, tolling, and bridge design.			
07/17 – 06/20		Orlando South Ultimate Interchange at SR 91 (Florida’s Turnpike) and SR 528 (Beachline Express) PD&E Study – Florida’s Turnpike Enterprise Roadway Designer responsible for assisting with concept development. H&H was prime consultant for the PD&E study for this complex systems interchange with imbedded service movements. Project goals included: construction of direct connection ramps between freeways, a planned ultimate 10-lane express typical section of the Turnpike, implementation of All Electronic Tolling, consideration of express direct connections, and modification of service movements to reduce interchange weaving. Constraints included a developed environment, adjacent major utilities, nearby interchanges, and the need to maintain traffic and tolling operations during construction. On a schematic basis, approximately 249 configurations were analyzed. The recommended configuration includes new direct systems ramps, braided ramps, and a Collector Distributor Roadway, as well as two new reliever interchanges on the Turnpike and Beachline Expressway. Modification to two adjoining interchanges, including reconfiguration of Consulate Drive as a Diverging Diamond Interchange.			
06/17 – 12/17		I-75/SR 93A SB Off-Ramp S of Bypass Canal to EB/WB I-4, Tampa, FL – Florida DOT Roadway Designer responsible for assisting with design and plans preparation. This two-mi. roadway improvement project included the addition of a new auxiliary lane for southbound I-75 from south of the Bypass Canal to the southbound off-ramp and widening the I-75 southbound off-ramp from one to two lanes. A unique aspect of the design approach was the incorporation of this design into a long-term buildout of the interchange. This project was expedited for construction based on no right of way acquisition or impacts to Florida Gas Transmission lines.			
06/17 – 12/23		Sand Lake Rd Interchange, Orange County, FL - Florida’s Turnpike Enterprise Roadway Engineer assisting with the temporary Traffic Control Plans design for the construction of a new interchange located on the Florida’s Turnpike and Sand Lake Rd (SR 482) in Orange County, Florida. As part of an innovative design, ramp construction will take place early to allow mainline traffic to be diverted during off peak hours while bridge reconstruction over the Turnpike is ongoing. This project also includes coordination with FDOT District 5 and the reconstruction of Sand Lake Road.			

06/17 – 06/23	SR 75 (US 231) from SR 30A (US 98) to Pipeline Rd, Panama City, FL – Florida DOT Roadway Engineer assisting with plans production for roadway, temporary traffic control and S&PM on SR 77. He provided design services for the single point urban interchange (SPUI) at SR 77 over US 231 and CSX RR improvement project. Work included roadway, drainage, temporary traffic control, and S&PM design on SR 77. In addition, H&H designed the lighting for the entire project and designed a new 840-ft. steel bridge on SR 77.
06/21 – Present	Design of SR91 and SR528 Interchange MP 253 to S. of Sand Lake Rd (MP 257.25) – Florida's Turnpike Enterprise Roadway Engineer assisting with roadway analysis and plans development. The project includes new direct systems ramps, braided ramps, a relocation of SR 528, and modifications to adjoining interchanges, including a Diverging Diamond interchange on the first level. The design team worked closely with Turnpike traffic engineers to refine the design to include: an additional southbound Collector Distributor Road to relocate weaving from the mainline; reconfiguration of a low-volume ramp to economize the design; and development of a three-project phasing plan to deliver incremental improvements as needed with packaging less than \$200 million. In addition to managing the design of the project, H&H is responsible for roadway, bridge, drainage signing and pavement markings, and toll design, which includes six new All Electronic Tolling Sites.
05/21 – Present	46th Ave N Sidewalk Design, Pinellas County, FL – Pinellas County Roadway Engineer responsible for assisting with roadway design and plans preparation. This project consists of reconstruction of the existing roadway, extension of the existing box culvert in both directions, construction of ADA compliant sidewalks, curb ramps, and driveways on both sides of road and incidental work along 46th Ave North, from West of Drainage Outfall along 55th St North right of way corridor to 49th St North (a length of approximately 0.5 mi.). H&H is responsible for roadway/sidewalk design, structural design, traffic control, signing, and pavement marking.
06/17 – 02/17	SR 968/SW 1st St Bridge at Miami River, Miami, FL – Florida DOT Roadway Designer responsible for assisting with roadway approaches and temporary traffic control design. SR 968 is an Urban Minor Arterial. This bridge replacement project is along the SW 1st St corridor from SW 6th Ave to SW 2nd Ave. The existing four-lane, one-way bridge was replaced with a new three-lane, one-way bridge, and included roadway improvements east and west of the bridge, bike lanes, sidewalks, and signing and pavement markings. The roadway east and west of the bridge was reconstructed to provide an urban roadway section with a revised profile using new curb, three through lanes, an eight-ft. parking lane along both sides, and variable width sidewalks against the back of curb on both sides of the road. This project was located in constrained right of way conditions where there could not be impacts to adjacent properties.
06/17 – 02/19	Gateway Expressway Improvements Design-Build, Pinellas County, FL – FDOT Roadway Designer responsible for assisting in the development of the preliminary design to this improvement project. For this design-build project, H&H is developing TCPs for Segments 2 and 4; TCP coordination among Segments 1 through 4; tolls design for Segments 1, 2, and 4; and structure design for four bridges in Segment 4.
06/17 – 06/21	Homestead Extension of Florida's Turnpike (SR 821) from S of Killian Pkwy to N of Sunset Dr Design-Build, Miami, FL - FL Turnpike Enterprise Roadway Designer assisting with plans production for roadway and S&PM of the surface streets and overall project temporary traffic control. This design-build procurement comprises widening of the mainline HEFT (SR 821) from south of Killian Pkwy to just north of Sunset Dr. Primary services included development of express lanes, relocation of ramp tolling, and operational improvements to the Kendall Dr interchange as well as resurfacing and other minor improvements.

	Firm employed by		Hardesty & Hanover, LLC	
	Name		Will Farber, EI	Years of relevant experience with this employer
	Title		Civil Designer / Engineering Intern	Years of relevant experience with other employer(s)
Degree(s) / Years / Specialization			BS / 2018 / Civil Engineering	
Active registration number / state / expiration date			Engineer in Training: 33903 / LA / 03/31/2027	
Year registered	2018	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Roadway Designer	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
09/24 – Present	H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Roadway Designer for the bridge assessment, complete rehabilitative engineering design, and road design services required for the partial replacement of the Almonaster Ave Bridge and a new connector road. The Almonaster Ave Bridge crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. 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 the connecting roads were required to return this bridge to its full operating capability. The road design services included a new alignment for the connecting road including all drainage structures. H&H also developed a hydraulic study and a site plan that included several retention ponds for drainage improvements. Other services included environmental, geotechnical, and pavement design.			
10/24 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Roadway Designer for the design of a new three-lane double bascule movable bridge crossing of Harvey Canal and the widening of the existing four-lane Lapalco Blvd to provide a facility carrying three lanes of traffic in each direction. The new bridge is constructed as an independent structure adjacent and north of the existing bridge with a new operator house. The project includes rehabilitation of the existing four-lane bridge with three lanes of traffic and a new pedestrian/bike lane. In addition to design of the new bridge, all roadway approaches and intersections in the vicinity of the bridge (eastbound and westbound) will be redesigned to accommodate the new structure. Scope includes development of a Traffic Control Plan.			
11/24 – Present	SR 33 Bridge Replacements, Franklin County, MS – Mississippi DOT Roadway Designer for the Phase A Final Right-of-Way Plans for roadway design and roadway hydraulic design for four bridge replacements along SR 33 (Bridge Nos. 31.9, 34.6, 34.9, and 35.3). The project scope includes roadway realignment, roadway hydraulic design, preliminary right-of-way design, and final right-of-way design. H&H is providing the realignment of the roadway to run parallel to the existing and redesigning of one intersection at the end of the project. A hydraulic study and report is to be completed to resize the existing pipes, if necessary, and to verify sizing for a reinforced box culvert. A set of preliminary right-of-way plans are to be created following MDOT's guidelines and using the approved alignment from MDOT. Final right-of-way plans will be delivered after hydraulic design and roadway design have been finalized and a plan set has been created.			
09/24 – Present	H.009730.5 SNBI Data Collection, Statewide, LA – LADOTD Roadway Designer for retrieving, verifying, and entering the Specifications for the Nation Bridge Inventory (SNBI) data into InspectX for the bridges statewide for LaDOTD. Tasks include review of pertinent documents such as rehabilitation plans, as-built plans, shop drawings, and inspection reports. These documents will be obtained from various LADOTD offices including General Files, Bridge Design Section, Bridge Maintenance Section, and District offices. Necessary information will be collected from the site when such information is unavailable from the plans.			

11/18 – 10/20	Dynamic Roadway Evaluation of Various Bridges & Freeways, Statewide Delaware & San Francisco, CA –DelDOT & Caltrans Civil Designer for this roadway evaluation project. The project consisted of using Soundar to evaluate roadways while in motion. The Soundar is a mobile ultra-seismic sounding device that consists of 12 hammers and a microphone used to collect sounding data as it is pulled behind a truck traveling at about 10 mph. Will operated the Soundar machine, made repairs as necessary, and analyzed the results. Will worked on several parts of Delaware's interstate system as well as a few bridges in the San Francisco Bay area.
06/20 – 07/20	Nondestructive Evaluation of Brazos Dam, Possum Kingdom, TX – Brazos River Authority Civil Designer for the nondestructive evaluation of the Brazos Dam. Will was responsible for taking concrete and rebar core samples of the base of the dam.

	Firm employed by		Hardesty & Hanover, LLC		
	Name		Matthew Wolczynski, PE	Years of relevant experience with this employer	7
	Title		Senior Roadway Engineer	Years of relevant experience with other employer(s)	15
Degree(s) / Years / Specialization				BS / 2003 / Civil Engineering	
Active registration number / state / expiration date				Professional Engineer: 67768 / FL / 02/28/2027	
Year registered		2003	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities				Roadway Design Engineer	
Experience dates (mm/yy–mm/yy)		Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
01/21 – 02/25		SR 826/Palmetto Expressway Capacity Improvement Design-Build, Miami-Dade County, FL – Florida DOT Senior Roadway Engineer assisting with roadway, traffic control, tolling, and S&PM design services. This project improves operations with an additional SB General purpose lane, auxiliary lanes, and improved shoulder widths, requiring major modifications to the NW 103rd St interchange. The project also includes revised access to the NB and SB revises express lanes, requiring a new toll site and improvements to the adjoining frontage road system. H&H is the lead designer, responsible for roadway, drainage, permitting, traffic control, tolling, and bridge design.			
07/16 – 9/21		SR A1A North Bridge Replacement, Fort Pierce, FL – Florida DOT Senior Roadway Engineer for the planning and design of a new high-level fixed bridge carrying SR A1A and the East Coast Greenway over the Intracoastal Waterway, FEC Railroad, and Old Dixie Highway. Scope included staged construction to maintain traffic, elimination of at-grade rail crossing, design of new roadway alignments and access roads, and integration of an observation deck. H&H coordinated extensively with utilities, FEC Railroad, adjacent businesses, and permitting agencies. The project also included geotechnical, drainage, hydrogeology, lighting, signals, signage, and maintenance of traffic for both vehicular and marine users.			
04/18 – 06/20		Orlando South Ultimate Interchange Improvements – Florida’s Turnpike Enterprise Senior Roadway Engineer responsible for concept development, coordination, and project oversight of a complex interchange, including system and service movements. The project includes an evaluation of a complex interchange that provides both direct and indirect ramping between Orange Blossom Trail and the adjacent two limited access highways. The project goals included: construction of direct connection ramps between freeways, an ultimate 10-lane typical section of the turnpike, implementation of AET, consideration of express direct connections, and improvement of surface street operations with two new reliever interchanges. The recommended configuration included improvements to systems interchange, modification to two adjoining interchanges, and new proposed service interchange.			
04/18 – 11/20		I-75 (SR 93A) SB Off-Ramp S of Bypass Canal to EB/WB I-4, Hillsborough County, FL – Florida DOT Senior Roadway Engineer responsible for quality control of the roadway and TCP design. This two-mile roadway improvement project included the addition of a new auxiliary lane for southbound I-75 from south of the Bypass Canal to the southbound off-ramp and widening the I-75 southbound off-ramp from one to two lanes. A unique aspect of the design approach was the incorporation of this design into a long-term buildout of the interchange. This project was expedited for construction based on no right-of-way acquisition or impacts to Florida Gas Transmission lines.			
04/18 – 02/19		Gateway Expressway Design-Build, Pinellas County, FL – Florida DOT Senior Engineer responsible for quality control of the traffic control design. This project delivered limited and controlled access connections from the Bayside Bridge on the north, US 19 on the west, and the St. Pete Clearwater International Airport to I-275 general purpose and new express lanes. H&H’s scope on this design build project included developing temporary traffic control (TTC) plans design for Segments 2 and 4; project tolls design (four sites) for Segments 1, 2 and 4; and structures design for four bridges in Segment 4.			

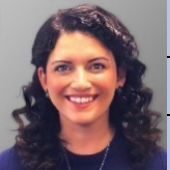
04/18 – 03/20	SR 75 (US 231) from SR 30A (US 98) to Pipeline Road, Panama City, FL – Florida DOT Senior Roadway Engineer responsible for the quality control of the roadway and TCP design on SR 77. The project consisted of providing design services for the single point urban interchange (SPUI) at SR 77 over US 231 and CSX RR improvement project. Work included roadway, drainage, temporary traffic control, and S&PM design on SR 77. In addition, H&H designed the lighting for the entire project and designed a new 840-ft.- long steel bridge on SR 77.
06/20 – Present	Design of the SR 91 and SR 528 Interchange (from MP 253 TO S. of Sand Lake Road (MP 257.25), Orange County, FL – Florida's Turnpike Senior Roadway Engineer responsible for the roadway and TCP design of this complex interchange. H&H is the prime consultant for this complex 4-level interchange in an urban constrained environment. The project includes new direct systems ramps, braided ramps, a relocation of SR 528, and modifications to adjoining interchanges, including a Diverging Diamond interchange on Consulate Drive. As part of the design development, the design team worked closely with Turnpike traffic engineers to refine the design to include: an additional southbound Collector Distributor Road to relocate weaving from the mainline; reconfiguration of a low-volume ramp to economize the design; and development of a 3-project phasing plan to deliver incremental improvements as needed in packages less than \$200 million. In addition to managing the design of the project, H&H is responsible for roadway, bridge, drainage signing and pavement markings, and toll design, which included six new All Electronic Tolling Sites.
02/21 – 01/23	Riverside Drive Drainage Improvements and North Springs Drive Study, Pinellas County, FL – Pinellas County Senior Roadway Engineer responsible for quality control of the roadway, drainage, and TCP designs. This project provided construction plans for drainage improvements to Riverside Drive west of the Beckett Bridge due to frequent flooding, and for conducting a drainage study east of the bridge from Venetian Court to W. Tarpon Avenue experiencing flooding which affect road durability.
12/18 – 05/23	Beckett Bridge Replacement, Tarpon Springs, FL – Pinellas County Senior Roadway Engineer responsible for quality control of the roadway, drainage, and TCP designs. The project involves the historic bridge replacement with a new 360-ft.-long single-leaf, rolling-lift, bascule bridge that carries Riverside Drive over Whitcomb Bayou and features two traffic lanes, shoulders, and a sidewalk. Project elements include relay-based control system, approximately a quarter mile of roadway, drainage, bridge architecture, and public involvement.
12/19 – Present	New Interchange on Turnpike Mainline (SR 91) at Taft Vineland Road (~MP 253), Orange County, FL – Florida's Turnpike Enterprise Senior Engineer responsible for design of the temporary traffic control. H&H is providing project management and TTC design for this new partial clover interchange at SR 91 and Taft Vineland Road. The project also includes roadway reconstruction of Taft Vineland Road while maintaining the recently reconstructed bridge structures.
07/18 – 07/23	Districtwide Interstate Program Manager (IPM) Districtwide, FL – Florida DOT Senior Engineer supporting this multidiscipline indefinite quantity contract that provides as-needed services to support the FDOT work program as it relates to all interstate highway improvements in the five-county FDOT District in the Tampa Bay area. The geographic limit of this contract includes all the interstate highways within the region. Key tasks have included: (1) TCP plans for a "Concept Development Plan" submittal for the I-275/I-4 corridor from west of N. 14th Street on I-4 to north of Dr. Martin Luther King Jr. Blvd. on I-275. The plans were used in the RFP package for a Design Build Project. (2) TCP plans for a "Concept Development Plan" submittal for the I-275/I-4 corridor from I-4 WB to north of Morgan Street on I-275. The plans were used in the RFP package for a Design Build Project. (3) A TCP design concept for the widening of I-275/SR 93 SB/I-4/SR 400 WB from N of Morgan Street to W of N 12th Street.
05/09 – 07/10	US 19 from 22nd Avenue N to 44th Avenue N, Milling & Resurfacing, Pinellas County, FL - Florida DOT Senior Engineer responsible for producing various design documents, including design variations and exceptions, typical section package and RRR report, and supervised production of the roadway plans. Project consisted of resurfacing, restoring, and rehabilitation of 1.4 miles of US 19. Other major components involved improving ADA compliance and sidewalk connectivity, upgrading the bridge railings, designing crash walls beneath the bridge to protect the bridge piers adjacent to the CSX railroad, and upgrading the existing signals with mast arms.

	Firm employed by		Hardesty & Hanover, LLC		
	Name		J. Lee Adams, PE	Years of relevant experience with this employer	17
	Title		Water Resources / Hydraulics Engineer	Years of relevant experience with other employer(s)	13
Degree(s) / Years / Specialization				BS / 1995 / Civil Engineering	
Active registration number / state / expiration date				Professional Engineer: 41739 / LA / 09/30/2027	
Year registered	2017		Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities				Hydraulics Engineer	
Experience dates (mm/yy–mm/yy)		Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
11/20 – Present		H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Hydraulics Engineer for the bridge assessment, complete rehabilitative engineering design, and road design services required for the partial replacement of the Almonaster Ave Bridge and a new connector road. The Almonaster Ave Bridge crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. 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 the connecting roads were required to return this bridge to its full operating capability. The road design services included a new alignment for the connecting road including all drainage structures. H&H also developed a hydraulic study and a site plan that included several retention ponds for drainage improvements. Other services included environmental, geotechnical, and pavement design.			
01/22 – 12/22		H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Hydraulics Engineer for the design of a six-lane bascule bridge parallel and adjacent to the existing bridge. The new bridge will carry three westbound lanes, and the existing bridge will be modified to carry three eastbound lanes plus a pedestrian and bicycle path. Project scope includes the design of a new three-lane double-leaf bascule bridge and approach spans that will be north of and parallel to the existing bridge, as well as design modifications to the existing bridge to reconfigure it to include three eastbound lanes plus a pedestrian and bicycle path. H&H's preliminary design work included a visual structural inspection of the fracture critical elements, primary and secondary structural members, as well as electrical and mechanical systems inspections. Responsible for evaluating the scour susceptibility of the sites planned improvements.			
09/15 – Present		Route 42 Bridges over Blackwood Railroad Trail, Gloucester, Camden County, NJ - New Jersey DOT Deputy Project Manager/Stormwater Management Task Leader responsible for coordinating all disciplines in the preparation of Preliminary Engineering services. The project involved replacing a pair of three-span, fixed bridges conveying the northbound and southbound freeways over the former railroad ROW, with a single tunnel structure. Multistage construction and extensive utility relocation were involved. The project included acceleration and deceleration lane improvements and triggers State Storm Water Management Rules due to proposed impervious coverage. Design work was performed per the NJDEP regulations at NJAC 7:8. NJAC 7:13 compliance is also a factor as several storm outfalls discharge to the regulated floodplain. Prepared highway spread calculations and developed storm water management plan involving stormwater pipe hydraulic grade line. Calculations were performed using rational method per NJDOT RDM Chapter 10. Prepared the design of storm water management detention and retention basin for water quality, quantity, and recharge. Utilized NRCS TR-55/TR-20 flood routing calculations and methodologies to size basin and outlet features. Recharge requirement was evaluated using the State's NJGRS Spreadsheet. Water quality was achieved by retaining the water quality storm event beneath the low-level outlet. Quantity reduction was achieved by detaining storms more than the WQ event.			
01/23 – Present		Rehabilitation of Dock Bridge, Newark, Essex County, NJ - Amtrak Lead Hydraulics & Hydrology Engineer for the rehabilitation design of Dock Bridge, a complex, three-span-driven vertical lift rail bridge that crosses the Passaic River between Newark and Harrison. The purpose of the project is to bring the bridge to a state of good repair. Responsible for securing NJDEP Waterfront Development Permitting and USACE Nationwide Permits.			

10/17 – 10/18	Rehabilitation of Route 202 Bridge over Housatonic River, Litchfield County, CT – Connecticut DOT Lead Hydraulics Engineer for the rehabilitation of the Connecticut DOT Route 202 over Housatonic River. The bridge is a single span simply supported Pratt through truss variant carrying two lanes of traffic. Constructed in 1953, this steel truss bridge is comprised of a combination rolled and built-up truss members framed into riveted gusset plates. The site is subject to flood flows that carry woody debris and inundate the span. Mr. Adams assessed the debris loading risk, modeled design flows, and estimated lateral hydraulic forces on the superstructure to assist the structural design team with bridge seat rehab design.
05/16 – 06/20	Bridge Street Bridge over Passaic River, Newark & Harrison, NJ – North Jersey Transportation Planning & Authority Hydraulics Team Leader responsible for evaluating stream stability and coastal site conditions for the existing bridge and replacement alternatives for the federally funded Local Concept Development (LCD) phase for major rehabilitation or replacement of this deteriorating swing span bridge. Mr. Adams also evaluated stormwater management system operation, capacity impacts, and environmental permitting implications for same.
08/23 – Present	Phase II – Hydraulic Analysis and Scour Evaluation of Various Turnpike & Parkway Bridges, Statewide, NJ – New Jersey Turnpike Authority Project Engineer and Lead Hydraulics Engineer for the Phase II scour evaluation of two major bridges and 33 routine bridges over waterways on the NJ Turnpike and the Garden State Parkway facilities. Phase II Scour Evaluations are being performed in accordance with FHWA Hydraulic Engineering Circular No. 18 (HEC-18), “Evaluating Scour at Bridges” that includes preparation of individual report for each bridge. Work efforts involve preparation of field inspection, geotechnical sample collection, Hydrologic and Hydraulic Analysis, Scour Analyses, Foundation Stability Assessment, and a prioritized list of bridges recommended for development of a Plan of Action and/or Scour Countermeasure design and construction.
11/21 – Present	Replacement of Structure No. W112.72B/Interchange 16W–Ramp over Berry Creek Canal, Bergen County, NJ – New Jersey Turnpike Authority Lead Hydraulics Engineer for the preliminary and final engineering design to replace the existing structure with a three-span continuous steel girder bridge supported on deep foundations and the rehabilitation of a culvert (Str. #W112.26). As lead hydraulic engineer, developed SMS SRH-2D global model to estimate and route the tidal prism and define the boundary conditions in accordance with HEC-25 methodologies. Developed finer detailed 2D model to determine proposed bridge scour parameters and estimate scour per HEC-18 for tidal bridges in cohesive materials.
12/12 – 12/13	Rumson – Seabright Bridge Over Shrewsbury River, Monmouth County, NJ – County of Monmouth Hydraulics Engineer responsible for evaluating scour vulnerability for the existing Rumson Road Bridge S-32 and several replacement alternatives during the Local Concept Development Phase. Prepared cost estimates for scour countermeasure alternatives and performed field condition inspection of bridges and culverts. Performed hydraulic vulnerability analysis per NJDOT guidance and developed hydraulic modeling per FHWA’s HEC-25 guidance. During Preliminary Design, responsible for assessing stormwater management NJDEP regulatory requirements, evaluating existing system capacity, and designing stormwater system improvements for the Preliminary Engineering Phase of work. Prepared final design stormwater system improvements and prepared the final bridge hydraulics analysis, including modeling tidal hydraulic conditions during the stages of construction, and supported the engineering effort necessary for NJDEP Waterfront Development, USCG, and USACE permitting.
01/22 – 12/22	Strong River Scour Analysis, Scott, MS – Mississippi DOT Sr. Hydraulics Engineer for hydrology and hydraulics to perform a qualitative and quantitative analysis of the channel and develop a Scour Analysis Report according to MDOT’s Bridge Scour Evaluation Study Phase I & II guidelines. The two-phase approach began with preliminary findings and conclusions based on a survey of conditions and application of simple geomorphic concepts. This initial data collection phase supported the second phase, which was dedicated to engineering analysis and quantitative measurements of the structure and surrounding environment.
05/17 – 12/20	Route 25A Bridge Over Brackett Brook, Grafton County, NH – New Hampshire DOT Supervising Hydraulics Engineer for the rehabilitation or replacement of this NHDOT Red Listed bridge. Responsible for supervising the hydrologic and hydraulic analysis necessary to define the floodplain, floodway, and existing conditions; determine design loads, scour depths; and provide quality control. The two-span concrete deck bridge was in poor condition and considered scour critical during floods. Scope of work included an engineering feasibility study and report detailing type, span, and location (TS&L); preliminary and final design; permitting; and construction support services.

	Firm employed by		Hardesty & Hanover, LLC	
	Name	John Witthohn, PE	Years of relevant experience with this employer	9
	Title	Water Resources / Hydraulics Engineer	Years of relevant experience with other employer(s)	13
Degree(s) / Years / Specialization			BS / 2003 / Civil Engineering	
Active registration number / state / expiration date			Professional Engineer: 41575 / LA / 09/30/2027	
Year registered	2017	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Hydraulics Engineer	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
11/20 – Present	H.014530: Almonaster Ave Bridge Rehabilitation and New Connector Road, New Orleans, LA - Port of New Orleans/LADOTD Hydraulics Engineer for the bridge assessment, complete rehabilitative engineering design, and road design services required for the partial replacement of the Almonaster Ave Bridge and a new connector road. 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 the connecting roads were required to return this bridge to its full operating capability. The road design services included a new alignment for the connecting road including all drainage structures. H&H also developed a hydraulic study and a site plan that included several retention ponds for drainage improvements. Other services included environmental, geotechnical, and pavement design.			
01/22 – 12/22	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Hydraulics Engineer for the design of a six-lane bascule bridge parallel and adjacent to the existing bridge. The new bridge will carry three westbound lanes, and the existing bridge will be modified to carry three eastbound lanes plus a pedestrian and bicycle path. Project scope includes the design of a new three-lane double-leaf bascule bridge and approach spans that will be north of and parallel to the existing bridge, as well as design modifications to the existing bridge to reconfigure it to include three eastbound lanes plus a pedestrian and bicycle path. H&H's preliminary design work included a visual structural inspection of the fracture critical elements, primary and secondary structural members, as well as electrical and mechanical systems inspections. Responsible for evaluating the scour susceptibility of the sites planned improvements.			
03/23 – Present	NJ Route 179 Bridge Replacement over Back Brook, Hunterdon County, NJ – New Jersey DOT Hydraulics Engineer for the Conceptual Design of the replacement of Route 179 Bridge over Back Brook. Responsible for hydrologic and hydraulic analysis of existing and proposed bridge hydraulics, and the design of a wider bridge opening to provide natural stream banks and terrestrial species passage in compliance with NJDEP Flood Hazard Area rules on threatened and endangered species in fragmented habitat, per the NJAC 7:13.			
01/22 – 12/22	Strong River Scour Analysis, Scott, MS – Mississippi DOT Hydraulics Engineer responsible for hydrology and hydraulics to perform a qualitative and quantitative analysis of the channel and develop a Scour Analysis Report according to MDOT's Bridge Scour Evaluation Study Phase I & II guidelines. The two-phase approach began with preliminary findings and conclusions based on a survey of the conditions and the application of simple geomorphic concepts. This initial data collection phase supported the second phase, which was dedicated to engineering analysis and quantitative measurements of the structure and its surrounding environment. H&H performed a hydraulic analysis, evaluated the stability of the channel, and assessed scour depths for the dual-bridge crossing and recommended NBIS Item 113 coding.			

12/19 – 01/22	East Haddam Swing Bridge over the Connecticut River Rehabilitation, Haddam, CT – Connecticut DOT Hydraulics Engineer responsible for the 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, floorbeams, 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. Responsibilities include design coordination and development for all architectural components of the project.
10/18 – 06/19	Grand Avenue Bridge over Quinnipiac River, City of New Haven, CT – Connecticut DOT Hydraulics Engineer responsible for performing independent technical reviews and QA/QC reviews of the hydrologic and hydraulic analyses, and the bridge scour analysis for the rehabilitation or replacement design of this bridge. The multi-span moveable bridge is in poor condition and certain piers considered scour susceptible during coastal floods. The bridge superstructure is vulnerable to wind and wave forces during coastal flood conditions, which affects the structural rehabilitation and retrofit of the bridge bearings. John's participation in the review of the hydraulic forces calculations as a result of tidal floods, wind, waves, and debris blockage forces, aided in developing predictions of mean sea-level rise for future resiliency during the project's design life.
05/17 – 12/20	Route 25A Bridge Over Brackett Brook, Grafton County, NH – New Hampshire DOT Hydraulics Engineer for the preliminary design of the replacement of Rt 25A Bridge over Brackett Brook. Responsible for hydrologic and hydraulic analysis of existing 45°skewed bridge and two proposed bridge spans alternatives in accordance with NHDOT Bridge Design Manual; the design of a wider bridge opening in compliance with NHDES Stream Crossing Guidelines for wildlife continuity and terrestrial species passage; and scour analysis and countermeasure design on the selected alternative. Also prepared the hydraulic sections of the Rehabilitation Study Report (RSR) and the Type Size & Location (TSL) Study Report, currently under review by NHDOT.
01/16 – 07/18	NJ Route 17, Sprout Brook Culvert Replacement, Paramus, NJ – New Jersey DOT Hydraulics Engineer responsible for Preliminary Engineering Phase and Final Design Phase of hydrologic and hydraulic analysis of existing and proposed drainage conditions of this bridge replacement and highway widening project, and the design of the proposed stormwater management system. The project involves replacing a pair of three-span, fixed bridges conveying the NB and SB freeways over the former railroad ROW, with a single tunnel structure, in accordance with NJDOT and NJDEP requirements.
12/16 – 06/20	Saugus Draw Bridge Rehabilitation, Saugus, MA - Massachusetts Bay Transportation (MBTA) Hydraulics Engineer responsible for providing conceptual hydrologic and hydraulic analysis and scour evaluation in support of the rehabilitation and/or replacement evaluation of Bridge No. S-05-040 (A53) over the Saugus River, in Essex County. The Saugus Draw Bridge is a multi-span, single-leaf bascule bridge that carries MBTA's Newbury Port/Rockport Commuter Rail Service and freight trains over the river estuary, which is the only bridge linking this "eastern route" with the City of Boston. Responsibilities included the review and evaluation of all existing hydrologic and hydraulic data, tidal records, topographic and bathymetric mapping, and bridge as-built data, in order to provide a bridge scour evaluation suitable for the Conceptual Design Alternatives Analysis phase of this project.
05/17 – 12/20	Route 25A Bridge Over Brackett Brook, Grafton County, NH – New Hampshire DOT Hydraulics Engineer for the rehabilitation or replacement of this NHDOT Red Listed bridge. Responsible for supervising the hydrologic and hydraulic analysis necessary to define the floodplain, floodway, and existing conditions; determine design loads, scour depths; and provide quality control. The two-span concrete deck bridge was in poor condition and was considered scour critical during floods. Scope of work included an engineering feasibility study and report detailing type, span, and location (TS&L); preliminary and final design; permitting; and construction support services.

	Firm employed by		Hardesty & Hanover, LLC	
	Name	Lauren Peytavin, EI	Years of relevant experience with this employer	<1
	Title	Water Resources Designer	Years of relevant experience with other employer(s)	7
Degree(s) / Years / Specialization			MS Certificate / 2021 / Coastal Engineering BS / 2018 / Civil Engineering	
Active registration number / state / expiration date			Engineer in Training 33772 / LA / 09/30/2026	
Year registered	2018	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Hydraulics Designer	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
05/22 - 01/24	Almonaster Bridge Environmental Assessment, New Orleans, LA - Port of New Orleans Project Designer responsible for the assessment of the Almonaster Ave. Bridge Rehabilitation and New Connector Road project. The Almonaster Ave Bridge crosses over the Industrial Canal and provides two vehicular lanes and a single railroad track crossing down the center of the span. Lauren prepared Environmental Assessment/Environmental Impact documentation for the project that meets the criteria for LADOTD, LA DEQ, FHWA, NEPA and all federal and state compliance standards. Lauren was responsible for the analysis and estimation of project impact across a comprehensive panel of criteria, including recommendations of design alternatives as needed. She drew on her experience with roadway construction, wetland, and waterway permits to assist in permit acquisition for the Port of New Orleans for this project.			
06/25 – Present	H.004396 Lapalco Blvd. Movable Bridge over Harvey Canal, Jefferson Parish, LA - Jefferson Parish DPW/LADOTD Water Resources Designer for the design of a new three-lane double bascule movable bridge crossing of Harvey Canal and the widening of the existing four-lane Lapalco Blvd. to provide a facility carrying three lanes of traffic in each direction. The new bridge will be constructed as an independent structure adjacent to and north of the existing bridge with a new operator house. The project includes rehabilitation of the existing four-lane bridge with three lanes of traffic and a new pedestrian and bicycle lane, improvements to bridge and roadway approaches, and development of a Traffic Control Plan. John is performing quality control on the roadway elements of this project. All design work is in accordance with LADOTD Standards and Specifications and reviewed by LADOTD.			
07/25 – Present	SR 33 Bridge Replacements, Franklin County, MS – Mississippi DOT Hydraulics Designer for the Phase A Final Right-of-Way Plans for roadway design and roadway hydraulic design for four bridge replacements along SR 33 (Bridge Nos. 31.9, 34.6, 34.9, and 35.3). The project scope includes roadway realignment, roadway hydraulic design, preliminary right-of-way design, and final right-of-way design. H&H is providing the realignment of the roadway to run parallel to the existing and redesigning of one intersection at the end of the project. A hydraulic study and report are to be completed to resize the existing pipes, if necessary, and to verify sizing for a reinforced box culvert. A set of preliminary right-of-way plans are to be created following Mississippi Department of Transportation's (MDOT) guidelines and using the approved alignment from MDOT. Final right-of-way plans will be delivered after hydraulic design and roadway design have been finalized and a plan set has been created.			
06/20 - 01/24	RR082 Lakeshore Group E - Roadway Rehabilitation and Repair, New Orleans, LA - New Orleans Department of Public Works Assistant Project Engineer assisted in the design of the full reconstruction of two blocks of Ring St. in the Lakeshore Neighborhood. Design objectives included removal and replacement of the existing roadway surface, redesign of the roadway profile, and non-paving incidental repairs. Lauren was responsible for cost and materials estimates and preparation of final design plans utilizing AutoCAD Civil3D.			

06/25 – Present	Clay Street Bridge over Passaic River, Newark, NJ - Hudson County New Jersey Water Resources Designer for the Preliminary Drainage Design and Report for the replacement of the Clay Street swing bridge in New Jersey. The project scope includes Hydraulics and Hydrology Report production, including assessment of existing and proposed conditions in compliance with New Jersey Administration Code and New Jersey Department of Transportation engineering standards. Ms. Peytavin created models for Hydrologic assessment and Hydraulic assessment of existing and proposed project affects under prerequisite storm events, quantifying the project in accordance with New Jersey and the Department of Environmental Quality. These regulatory model results were then recorded in a formal report to be submitted in project preliminary planning.
05/23 – 01/24	Clayton's Pond Drainage Analysis and Design, Norco, LA - St. Charles Parish Dept of Public Works Hydraulics Modeler responsible for review and hydraulic analyses of the hydraulic design models provided by St. Charles Parish in anticipation of survey completion. Lauren evaluated the input elements of the models per expectations of the project area, such as soil quality, storm runoff, design storms, and model scenario output of the existing drainage system in anticipation of updating these models to illustrate Gaea's design recommendations. Lauren coordinated project needs with the St. Charles Parish Department of Public Works, attended conceptual meetings, and facilitated clarification of survey scope on behalf of the subcontractor.
01/22 - 01/24	Orpheum Levee Slope Pave, New Orleans, LA - Southeast Louisiana Flood Protection Authority Project Designer provided engineering design, drainage analysis, quantifying materials, and cost estimate for approximately 3,000 linear ft. of levee slope pave on the west side of the 17th Street Canal. She designed the pave of the levee slope for the purpose of mitigating rutted slope due to large vehicular traffic along Orpheum Ave. and preserving structural integrity of the levee. Assessed the potential impacts of paving the protected side of the levee on adjacent drainage infrastructure by quantifying storm runoff and time of concentration. She provided full-scope design direction and input, including alternative methods to direct rainfall and runoff, and review of plans for submittal. She also navigated permit requirements for this project.
06/18 - 01/24	RR031 Dillard A Roadway Rehabilitation and Repair, New Orleans, LA New Orleans Department of Public Works Project Designer for the engineering and design of 186 blocks of roadway reconstruction, including full road rehabilitation and replacement, utility design, and incidental road repair. Lauren utilized existing survey data to establish new road profiles, performed drainage calculations with HYDRWIN hydraulic computer software developed by the LADOTD, designed upgrades and improvement to the stormwater drainage and incidental road repair, and designed new utilities, including water, sewage, and drainage. Project deliverables included typical sections, summary of quantities, plan and profile sheets, construction cost estimates, and cross-section profiles.
11/17 - 01/24	RR011 Broadmoor Group C, New Orleans, LA - City of New Orleans Project Designer for this FEMA-funded roadway enhancement and reconstruction project located in the Broadmoor Neighborhood of New Orleans. Lauren assisted in the design of two full block removals and replacements, including surface asphalt, upgrade of utilities including water and storm drainage, implementation of ADA-compliant ramps, and point repairs of the sidewalk and driveways. She utilized drainage calculations, performed with the use of the HYDRWIN for the drainage system design and upgrade. Tasks for this project include site visits, design meetings, design deliverables, and resolution of review comments.
05/18 - 11/21	Hagan-Lafitte Drainage Design and Green Infrastructure, New Orleans, LA - City of New Orleans Hydraulics Modeler for engineering design and PCSWMM modeling for this large FEMA-funded project to improve drainage and reduce flooding in the Hagan-Lafitte Neighborhood. With the use of the PCSWMM model, Lauren identified areas most vulnerable to flooding within the neighborhood to strategically design and place green and grey infrastructure facilities for the greatest possible flood reduction. She assisted with production of project drawings and flood maps, as well as project inspection while work was under construction.
11/17 - 07/18	Tennessee River Conditions at RM 260.25 (Wilson Lake) with Respect to Boat Collision with Barge, Lauderdale County, AL - USACE Hydraulic Data Analyst performed a forensic analysis of Tennessee River conditions at River Mile 260.25 to determine the cross-sectional velocity distribution at RM 260.25. Lauren evaluated stage and discharge data provided by the Tennessee Valley Authority in conjunction with pool stage data provided by the Navigation Branch of Nashville U.S. Army Corps of Engineers (USACE) to determine velocity at the time and point of interest. She mapped bathymetric survey data provided by the Navigation Branch of the Nashville District USACE in both ArcGIS and AutoCAD software programs.

	Firm employed by		Hardesty & Hanover, LLC	
	Name	Dan Tarantino, AIA, RA, LEED AP	Years of relevant experience with this employer	8
	Title	Senior Architect	Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization			BA / 2008 / Architecture	
Active registration number / state / expiration date			Licensed Architect: 9255 / LA / 12/31/2025	
Year registered	2019	Discipline	Architecture	
Contract role(s) / brief description of responsibilities			Bridge Architect	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
10/22 – 11/22	Reconstruction of the Shore Road Bridge, Bronx, NY – New York City DOT Senior Architect for replacement of a rolling lift bridge over the Hutchinson River. Responsibilities include leading the overall aesthetic design of the bridge, coordinating the architectural and the engineering design, and leading the 3D visualizations and VR production for the project. Located entirely within Pelham Bay Park, the Shore Road Bridge spans the Hutchinson River and is a link on the NYC Mosholu-Pelham Bay Greenway bike and pedestrian route. The bridge is a 90-ft.-long Scherzer double-leaf rolling lift bascule span with three earth-filled concrete spandrel arch approach spans on each end. The total structure length is 865 ft. The bridge is 52-ft.-wide with two non-standard ten-foot lanes in each direction and a 7.5foot sidewalk on the south side. The clear channel width is 59 feet and the vertical clearance at mean high water is about 12.5 feet. The 108-year-old bridge was eligible for inclusion on both the New York State and National Registers of Historic Places. The unique architectural towers, or pylons, on the bridge were described in contemporary documents from 1910 as a means of emphasizing the gateway to vessels. The bridge has been rehabilitated and repaired several times in recent decades to extend its service life, including most recently in 2002, but the main steel members and the concrete approach spans have continued to deteriorate. The project includes studies, alternate assessment, NYSDOT design approval, and preliminary and final design for this locally administered federal aid project.			
10/17 – 09/20	Replacement of the US-1 Jupiter Bridge over ICWW Bridge, Jupiter, FL – Florida DOT Senior Architectural Designer for this bascule bridge replacement project. The SWAT process of overlapping the design phase with the PD&E phase required the preliminary design phase coordination and support of the NEPA process in developing the Type 2 Categorical Exclusion documentation. Serving as Engineer of Record of the project, H&H is addressing the structural and functional deficiencies of the existing US-1 / SR- 5 Jupiter Federal Bridge from CR-A1A (Ocean Blvd) to Beach Road and developed vertical and horizontal alignments for bridge replacement alternatives in context with environmental. The project included coordination with the historic Jupiter Inlet US Navy Married Men’s Quarters (1942) and the Jupiter Inlet Lighthouse (1860). Consensus building with local stakeholders was necessary for the planned detour during construction. This resulted in incorporating intersection improvements and TSM&O features along the detour route that will improve traffic functions at both ends of the approximately 2,960-foot-long (0.56 mile) project corridor.			
10/17 – 12/21	Gateway Express Improvements Design-Build, Pinellas County, FL – Florida DOT Project Architect responsible for developing architectural plans for the Gateway Express improvement project which will deliver toll facilities and needed limited and controlled access connections. H&H’s scope for this design-build project includes contributing to FDOT’s Alternative Technical Concepts (ATC) process; developing temporary traffic control plans (TTC) design for Segments 2 and 4; TTC coordination among Segments 1 through 4; tolls design for Segments 1, 2, and 4; and structures design for four bridges in Segment 4.			

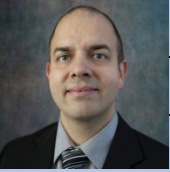
09/17 – 02/19	Replacement of the Raritan River Drawbridge, Perth Amboy and South Amboy, NJ – NJ Transit Senior Architect for the replacement of the Raritan River Drawbridge on North Jersey Coast Line. Mr. Tarantino's responsibilities include design coordination and development for all architectural components of the project. These components included the control house, machinery house, and access to the structure. Mr. Tarantino also provided the material and aesthetic considerations for the main span, house, and approach structures. The project includes a 0.5-mi.-long structure with a movable swing span at the navigational channel and more than 3,000 linear ft. of approaches between the Perth Amboy and South Amboy stations in NJ. This bridge replacement will be done off-line while maintaining full rail operations during construction. The project is funded by an FTA grant under its post-Sandy Emergency Relief Program, intended to protect major infrastructure components that are in danger of being damaged during extreme climate events. As such, the replacement bridge is required to have sufficient flood resilience to remain in operation after a major hurricane and the project must be implemented within a very tight timeframe. Historically, the bridge suffered frequent vessel collisions due to poor channel geometry; NJ TRANSIT intends to implement feasible navigational improvements to the extent possible without delaying the project delivery. The scope of work includes a feasibility study of various alignments and bridge replacement alternatives. The new bridge is likely to be a vertical lift with a minimum vertical clearance of 110 ft. and a navigational channel of 300 ft. The key issues include obtaining necessary permits and approvals to meet the timeframe specifies in the FTA grant requirements while minimizing the impact on NJ TRANSIT operations, as well as the adjacent properties and environment.
07/17 – 03/19	Replacement of the US 17 Swing Bridge over the Perquimans River, Perquimans County, NC – North Carolina DOT Senior Architectural Designer for this bridge replacement project. Responsibilities included design coordination and development for all architectural components of the project. The existing swing bridge over the Perquimans River will be replaced 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 improves geometrics, increases load carrying capacity and vertical clearance, and includes all the conveniences of a modern operational system.
06/19 – 07/20	East Side Coastal Resiliency Bridge Project – Delancey Street Pedestrian Bridge, New York, NY – New York City DOT Lead Architect for the preliminary and final design for the full replacement of several bridges, including Delancey Street, a pedestrian bridge in Manhattan. The project aims to protect neighborhoods and infrastructure from future storm surges and rising sea levels, as well as improve recreational opportunities and accessibility to the park and waterfront.
01/19 – 10/22	Final Design of the Amtrak Connecticut River Bridge, Old Saybrook, CT - Amtrak Project Architect for the in-depth condition inspection of the structural, mechanical, and electrical systems on the existing Connecticut River Bridge. H&H performed a feasibility and conceptual design study for rehabilitation or replacement of the bridge. Various alignment and profile layouts for various rail gradient options were developed and studied.
06/18 – 08/18	Rehabilitation of the Nostrand Avenue Station, Brooklyn, NY - Long Island Rail Road Senior Architectural Designer for this rail station rehabilitation project, which involved restoring the platforms to a state-of-good-repair to ensure ADA compliance and an overall improved facility. Design items included replacement of the station platforms, railings, and canopy roofing system, replacement of the four stairs and overpasses with ADA-compliant prefabricated stairs and overpasses, installation of two new elevators, and upgrades to station signage, lighting, electrical, and communications systems. Designs were developed in compliance with LIRR Station Design Guidelines, NYS Building Code, applicable requirements of ADA, and passenger safety features. Nostrand Avenue Station is found along the Atlantic Branch of the LIRR. Originally built during 1903-1905, the station was later rebuilt in the 1980s reflected and required updating.

	Firm Employed by	Hardesty & Hanover, LLC		
	Name	Kevin Meehan	Years of relevant experience with this employer	5
	Title	Principal Estimator	Years of relevant experience with other employer(s)	29
Degree(s) / Years / Specialization		B.S. / Civil Engineering / 1999 / Rutgers University		
Active registration number / state / expiration date		N/A		
Year registered	N/A	Discipline	N/A	
Contract role(s) / brief description of responsibilities		Cost Estimator		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).			
02/17 – Present	Raritan River Lift Bridge, Perth Amboy, NJ – NJ TRANSIT Principal Estimator for a \$500 million replacement of the Raritan River Drawbridge on North Jersey Coast Line. The project includes a half-mile long structure with a movable swing span at the navigational channel and more than 3,000 square feet of approaches between the Perth Amboy and South Amboy stations in New Jersey. Responsibilities included preparation of the construction costs for the project, including repackaging of the estimate when this major project was split up into three smaller construction contracts..			
08/19-03/20	Rehabilitation of Amtrak Bridge No. 8.50A, 8.50B, & 8.50C (Dock Bridge), Newark and Harrison, NJ - Amtrak Principal Estimator for the rehabilitation of Dock Bridge, which is a vertical lift bridge over the Passaic River between the cities of Newark and Harrison, New Jersey that carries four tracks of the Amtrak NEC and two tracks of the PATH Newark-WTC transit line. The project will decommission the moveable span. As part of the Amtrak Gateway Program, H&H provided engineering support services to assist Amtrak in preparing an FRA SOGR Grant Application for repairs to the Dock Bridge. The scope of work included a condition assessment, repair and reconstruction alternatives, a life cycle cost analysis, replacement bridge cost estimate, and construction schedule development. H&H also provided subconsultant oversight for Order of Magnitude cost estimates for replacing the electrical traction system, the third rail system, and other short and long-term repair recommendations.			
07/18-Present	Resident Engineering and Inspection for Broadway Bridge over the Harlem River Rehabilitation, New York, NY - New York City DOT Principal Estimator for this two-tiered vertical lift bridge project, which includes complete rehabilitation of civil, structural, electrical, and mechanical components of the bridge. The upper deck carries NYCTA's IRT subway line. The lower deck carries two northbound and three southbound lanes of vehicular traffic. It also has two seven-foot-wide sidewalks for pedestrians. The current structure, a double deck vertical lift bridge to carry the subway and vehicular traffic, was built in 1960. Work includes extensive replacement or rehabilitation of numerous mechanical and electrical components of the structure. Including span lock machinery, CCTV and security system, roadway and navigational lighting, control and machinery houses, bearing bushings, power supply, submarine cables, elevators, new generators, air buffers, new gates and signals.			
02/21-12/21	East Haddam Swing Bridge over the Connecticut River, East Haddam, CT – Connecticut DOT Principal Estimator for the rehabilitation of the East Haddam Swing Bridge (CTDOT Bridge 1138). Design efforts were focused on rehabilitating structural, mechanical, and electrical systems and upgrading components to improve reliability and decrease maintenance. The bridge rehabilitation included structural strengthening of the trusses and floor system to support all Connecticut Legal Loads after construction of the sidewalk. The bridge rehabilitation also included the replacement of the approach span bridge decks with an emphasis on constructability and reduced weight and preliminary and final design development of the sidewalk.			
10/20 – 10/25	Replacement of Four Bridges on the Bronx River Parkway Over NYCT, Metro-North, Amtrak, and CSX, Bronx, NY - New York State DOT Principal Estimator for this replacement project of four bridges. H&H is working on preliminary design (Phases I-IV) which include topographical survey; ROW mapping; hazardous waste/contaminated materials screening; in-depth inspection, evaluation of fatigue prone details; level I load ratings;			

	repair details for flag conditions; interim repairs to expansion joints; existing median barrier modifications, seismic evaluation; development of rehabilitation/replacement alternatives utilizing steel trapezoidal box girders, prestressed concrete beams and concrete segmental box girders; evaluation of environmental, wetland, and land use impacts, including tree survey and development of Section 4(f) documents.
10/20 – Present	Replacement of Three Culverts and the Bronx River Parkway Bridge, Westchester County, NY - Westchester County DPW Principal Estimator for this project providing design and construction support of the complete replacement of three culverts and a bridge on the historic Bronx River Parkway, including scour protection and roadway resurfacing of the existing roadway. The project will consist of land survey, utility identification, traffic analysis, hazardous material testing, soil testing, archeological study, cost estimating, load rating and structural, civil, geotechnical and architectural design.
12/20 -4/2022	Long Slip Fill and Rail Enhancement Phase II, Hudson County, NJ – NJ TRANSIT Lead Cost Estimator during design of Phase II of this project which will allow for longer train service operations and enable NJ TRANSIT to recover more quickly from storm events. Developed capital construction cost estimates for early and final design submissions, supported alternatives analysis, bid item sorting and tracked changes in scope and cost. The project will construct six new tracks, undergrade bridge, viaduct, special trackwork, OCS, three new platforms and a crew quarters facility.
10/11 – 09/20	Transportation Infrastructure in the Public Sector, Mercerville, NJ - JCMS, Inc. Lead Estimator for a team of cost estimators coordinating multiple concurrent projects with an emphasis on infrastructure, transportation and the public sector. Developed and coordinated engineer's cost estimates for public projects, from conceptual design through bid phase. Projects range from \$3 million to \$300 million. Over \$1 billion brought to contract. Developed cost modeling, alternative analysis, Lifecycle Cost Analysis, and Value Engineering. Developed and coordinated independent cost analyses for change orders. Developed fee proposals, attended sales presentations and coordinated with marketing department in pursuit of new or additional work. Enlarged department from 1.5 full time equivalents to a staff of eight by developing relationships, confidence and trust with partners and clients.
12/20-2/22	Northeast Corridor Mid Line Loop, Middlesex County, NJ – NJ TRANSIT Project Estimator during the Concept Development phase to improve commuter rails service on the NEC by eliminating a grade crossing conflict that exists at approximately MP32 @ Jersey Avenue Station/County Yard Facility. The project involves the addition of a new electrified loop track several miles long adjacent to and over the NEC. Developed direct and indirect costs for construction and developed contingencies and soft costs according to FTA guidelines
01/17-05/18	Repairs, Remediation, Flood Mitigation and Resiliency at Hoboken Terminal and Yard, Hudson County, NJ – NJ TRANSIT Cost Estimator during the early and final design phases of multiple packages for repairs and improvements to the terminal and yard that suffered significant flooding damage as a result of Superstorm Sandy in 2012. The project is to restore the terminal and yard operations, while at the same time increasing the system's resiliency - its ability to withstand and recover quickly from future storms. Estimates were created for each submission from concept to final design and bid packaging.
02/09 – 10/11	National September 11th Memorial And Museum, New York, NY - URS Senior Estimator for the National September 11th Memorial and Museum. Project estimator developing bid package estimates, change order estimates, allocating costs. Provided detailed takeoff and pricing for sitework, sitework utilities, foundations, superstructure and architectural building elements. Analyzed and tracked cost impact of revisions, changes, addenda, etc. Negotiated contract pricing and change orders with subcontractors and general contractors.

	Firm employed by Moffatt & Nichol Inc.			
	Name	Chace Hulon, P.E., ADCI	Years of relevant experience with this employer	11
	Title	Program Manager	Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization		Bachelor of Science / 2005 / Civil Engineering		
Active registration number / state / expiration date		P.E. 39701 / LA / 09/30/2026		
Year registered	2015	Discipline	P.E. Civil	
Contract role(s) / brief description of responsibilities		Engineer-Diver for Bridge Investigations Chace will manage all underwater evaluation services.		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
08/13-Ongoing	LaDOTD Underwater Bridge Inspections, Statewide, LA. Project Manager, Dive Supervisor, and National Bridge Inspection Standards (NBIS) Team Leader for the fourth consecutive retainer contract. Contracted to perform 2,386 underwater bridge inspections throughout Louisiana and in the most challenging environments, including dive operations in the Lower Mississippi River under the U.S. Coast Guard (USCG) Waterways Management Division. Level I, II, and III inspections of submerged elements were performed in accordance with the Federal Highway Administration (FHWA), Bridge Inspector's Reference Manual (BIRM), American Association of State Highway and Transportation Officials (AASHTO) Manual for Bridge Evaluation (MBE), current NBIS requirements, LaDOTD Engineering and Maintenance Directives, and the LaDOTD Bridge Inspection Manual (BIM). Bridge types included movable swing span bridges with pivot piers, bascule bridges large chamber piers, long-span cantilever through truss bridges with caisson piers, timber trestle bridges with timber piles, cable-stayed bridges with drilled shafts, and multi-span bridges with drilled shafts up to 8 miles in length, and ferry terminals. Managed the QA/QC plan and performed QC reviews as the confirming engineer on NBIS inspection reports. The underwater bridge inspections in large waterways were conducted with commercial divers and augmented with multibeam high-resolution acoustic imaging technology to consistently monitor streambed changes and structural deficiencies over subsequent inspection cycles. Acoustic hydrographic surveying methods were performed using the HydroLite-TM, Kongsberg Mesotech MS 1000, R2Sonic, and the Norbit Winghead i77 units deployed from a vessel. QINSy, Qimera, Applanix POSPac, MMS systems, and MatLab were used for accurate and repeatable post-processing efforts. Scour evaluations are integrated into every underwater bridge inspection, however focused scour evaluations for the purpose of performing a scour analysis were performed that included a macroscopic view of the surrounding site conditions. Performed emergency underwater damage assessments while augmenting sonar technology and advising on corrective actions and repair alternatives. Performed more than 20 emergency response damage assessments, including the recent allision of the Grosse Tete Bridge (LA77) over the Port Allen Lock canal.			
09/24-03/25	ARDOT, A6476 Bridge Investigation, Siloam Springs, AR. Project Manager, Dive Supervisor, and Team Leader for the investigation of Bent 3A Pier. This reinforced concrete hammerhead pier shaft has a spread footing keyed into shale and is experience severe cracking in the shaft and the footing. Chace led the investigation team along with an HNTB representative to safely perform diving and rigging operations in a river with challenging access. Maintenance of traffic (MOT) devices were utilized for shoulder closures in accordance with Manual on Uniform Traffic Control Devices (MUTCD) and American Traffic Safety Services Association (ATSSA) safety standards. Rigging operations were performed in accordance with Society of Professional Rope Access Technicians (SPRAT) safety standards for heavy equipment. Diving operations were performed in accordance with Association of Diving Contractors International (ADCI) safety standards.			

	Material sampling was required to thoroughly assess the chemical composition of the concrete matrix. Chace supervised and performed the concrete core extraction operations above- and below-water with a hydraulic unit with core sizes of 4-in diameter by 36-in long. Concrete coring was performed to investigate the chemical composition of the concrete matrix and to explore the limits of cracking in the footing. Testing included compressive tests and petrographic analyses. Tests concluded that excessive amounts of secondary ettringite (DEF) are present along with minor traces of alkali-silica reaction (ASR). Repairs consisted of crack injections and a monitoring plan to assess the stage of chemical reaction and the rate of deterioration as the reaction may be near completion.
03/20-Ongoing	LaDOTD Indefinite Delivery/Indefinite Quantity (IDIQ) for Complex Bridge Inspection, Statewide, LA. Project Manager and Chief Editor for major revisions of the 2020 bridge maintenance policies and procedures (BIM) to incorporate the 2022 NBIS Final Rule. The new policies and procedures included LaDOTD On-System BIM, LaDOTD Off-System BIM, and LaDOTD Coding & Field Guide. While the above documents have been completed, the LaDOTD Bridge Load Rating Manual development is currently in progress. M&N collaborated with the LaDOTD staff throughout the development to meet expectations and maintain their direction. In-person progress meetings occurred monthly, including facilitating various District Bridge Engineers throughout the state. The BIM policies and procedures were completed and published in December of 2024 to fully implement in January 2025 and be fully compliant for the FHWA audit in 2028. Compliance with the National Bridge Inspection Program (NBIP) and the associated Specifications for the National Bridge Inventory (SNBI) data tape is in alignment with the anticipated timeline published by FHWA. The tables of contents of the Off-System and On-System manuals were purposefully ordered primarily for the bridge inspector. The vital forms and checklists for the Bridge Inspection Program were narrowed down to eight and stored in the appendix section. The Coding and Field Guide is uniquely designed for a seamless user experience allowing efficient navigation through significant amounts of technical data. Performed in-depth bridge inspections on complex movable and long-span bridges. Performed structural, mechanical, and electrical inspections of six movable bridges utilizing detailed, nondestructive, and laboratory testing methods with hand sketches. Installed a wireless SHM (system health monitoring) system on the Greater New Orleans bridge to monitor significant deficiencies in Nonredundant Steel Tension Members (NSTM) members due to poor design details and advised of repair alternatives. Utilized nondestructive examination (NDE) methods (laser and acoustic) to analyze the rotational movement of an unstable pivot pier. Performed the inspections of two cable-stayed bridges with rope access techniques to inspect 208 cables between the two bridges, their Gensui Dampers, and anchorage systems. Performed two inspections of the I-10 Horace Wilkinson Bridge and two inspections of the Greater New Orleans Bridges, which are cantilever truss bridges utilizing rope access techniques and rolling lane closures to minimize traffic impacts. Performed a fracture critical inspection of the Green Bridge, a steel tied arch in New Orleans, utilizing rope access and Unmanned Aircraft Systems (UAS) access techniques. Performed the inspection of the I-10 Bridge over the Calcasieu River in Lake Charles utilizing rope access on NSTM and UAS access techniques on columns. The Skydio X10 drone with DroneDeploy and 3D Scan was used to capture an orthomosaic projection of the structure for digital twin models. Hands-on management and implementation of the QC review plan are vital to the continued success of this project.
08/22-03/23	U.S. Army Corps of Engineers (USACE) Bridge & Waterfront Facility Inspection Services at U.S. Army Garrison Fort Polk, Leesville, LA Project Manager, Dive Supervisor, and Quality Assurance Field Engineer Lead for inspection of 63 FHWA reportable structures in the Fort Polk inventory.

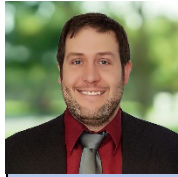
	Firm employed by Moffatt & Nichol Inc.				
	Name	Bryan Tyson, P.E., ADCI		Years of relevant experience with this employer	5
	Title	Structural Engineer		Years of relevant experience with other employer(s)	8
Degree(s) / Years / Specialization		Master of Science / 2010 / Civil Engineering; Bachelor of Science / 2008 / Civil Engineering			
Active registration number / state / expiration date		P.E. 0043425 / LA / 03/31/2027			
Year registered	2019	Discipline	P.E. Civil		
Contract role(s) / brief description of responsibilities		Engineer-Diver for Bridge Investigations Bryan will be responsible for planning, directing, and monitoring all aspects of underwater inspections, including serving as the Team Leader on-site.			
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
09/23-11/24	LaDOTD SNBI Program Development and Manual Publications, Statewide, LA. Structural Engineer and Lead Technical Editor for revising the 2020 bridge maintenance policies and procedures (BIM) to incorporate the 2022 NBIS Final Rule. The revised BIM was a major revision from the previous manual which included adding the 2022 NBIS Final Rules to 23 CFR Part 650 along with the SNBI, and the Metrics for the Oversight of the National Bridge Program. Primary contributor to the On-System and Off-System Bridge Inspection Manuals. Secondary contributor to the development of the Coding & Field Guide, which is an intuitive and interactive PDF allowing inspection personnel to quickly reference the relevant SNBI codes, state specific standard element numbers, rating definitions, and examples of proper documentation while in the field. Responsible for incorporating updates to the LaDOTD bridge inspection policies and procedures along with more than 30 reference documents from FHWA, LaDOTD, and AASHTO. Early in the project, the M&N team worked closely with the LaDOTD to review the bridge inspection manuals of other states and compared the pros and cons of the manuals to determine the best outline to fit LaDOTD's needs. Led weekly progress meetings with LaDOTD throughout the entire project to discuss updated policies and review the living action item list. Maintained quality through the quality control plan, and each chapter was reviewed by a dedicated team of subject matter experts to ensure overall quality and adherence to the new inspection policies, procedures, standards, and guidelines that were being established.				
07/23-Ongoing	LaDOTD Underwater Bridge Inspection Statewide, LA. Structural Engineer and Team Leader for the current 5-year retainer contract to perform underwater bridge inspections throughout Louisiana for the LaDOTD, including 100% visual inspections of submerged elements in accordance with NBIS requirements. Served as inspector for the underwater inspection of concrete, steel, and timber bridges.				
09/24-03/25	ARDOT, A6476 Bridge Investigation, Siloam Springs, AR Team Member, Engineer-Diver, Rigger, and Drone Pilot for the investigation of Bent 3A Pier. This reinforced concrete hammerhead pier shaft has a spread footing keyed into shale and is experiencing severe cracking in the shaft and the footing. MOT devices were utilized for shoulder closures in accordance with MUTCD and ATSSA safety standards. Rigging operations were performed in accordance with SPRAT safety standards for heavy equipment. Diving operations were performed in accordance with ADCI safety standards. Drone operations were performed in accordance with Federal Aviation Administration safety standards. Performed the 3D reconstruction of Pier 3A to provide a visual model of all crack locations accurately referenced, quantified, and rated. Material sampling was required to thoroughly assess the chemical composition of the concrete matrix. Bryan supported the concrete core extraction operations above- and below-water with a hydraulic unit with core sizes of 4-in diameter by 36-in long. Concrete coring was performed to investigate the chemical composition of the concrete matrix and to explore the limits of cracking in the footing. Testing included compressive tests and petrographic analyses. Tests concluded that excessive amounts of secondary ettringite (DEF) is present				

	along with minor traces of ASR. Repairs consisted of crack injections and a monitoring plan to assess the stage of chemical reaction and the rate of deterioration as the reaction may be near completion.
10/23-12/23	Hollingshead Dock Inspection, Panama City, FL Team Leader and Engineer-Diver for the underwater inspection of a steel bulkhead relieving platform built in the 1920s. Performed Level I, II, and III inspections of submerged elements in accordance with the American Society of Civil Engineers (ASCE) Underwater Investigations Standard Practice Manual and ASCE Waterfront Facilities Inspection and Assessment. QC review of the dock load, the existing structural configuration, and the inspection memo.
03/24-Ongoing	MDOT, Underwater Bridge Inspection, Statewide, MS Project Manager and Team Leader for a 1-year retainer contract to perform underwater inspections throughout Mississippi, including 100% visual inspections of submerged elements in accordance with NBIS requirements. Served as inspector for the underwater inspection of concrete, steel, and timber bridges.
09/16-10/16	TxDOT EBDG Galveston Bolivar Ferry Landing Repairs, Bolivar Peninsula, TX Engineer-Diver on an above-water and below-water inspection of the marine facilities. Performed Level I, II, and III inspections of submerged elements in accordance with the ASCE Underwater Investigations Standard Practice Manual and ASCE Waterfront Facilities Inspection and Assessment.
09/15-01/18	LaDOTD Underwater Bridge Inspections, Statewide, LA Structural Engineer and Dive Team Member for two out of ten tasks completed for this LaDOTD five-year-long retainer contract to perform underwater bridge inspections throughout Louisiana. Provided Level I, II, and III inspections of submerged elements in accordance with the FHWA, BIRM, AASHTO MBE, current NBIS requirements, and LaDOTD Engineering and Maintenance Directives. Bridge types included movable swing span bridges, bascule bridges, truss bridges, timber stringer bridges, cable-stayed bridges, single and multi-span bridges up to 8 miles in length. Assisted with the preparation of NBIS inspection reports. During the two tasks, provided inspection of more than 45 concrete, steel, and/or timber bridges. Included emergency evaluations utilizing underwater acoustic imaging. The second task involved bridges over large waterways with high-risk environmental conditions. Also, provided NBIS inspection reports.
05/16-07/16	Port Freeport Underwater Inspection of Berths 1, 2, 3, 5, and 7, Freeport, TX Team Lead and Structural Engineer for the underwater inspection of approximately 3100 linear feet of steel bulkhead. Performed Level I, II, and III inspections of submerged elements in accordance with the ASCE Underwater Investigations Standard Practice Manual and ASCE Waterfront Facilities Inspection and Assessment.
06/17-11/18	Underwater Bridge Inspection of Large River Crossings, Statewide, LA. Structural Engineer and Diver for two tasks under a five-year, open-ended retainer contract to perform underwater bridge inspections throughout Louisiana. Served as inspector and Team Leader. Provided Level I, II, and III inspections of submerged elements in accordance with the FHWA, BIRM, AASHTO MBE, current NBIS requirements, and LaDOTD Engineering and Maintenance Directives. Bridge types included movable swing span bridges, bascule bridges, truss bridges, timber stringer bridges, cable-stayed bridges, single and multi-span bridges up to 8 miles in length. Assisted with the preparation of NBIS inspection reports. During the two tasks, inspection of 41 major bridges over large waterways with deep foundation and dynamic channel conditions.

	Firm employed by Moffatt & Nichol Inc.				
	Name	Jeffrey Gazarek, ADCI		Years of relevant experience with this employer	10
	Title	Dive Safety Officer/Compliance Manager		Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization			Commercial Diving with Concentration in Subsea Inspection / 2005 / Divers Institute of Technology		
Active registration number / state / expiration date			N/A		
Year registered	N/A	Discipline	N/A		
Contract role(s) / brief description of responsibilities			Safety Manager, NBIS Underwater Team Leader, and Acoustic Imaging Specialist Jeffrey will develop the overall project safety plan, serve as the site safety manager, lead and perform NBIS underwater inspections, and perform acoustic imaging.		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
05/21-08/25	LaDOTD Underwater Bridge Inspections, Statewide, LA. Safety Manager, Engineering Technician Diver, and Team Leader for the current five-year retainer contract 2020-2025 to perform underwater bridge inspections throughout Louisiana. Performed Level I, II, and III inspections of submerged elements in accordance with the FHWA BIRM, AASHTO MBE, current NBIS requirements, and LaDOTD requirements.				
06/17-12/20	LaDOTD Underwater Bridge Inspections and Underwater Acoustic Imaging, Statewide, LA. Safety Manager, Engineering Technician Diver, and Dive Supervisor for the five-year retainer contract 2017-2021 to perform underwater bridge inspections throughout Louisiana. Performed Level I, II, and III inspections of submerged elements in accordance with the FHWA BIRM, AASHTO MBE, current NBIS requirements, and LaDOTD requirements. Acoustic imaging techniques were used to identify structural deficiencies and determine the limits of scour, to perform emergency underwater investigations, and to inspect bridges over high-risk waterways.				
11/15-03/17	LaDOTD Underwater Bridge Inspections, Statewide, LA. Site Safety Specialist, Engineering Technician Diver, and Team Leader for the five-year retainer contract 2012-2017 to perform underwater bridge inspections throughout Louisiana. Performed Level I, II, and III inspections of submerged elements in accordance with the FHWA BIRM, AASHTO MBE, current NBIS requirements, and LaDOTD requirements.				
04/19-04/24	LaDOTD In-Depth Bridge Inspections, Statewide, LA. Engineering Technician Diver, Sonar Specialist, Site Safety Specialist, and Senior Dive Supervisor for the five-year retainer contract to perform in-depth bridge inspections on complex and movable bridges throughout Louisiana. As the primary sub-consultant to HTNB, M&N is performing complete in-depth inspections (fulfilling both routine and fracture critical inspection types) as a quality assurance measure for the district personnel for the Headquarters Bridge Inspection Office. Performed Level I, II, and III inspections of submerged elements in accordance with the FHWA, BIRM, AASHTO MBE and Manual for Bridge Element Inspection, current NBIS requirements, and the LaDOTD BIM will be required as needed. Bridge types include cantilever trusses, segmental concrete box girders, movable swing span bridges, bascule bridges, cable-stayed bridges, and bridges of various configurations with timber elements.				
03/24-Ongoing	MDOT 2023 IDIQ Underwater Bridge Inspection, Jackson, MS. Safety Manager responsible for the review and approval of dive and field safety plans for specialty access projects, both above- and below-water. This includes oversight of diving operations, rope access, fall protection, mobile elevated work platforms, and confined space safety.				

10/22-10/22	USACE, Bridge Inspection Services at USAG Fort Polk, Leesville, LA. Project Safety Manager and Inspection Team Member responsible for field inspections and safety oversight. This task order covered the inspection of 63 bridges and the preparation of reports per NBIS and USACE procedures. Field inspections required extensive coordination with the Directorate of Public Works and range control to avoid affecting base operations. Four bridges required an underwater inspection. Duties included pre-site visit, dive plan and safety plan review, and on-site bridge inspection.
04/20-04/25	LaDOTD Inventory and Inspection of Sign Trusses, Statewide, LA. Site Safety Specialist who supported the overall project safety, logistics, and compliance. He led meetings to present findings related to sign inventory issues and reviewed guidance documents and logistical considerations across project teams. He addressed bucket truck safety concerns, maintenance planning, and contract modifications, including transitioning from a standard lease to a custom agreement. He reviewed and discussed hazard analyses, including electrical hazards and rope access safety. He evaluated and updated the Access Work Plan, project wide Activity Hazard Analysis (AHA), and Rope Access AHA. He oversaw incident reporting processes and facilitated safety meetings covering flaggers, traffic control technician, and traffic control supervisor training. He coordinated with the sub-consultant's regional manager to ensure safety documentation compliance with M&N standards and contract requirements and actively supported field team safety through regular reviews of the Field Safety Plan and by promoting clear communication and procedural adherence.
10/22-12/24	MDOT Bridge Load Rating Inspection, Statewide, MS. Team Leader and Technician who performed in-depth inspection for load rating of four bridges. The team identified and verified bridge defects from previous inspection reports, and cross-referenced on-site measurements with the original build drawings, which helped the team develop a load rating report and gave bridge posting recommendations.
07/15-12/19	LaDOTD Truss Sign Inspection, Statewide, LA. Team Leader and Site Safety Specialist to perform ancillary structure inspections throughout Louisiana. Inspections include steel and aluminum welds, critical moment connections, fatigue prone details, safety features and general maintenance items to increase service life in accordance with FHWA guidelines.

	Firm employed by Moffatt & Nichol Inc.				
	Name	Christopher "Chip" Eschenbach, ADCI, CWI		Years of relevant experience with this employer	7
	Title	Engineering Technician Diver		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization			Associate of Science / 2015 / Welding Technology		
Active registration number / state / expiration date			N/A		
Year registered	N/A	Discipline	N/A		
Contract role(s) / brief description of responsibilities			NBIS Underwater Team Leader and Marine Mapping Specialist Chip will help provide direction, experience, and safe practices during field inspections.		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
07/21-Ongoing	LaDOTD Underwater Bridge Inspections, Statewide, LA. Engineering Technician Diver responsible for maintaining the diving and inspection equipment, planning and preparing all necessary tools and information, providing field notes and observations, and writing reports. Provides routine maintenance of the inspection equipment and proper record keeping, uses the manufacturer's recommendations to maintain high standards for our inspections, and ensures that the industry standards are met before anything is used. Identifies the inspection locations for planning and preparation, reviews previous inspection data, identifies the proper lodging and safety accommodations, confirms tools are available for use, and confirms that safety concerns are addressed. Provides field notes and observations of the field data collection process, using a diver or non-diving inspector, and taking photos, video, or using acoustic imaging to collect data. Assists in the report development process and the rounds of QA/QC.				
09/19-03/20	LaDOTD NBIS Underwater Bridge Inspection Retainer Contract, Statewide, LA. NBIS Inspector for the five-year retainer contract to perform Level I, II, and III underwater bridge inspections in accordance with NBIS and AASHTO Manual for Bridge Element Inspection. Completed underwater inspection fieldwork, inspection reports, and quality control reviews. Underwater acoustic imaging techniques were used to locate structural deficiencies, identify potential undermining, observe the limits of scour, and document the limits of riprap installations.				
10/20-12/23	LaDOTD IDIQ Contract for In-Depth Bridge Inspections, Statewide, LA. NBIS Inspector for routine bridge inspections throughout Louisiana, including 100% visual inspections in accordance with NBIS requirements. Performed a routine bridge inspection of the cable-stayed Audubon Bridge above the deck utilizing rope access techniques in St. Francisville. Responsibilities included preparing SPRAT and climbing gear for inspection, coordinating with the other climbing teams, performing inspection on each cable for cable-stay bridge using rope access and performing inspection on the cable-stay towers, relaying defects and photographing defects found.				
04/24-Ongoing	MDOT 2023 IDIQ Underwater Bridge Inspections, Statewide. Engineering Technician Diver responsible for maintaining the diving and inspection equipment, planning and preparing all necessary tools and information, and providing field notes and observations. Maintaining the inspection equipment entails routine maintenance, proper record keeping, using the manufacturer's recommendations to maintain high standards for our inspections, and ensuring that the industry standards are met before anything is used. Planning and preparation have included the tools that are available for use and that all safety concerns are addressed. Providing field notes and observations using a diver or a non-diving inspection and taking photos or video.				



Firm employed by **Moffatt & Nichol Inc.**

Name **Charles Balzarini, P.E.**

Years of relevant experience with this employer

13

Title **Senior Waterfront Engineer**

Years of relevant experience with other employer(s)

7

Degree(s) / Years / Specialization

BS / 2008 / Civil Engineering

Active registration number / state / expiration date

P.E. AELC13854 / AK / 12/31/2025

Year registered

2013

Discipline

P.E. Civil

Contract role(s) / brief description of responsibilities

Engineer-Diver for Bridge Investigations

Charles will lead field teams in the documentation, rating, and reporting of deficiencies, and perform QC reviews of reports.

Experience dates (mm/yy–mm/yy)

Experience and qualifications relevant to the proposed contract; *i.e.*, “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).

01/19-10/24

LaDOTD In-Depth Bridge Inspections, Statewide, LA.

Project Inspector for the five-year retainer contract to perform in-depth bridge inspections on complex and movable bridges throughout Louisiana. As a major sub-consultant to HNTB, M&N performed in-depth inspections (fulfilling both routine and fracture critical inspection types) as a quality assurance measure on the district personnel for the Headquarters Bridge Inspection Office. The team performed Level III inspections of submerged elements in accordance with the FHWA, BIRM, AASHTO MBE, AASHTO BEIM, and the LaDOTD BIM will be required as needed. Bridge types include cantilever trusses, cable-stayed bridges, movable swing span bridges and bascule bridges. Management, communication, and implementation of the QC/QA plan is an instrumental component to this project. NBIS Team Leader and Inspector for the routine and fracture critical NBIS inspection of the Greater New Orleans Bridges, the Green Bridge, and the Luling bridge specifically to inspect the main truss spans and fracture critical elements. Professional rope access techniques were used to safely access each nonredundant steel tension member. Element quantities were updated, and additional defects were added with repair recommendations. Performed QC reviews on the deliverables.

01/18-Ongoing

LaDOTD Underwater Bridge Inspection, Statewide, LA.

Inspector for the statewide contract to perform over 500 underwater bridge inspections throughout Louisiana. Level I, II, and III inspections of submerged elements are performed in accordance with the FHWA, BIRM, AASHTO MBE, current NBIS requirements and LaDOTD Engineering and Maintenance Directives. Inspections will be completed by using diving and underwater imaging. Imaging units used include Kongsberg Mesotech MS 1000 and Norbit Winghead i77. Bridge types include movable swing span bridges, bascule bridges, truss bridges, timber stringer bridges, cable-stay bridges, single and multi-span bridges.

02/25-Ongoing

Alaska Department of Transportation Bridge, Ferry Terminal, and Tunnel Inspection, Statewide, AK.

Project Manager and Inspection Team Leader for an on-call contract to inspect Alaska’s bridges, ferry terminals, and tunnels. The work includes underwater, NSTMs, and routine inspections of facilities and structures on a task order basis. The contract runs from 2025-2027 with an option to extend it through 2029.

02/20-12/22

LaDOTD Inventory and Inspection of Sign Trusses, Statewide, LA.

Team Member for the five-year retainer contract to perform approximately 1,550 overhead sign truss inspections and rehabilitation designs throughout Louisiana. Ancillary inspections included steel and aluminum welds, high-stress moment connections, and fracture critical elements in accordance with FHWA guidelines. The team performed Level III inspections with ultrasonic testing on bolted connections, mag particle testing on steel-welded connections, and dye penetrant testing on aluminum-welded connections. Performed quality assurance/quality control reviews on inspections reports.

02/15-12/19	LaDOTD Inventory and Inspection of Sign Trusses, Statewide, LA. Inspection Team Leader and Inspector for inventory and inspection of highway signs. Hands-on inspection work was performed overhead by bucket truck and climbing on active highways. Aluminum and steel sign truss members were inspected for inventory and for structural defects in accordance with FHWA guidelines.
09/21-03/23	USACE, Bridge and Underwater Facilities Inspections IDIQ - Fort Polk, LA. Inspection Team Leader who reviewed previous reports, performed routine bridge inspections and prepared new reports for bridges and large culverts on Fort Polk. The Inspection of existing bridges was completed under the direct supervision of a registered Professional Engineer. A total of 63 bridges were inspected.
02/19-12/20	LaDOTD 2017 NBIS Underwater Bridge Inspection Retainer Contract, Statewide, LA. NBIS Inspector for the five-year retainer contract to perform Levels I, II, and III underwater bridge inspections in accordance with NBIS and AASHTO Manual for Bridge Element Inspection. Bridge types inspected consisted of movable bridges, truss bridges, timber stringer bridges, cable-stayed bridges, and single and multi-span girder bridges up to 14 miles in length. Site conditions included salt and fresh waters, with varying levels of current, having low to no visibility. Uniform Assessment Instrument techniques were used to locate structural deficiencies and identify bottom conditions. Responsible for leading underwater inspection teams to complete fieldwork, inspection reports, and quality control reviews.

	Firm employed by: A P S Engineering and Testing, LLC			
	Name	Sergio Aviles, P.E., M. ASCE	Years of relevant experience with this employer	14
	Title	President/Geotechnical Manager	Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization		BS Civil Engineering/2001/Geotechnical		
Active registration number / state / expiration date		P.E.0033571/ LA / 03-31-2026, ATSSA Work Zone Traffic Control Technician, Flagger, Water Well Contractor's License		
Year registered	2007	Discipline	Civil	
Contract role(s) / brief description of responsibilities		Geotechnical Manager/Designer/Field Crew & Lab Management - Meets MPR 9		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
24 years of experience 05/01-Present	Mr. Sergio Aviles, P.E. is the President and Geotechnical Manager of APS Engineering and Testing, LLC, and meets the DOTD Minimum Personnel Requirement No. 9. He has extensive expertise in slope stability analysis, embankment settlement calculations, mechanically stabilized earthen (MSE) wall design, pile design, sheet pile design, pile integrity testing, and Pile Dynamic Analyzer (PDA). Since founding A P S fourteen years ago, Mr. Aviles has led geotechnical engineering, laboratory testing and materials testing projects statewide for both government agencies and private clients. His professional portfolio includes the design and construction supervision of complex infrastructure projects throughout Louisiana, ensuring technical accuracy, adherence to DOTD specifications, and the highest standards of quality control.			
09/19–Ongoing	Project No. H.0041005.5 and .6: I-10 LA415 to Essen Lane on I-10 and I-12: The Geotechnical Investigation comprised the advancement of 77 deep borings along the project alignment, spanning from the Washington Street Exit to the LSU Lakes. A P S performed 16 over-water borings utilizing barge-mounted drilling platforms and 61 land-based borings using truck-mounted rigs. Subsurface characterization included Shelby tube sampling, Standard Penetration Testing (SPT), and split-spoon recovery to obtain representative soil profiles. Laboratory testing included approximately 1,000 tests, including Unconsolidated Undrained (UU) Triaxial Compression tests for shear strength evaluation and Atterberg Limits for plasticity classification, in accordance with ASTM standards. Pile foundation performance was assessed through dynamic testing services, including Pile Driving Analyzer (PDA) instrumentation and signal matching via CAPWAP analysis. These tests provided real-time data on pile capacity, drivability, and soil-pile interaction, supporting axial load design and installation recommendations. Mr. Aviles serve as Geotechnical Manager, providing technical oversight across all phases—from field exploration and lab testing to analysis and reporting. His leadership ensured conformance with DOTD specifications, QA/QC protocols, and schedule adherence.			
06/20–04/23	Rural Bridge Replacement Initiative Phase I: The scope included geotechnical investigation and design for the replacement of 60 bridge structures along the LA state highway system. Geotechnical Investigation consisted of drilling, laboratory testing, soil classification, and site characterization. Engineering analysis included slope stability analysis (when applicable) and pile capacity analysis for foundations to support the new bridge structures. Mr. Aviles served as Geotechnical Manager for the Geotechnical Investigations and Design Team, overseeing every phase of the project with hands-on leadership to ensure technical excellence and on-time delivery.			
03/19–05/25	Project No. H.001344 US 190: LA 437 to US 190 BUS: A P S was selected as part of the winning team for the Geotechnical Investigation and Design of the proposed new bridge. The scope of work included the drilling and testing of 19 deep borings to support bridge foundation design recommendations. In addition to deep foundation investigations, A P S performed site-specific testing of subsurface soils, base materials, and concrete placement zones to evaluate compliance with structural and geotechnical performance criteria. Laboratory testing supported classification, strength, and constructability assessments for proposed bridge elements. A P S also provided PDA instrumentation, testing, and CAPWAP analysis. Mr. Aviles served as Geotechnical Manager for the investigation and design team. He provided direct oversight of field operations, laboratory analysis, and engineering deliverables, ensuring technical accuracy, and timely completion across all phases of the project. overseeing every phase of the project with hands-on leadership to ensure technical excellence and on-time delivery.			

01/22–05/24	Project No. H.001352.6 and H.002273.5 Comite River Diversion Bridge at LA 67, LA 19, and LA 19 RR Bridge: A P S was selected as part of the winning team for the Design of the Diversion CMAR project. A P S performed the Geotechnical Investigation and Design for the project. The scope also included testing of subsurface soils, base materials, and concrete placement areas to evaluate compliance with design standards for the proposed roadway and bridge structures. A P S performed four Pile Driving Analyzer (PDA) tests during construction monitoring to assess pile performance and verify installation criteria. Mr. Aviles served as Geotechnical Manager for the Geotechnical Investigations and Design Team, overseeing all phases of exploration, analysis, and reporting.
09/21–05/24	Port Hudson-Pride Road (LA-964 – LA-19)- The scope included Geotechnical Investigation to enable an evaluation of an acceptable foundation for the proposed pavement rehabilitation and new bridge. A total of 26 borings were drilled and tested for Geotechnical recommendations for the City of Baton Rouge. Mr. Aviles served as Geotechnical Manager for the investigation and Design Team, overseeing every phase of the project with hands-on leadership to ensure technical excellence and on-time delivery.
11/19–12/23	Project No. H.010155: US 90 Railroad Overpass SE of LA 85- A P S was selected as part of the winning team for the Geotechnical Investigation and Design for the proposed new overpass. A total of 12 deep borings were drilled and tested for Geotechnical recommendations. Mr. Aviles served as Geotechnical Manager for the Geotechnical Investigations and Design Team, overseeing every phase of the project with hands-on leadership to ensure technical excellence and on-time delivery.
03/21–11/22	Nicholson Drive Segment 2 (Bluebonnet Blvd-Ben Hur Rd.)- The scope included a comprehensive geotechnical investigation to support foundation recommendations for proposed pavement rehabilitation and new bridge construction. A total of 32 borings were drilled and tested to characterize subsurface conditions and develop geotechnical design parameters for the City of Baton Rouge. Mr. Aviles served as Geotechnical Manager for the Geotechnical Investigations and Design Team, providing hands-on leadership and technical oversight throughout all phases of the project to ensure accuracy, quality, and timely delivery.
03/15–04/15	Holly Drive Bridge Replacement- St. Tammany Parish: The scope included Geotechnical Investigation for the replacement of a bridge structure in Covington, Louisiana. A P S performed piles vertical resistance analyses for square PPC piles with sizes ranging 16-inch, 18-inch and 24-inches, roadway design, and culvert design. Mr. Aviles served as Geotechnical Manager for the Geotechnical Investigations and Design Team, overseeing every phase of the project with hands-on leadership to ensure technical excellence and on-time delivery.

	Firm employed by: A P S Engineering and Testing, LLC			
	Name	Sairam Eddanapudi, PE	Years of relevant experience with this employer	14
	Title	Chief Geotechnical Engineer	Years of relevant experience with other employer(s)	9
Degree(s) / Years / Specialization			ME/2002/Civil Engineering, BE/1999/Civil Engineering,	
Active registration number / state / expiration date			P.E.0035129/ LA / 03-31-2026 ATSSA Work Zone Traffic Control Technician	
Year registered	2009	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Chief Geotechnical Engineer/Laboratory QA Manager – Meets MPR 9	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
23 years of Experience 05/02–Present	Mr. Sairam (Sai) Eddanapudi, P.E. serves as Chief Engineer at A P S Engineering and Testing, LLC, meets the DOTD Minimum Personnel Requirement No. 9. He brings 23 years of experience in geotechnical and civil engineering, with specialized expertise in advanced geotechnical laboratory testing, quality control, and personnel training. His professional design experience includes roadways, bridges, levees, and T-walls, as well as both shallow and deep foundations. His field expertise covers quality control inspections for auger cast piles, drilled shafts, soil, and concrete. Mr. Eddanapudi is proficient in a wide range of engineering software, including Slope/W (2004, 2007, and 2024 versions) for slope stability analysis, Seep/W for seepage analysis, DRIVEN 1.4 for driven pile analysis, MicroStation V8, CWALSHT and FS004 for Slope stability, Swell Potential analysis for expansive soils, drilled shaft design software, auger cast pile analysis, AASHTO pavement design, slope analysis, and differential settlement evaluation.			
09/19–Ongoing	Project No. H.0041005.5 and .6: I-10 LA415 to Essen Lane on I-10 and I-12 The Geotechnical Investigation comprised the advancement of 77 deep borings along the project alignment, spanning from the Washington Street Exit to the LSU Lakes. A P S performed 16 over-water borings utilizing barge-mounted drilling platforms and 61 land-based borings using truck-mounted rigs. Subsurface characterization included Shelby tube sampling, Standard Penetration Testing (SPT), and split-spoon recovery to obtain representative soil profiles. Laboratory testing included approximately 1,000 tests, including Unconsolidated Undrained (UU) Triaxial Compression tests for shear strength evaluation and Atterberg Limits for plasticity classification, in accordance with ASTM standards. Pile foundation performance was assessed through dynamic testing services, including Pile Driving Analyzer (PDA) instrumentation and signal matching via CAPWAP analysis. These tests provided real-time data on pile capacity, drivability, and soil-pile interaction, supporting axial load design and installation recommendations. Mr. Eddanapudi serves as Chief Engineer for the Project Design Team, providing technical Design leadership and managing quality assurance for all laboratory testing to ensure accuracy, compliance, and reliability of geotechnical data. His leadership ensured conformance with DOT specifications, QA/QC protocols, and schedule adherence.			
06/20–04/23	Rural Bridge Replacement Initiative Phase I: The scope included geotechnical investigation and design for the replacement of 60 bridge structures along the LA state highway system. Geotechnical Investigation consisted of drilling, laboratory testing, soil classification, and site characterization. Engineering analysis included slope stability analysis (when applicable) and pile capacity analysis for foundations to support the new bridge structures. Mr. Eddanapudi served as Chief Engineer for the Project Design Team, providing technical Design leadership and managing quality assurance for all laboratory testing to ensure accuracy, compliance, and reliability of geotechnical data.			
03/19–05/25	Project No. H.001344 US 190: LA 437 to US 190 BUS: A P S was selected with the winning team for the Geotechnical Investigation and Design of the proposed new bridge. A total of 19 deep borings were drilled and tested for foundation recommendations. The scope also includes conducting testing on the subsurface, base and concrete placement at the site to enable an evaluation of an acceptable standard for the proposed structures. Mr. Eddanapudi served as Chief Engineer for the Project Design			

	Team, providing technical Design leadership and managing quality assurance for all laboratory testing to ensure accuracy, compliance, and reliability of geotechnical data.
01/22–05/24	Project No. H.001352.6 and H.002273.5: Comite River Diversion Bridge at LA 67, LA 19, and LA 19 RR Bridge A P S was selected as part of the winning team for the Design of the Diversion CMAR project. A P S performed the Geotechnical Investigation and Design for the project. The scope also included testing of subsurface soils, base materials, and concrete placement areas to evaluate compliance with design standards for the proposed roadway and bridge structures. A P S performed four Pile Driving Analyzer (PDA) tests during construction monitoring to assess pile performance and verify installation criteria. Mr. Eddanapudi served as Chief Engineer for the Project Design Team, providing technical Design leadership and managing quality assurance for all laboratory testing to ensure accuracy, compliance, and reliability of geotechnical data.
09/21–05/24	Port Hudson-Pride Road (LA-964 – LA-19) The scope included Geotechnical Investigation to enable an evaluation of an acceptable foundation for the proposed pavement rehabilitation and new bridge. A total of 26 borings were drilled and tested for Geotechnical recommendations for the City of Baton Rouge. Mr. Eddanapudi i served as Chief Engineer for the Project Design Team, providing technical Design leadership and managing quality assurance for all laboratory testing to ensure accuracy, compliance, and reliability of geotechnical data.
11/19–12/23	Project No. H.010155: US 90 Railroad Overpass SE of LA 85 A P S was selected with the winning team for the Geotechnical Investigation and Design for the proposed new overpass. A total of 12 deep borings were drilled and tested for Geotechnical recommendations. Mr. Eddanapudi served as Chief Engineer for the Project Design Team, providing technical Design leadership and managing quality assurance for all laboratory testing to ensure accuracy, compliance, and reliability of geotechnical data.
03/15–04/15	Holly Drive Bridge Replacement- St. Tammany Parish The scope included Geotechnical Investigation for the replacement of a bridge structure in Covington, Louisiana. A P S performed piles vertical resistance analyses for square PPC piles with sizes ranging 16-inch, 18-inch and 24-inches, roadway design, and culvert design. Mr. Eddanapudi served as Chief Engineer for the Project Design Team, providing technical Design leadership and managing quality assurance for all laboratory testing to ensure accuracy, compliance, and reliability of geotechnical data.

	Firm employed by A P S Engineering and Testing, LLC				
	Name	Surendra Pathak, P.E., M.S.		Years of relevant experience with this employer	11
	Title	Senior Supervisor Engineer		Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization			MSCE/ 2013/ Civil Engineering BE/ 1998/ Civil Engineering		
Active registration number / state / expiration date			P.E.0043487/ LA/ 09-03-2025 ACI Certified Technician Pile Dynamic Analyzer Proficient Rank ATSSA Work Zone Traffic Control Supervisor, Flagger,		
Year registered	2019	Discipline	Civil		
Contract role(s) / brief description of responsibilities			Senior Supervisor Engineer/Design Engineer/QA-QC Field Testing, PDA testing leader.		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
21 years of experience 08/04–Present	Mr. Surendra Pathak serves as Senior Supervisor Engineer at A P S Engineering and Testing, LLC. Mr. Pathak brings 21 years of experience in geotechnical engineering, with specialized expertise in Pile Driving Analyzer (PDA) testing and field quality control. His technical experience spans the geotechnical design of roadways, bridges, levees, and T-walls, as well as the design and analysis of shallow and deep foundation systems. In the field, Mr. Pathak has directed and performed quality control inspections for auger cast piles, drilled shafts, soil, and concrete testing, and Pile Driving Analyzer (PDA) testing operations for driven pile testing, including data collection, real-time analysis, and coordination with project engineers to establish pile driving criteria.				
09/19–Ongoing	Project No. H.0041005.5 and .6: I-10 LA415 to Essen Lane on I-10 and I-12 The Geotechnical Investigation comprised the advancement of 77 deep borings along the project alignment, spanning from the Washington Street Exit to the LSU Lakes. A P S performed 16 over-water borings utilizing barge-mounted drilling platforms and 61 land-based borings using truck-mounted rigs. Subsurface characterization included Standard Penetration Testing (SPT), Shelby tube sampling, and split-spoon recovery to obtain representative soil profiles. Laboratory testing included approximately 1,000 tests, including Unconsolidated Undrained (UU) Triaxial Compression tests for shear strength evaluation and Atterberg Limits for plasticity classification, in accordance with ASTM standards. Pile foundation performance was assessed through dynamic testing services, including Pile Driving Analyzer (PDA) instrumentation and signal matching via CAPWAP analysis. These tests provided real-time data on pile capacity, drivability, and soil-pile interaction, supporting axial load design and installation recommendations. Mr. Pathak serves as the Senior Supervisor Engineer on the Project Design Team, providing foundation design expertise, and acted as Team Leader for Pile Dynamic Analyzer (PDA) testing and analysis.				
06/20–04/23	Rural Bridge Replacement Initiative Phase I The scope included geotechnical investigation and design for the replacement of 60 bridge structures along the LA state highway system. Geotechnical Investigation consisted of drilling, laboratory testing, soil classification, and site characterization. Engineering analysis included slope stability analysis (when applicable) and pile capacity analysis for foundations to support the new bridge structures. Mr. Pathak served as the Senior Supervisor Engineer on the Project Design Team, providing foundation design expertise.				
03/19–05/25	Project No. H.001344 US 190: LA 437 to US 190 BUS A P S was selected as part of the winning team for the Geotechnical Investigation and Design of the proposed new bridge. The scope of work included the drilling and testing of 19 deep borings to support bridge foundation design recommendations. In addition to deep foundation				

	investigations, A P S performed site-specific testing of subsurface soils, base materials, and concrete placement zones to evaluate compliance with structural and geotechnical performance criteria. Laboratory testing supported classification, strength, and constructability assessments for proposed bridge elements. A P S also provided PDA instrumentation, testing, and CAPWAP analysis. Mr. Pathak served as the Senior Supervisor Engineer on the Project Design Team, providing foundation design expertise, and acted as Team Leader for Pile Dynamic Analyzer (PDA) testing and analysis.
01/22–05/24	Project No. H.001352.6 and H.002273.5: Comite River Diversion Bridge at LA 67, LA 19, and LA 19 RR Bridge A P S was selected as part of the winning team for the Design of the Diversion CMAR project. A P S performed the Geotechnical Investigation and Design for the project. The scope also included testing of subsurface soils, base materials, and concrete placement areas to evaluate compliance with design standards for the proposed roadway and bridge structures. A P S performed four Pile Driving Analyzer (PDA) tests during construction monitoring to assess pile performance and verify installation criteria. Mr. Pathak served as the Senior Supervisor Engineer on the Project Design Team, providing foundation design expertise, and acted as Team Leader for Pile Dynamic Analyzer (PDA) testing and analysis.
09/21–05/24	Port Hudson-Pride Road (LA-964 – LA-19) The scope included Geotechnical Investigation to enable an evaluation of an acceptable foundation for the proposed pavement rehabilitation and new bridge. A total of 26 borings were drilled and tested for Geotechnical recommendations for the City of Baton Rouge. Mr. Pathak served as the Senior Supervisor Engineer on the Project Design Team, providing foundation design expertise, and acted as Team Leader for Pile Dynamic Analyzer (PDA) testing and analysis.
11/19–12/23	Project No. H.010155: US 90 Railroad Overpass SE of LA 85 A P S was selected as part of the winning team for the Geotechnical Investigation and Design for the proposed new overpass. A total of 12 deep borings were drilled and tested for Geotechnical recommendations. Mr. Pathak served as the Senior Supervisor Engineer on the Project Design Team, providing foundation design expertise.
03/15–04/15	Holly Drive Bridge Replacement- St. Tammany Parish The scope included Geotechnical Investigation for the replacement of a bridge structure in Covington, Louisiana. A P S performed piles vertical resistance analyses for square PPC piles with sizes ranging 16-inch, 18-inch and 24-inches, roadway design, and culvert design. Mr. Pathak served as the Senior Supervisor Engineer on the Project Design Team, providing foundation design expertise, and acted as Team Leader for Pile Dynamic Analyzer (PDA) testing and analysis.

	Firm employed by KTA-Tator, Inc.				
	Name	Robert Lanterman		Years of relevant experience with this employer	23
	Title	Supervisor-Other (Senior Coatings Consultant)		Years of relevant experience with other employer(s)	6
Degree(s) / Years / Specialization			BE / 1999 / Chemical Engineering		
Active registration number / state / expiration date			AMPP Senior Certified Coatings Inspector (#13505; expiration 5/23/2025) AMPP Certified Protective Coatings Specialist (#2015-820-136; expiration 12/31/2027)		
Year registered	n/a		Discipline		
Contract role(s) / brief description of responsibilities			Senior Coatings Consultant / Scope Item 1.2 (Sampling) / sampling and laboratory testing		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
06/25 – Present	Pennsylvania Department of Transportation, Harrisburg, PA. Mr. Lanterman is providing sampling services and is supervising laboratory heavy metals testing services for the rehabilitation of the coating system on the Fort Duquesne Bridge in Pittsburgh, PA. KTA is serving as a subconsultant.				
03/24 – 04/24	Louisiana Department of Transportation and Development, Baton Rouge, LA. Mr. Lanterman performed document review and coating condition assessment services for the US 190 Krotz Springs Bridges (eastbound and westbound) in St. Landry Parish. He prepared a report detailing the findings of the assessment and providing recommendations for the maintenance of the coating system on this bridge. KTA served as a subconsultant.				
03/22 – 03/22	South East Philadelphia Transportation Authority (SEPTA), Philadelphia, PA. Mr. Lanterman evaluated the existing coating condition (visual examination, coating thickness and adhesion measurements, substrate examination, and coating sample procurement) on the eastern end of the Market Street Frankford Elevated Viaduct and provided recommendations on appropriate maintenance strategies, opinions of probable construction cost, and modification of the existing SEPTA surface preparation and coating application specifications for use in bidding the work to prospective contractors. KTA served as a subconsultant.				
09/21 – 12/21	Louisiana Department of Transportation and Development, Baton Rouge, LA. Mr. Lanterman performed a coating condition assessment and assisted with the development of surface preparation, coating application, and environmental/worker protection and containment specifications/drawing notes for the rehabilitation of the IWGO Bridge in Baton Rouge. KTA served as a subconsultant.				
07/20 – 08/20	Cuyahoga County (OH) Department of Public Works, Cleveland, OH. Mr. Lanterman provided coating condition assessment supervision for coatings laboratory testing, development of a maintenance painting strategy and recommendations, and development of an opinion of probable costs for the maintenance painting of the Denison Harvard Bridge in Cleveland. KTA served as a subconsultant.				
02/20 – 05/20	Louisiana Department of Transportation and Development, Baton Rouge, LA. Mr. Lanterman provided coating condition assessment services, supervision of coatings laboratory testing, and report preparation for the rehabilitation of the coating system on the Jackson Street (Red River) Lift Bridge in Alexandria, LA. KTA served as a subconsultant.				
02/18 – 06/19	Delaware River Port Authority, Camden, NJ. Mr. Lanterman provided coating consulting and project engineering services for a coating condition assessment of the NJ approach spans to the Walt Whitman Bridge in Gloucester, NJ. He performed a coating condition assessment of the spans to develop future maintenance painting strategies. KTA served as a subconsultant.				
03/17 – 05/17	Louisiana Department of Transportation and Development, Baton Rouge, LA. Mr. Lanterman performed a coating condition assessment, supervised coatings laboratory testing, and prepared a report with recommendations for the rehabilitation of the coating system on the US 90 Morgan City Bridge and Nearby Structures in Morgan City, LA. KTA served as a subconsultant.				
02/17 – 03/17	Louisiana Department of Transportation and Development, Baton Rouge, LA. Mr. Lanterman performed a condition assessment of the weathering steel tower and girders on the I-310 Luling Bridge in Luling, LA. He prepared a report detailing the conditions found and providing recommendations for the remediation of the corrosion problems on this bridge. KTA served as a subconsultant.				

	Firm employed by KTA-Tator, Inc.				
	Name	Daniel A. O'Malley		Years of relevant experience with this employer	30
	Title	Environmental Professional		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization			B.S./1993/Wildlife and Fisheries Science		
Active registration number / state / expiration date			AMPP C-3 Supervisor/Competent Person for Deleading of Industrial Structures PA Asbestos Building Inspector (#PA 24 - 23-66152, expiration 10/3/2025)		
Year registered	n/a		Discipline		
Contract role(s) / brief description of responsibilities			Environmental Professional – Scope Item 1.2 (Sampling) / hazardous waste handling		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
06/25 – Present	Pennsylvania Department of Transportation, Harrisburg, PA. Mr. O'Malley is providing heavy metals testing and is developing hazardous waste handling recommendations/specifications for the rehabilitation of the coating system on the Fort Duquesne Bridge in Pittsburgh, PA. KTA is a subconsultant to another engineering firm.				
06/25 – 07/25	Niagara Falls Bridge Commission, Lewiston, NY. Mr. O'Malley provided ambient air monitoring analysis and pre- and post-project soil sampling analysis services during the rehabilitation of the Whirlpool Rapids Bridge. These services included sample collection, supervision of laboratory analysis, and preparation of reports detailing the results of the testing. KTA was the prime consultant on this project.				
09/24 – 10/24	Collective Efforts, LLC, Pittsburgh, PA. Mr. O'Malley provided asbestos-related services on the West Carson Street Bridge over Chartiers Creek in Pittsburgh, PA. He performed an asbestos survey, removed samples for testing, supervised the laboratory testing, and prepared a report detailing the test results and providing recommendations for the abatement of the hazardous material. KTA is a subconsultant for this project.				
06/24 – 06/24	Collective Efforts, LLC, Pittsburgh, PA. Mr. O'Malley provided asbestos-related services on the Calera Street Bridge. He collected asbestos samples for testing, supervised the laboratory testing, and prepared a report detailing the test results and providing recommendations for the abatement of the hazardous material. KTA is a subconsultant for this project.				
06/24 – 06/24	Collective Efforts, LLC, Pittsburgh, PA. Mr. O'Malley provided asbestos-related services on the Corley Avenue Bridge. He collected asbestos samples for testing, supervised the laboratory testing, and prepared a report detailing the test results and providing recommendations for the abatement of the hazardous material. KTA is a subconsultant for this project.				
06/24 – 06/24	Collective Efforts, LLC, Pittsburgh, PA. Mr. O'Malley provided asbestos-related services on the Maple Avenue Bridge. He collected asbestos samples for testing, supervised the laboratory testing, and prepared a report detailing the test results and providing recommendations for the abatement of the hazardous material. KTA is a subconsultant for this project.				
02/24 – 03/24	Collective Efforts, LLC, Pittsburgh, PA. Mr. O'Malley provided asbestos-related services on the Campbell's Run Road third-lane widening project. He collected asbestos samples for testing, supervised the laboratory testing, and prepared a report detailing the test results and providing recommendations for the abatement of the hazardous material. Following completion of the sampling, he prepared asbestos abatement Special Provisions for the project. KTA is a subconsultant for this project.				

	Firm employed by Bridge Diagnostics Inc. (BDI)				
	Name	Brice Carpenter		Years of relevant experience with this employer	16
	Title	Senior Engineer		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S., Civil Engineering, May 2007 M.S., Civil Engineering, May 2009			
Active registration number / state / expiration date		PE.0039341 / LA / 03/31/2027			
Year registered	2014	Discipline	Civil Engineering		
Contract role(s) / brief description of responsibilities		Instrumentation / Field Based Evaluation			
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
07/09 – Present	<i>Beginning work for BDI in July 2009, Mr. Carpenter now serves as a senior engineer, engineering lead, and subject matter expert on instrumentation, live-load testing, and data-driven structural evaluation. Mr. Carpenter has been involved with the non-destructive testing and evaluation of hundreds of structures including bridges, buildings, and hydro-structures such as lock gates and spill gates. His involvement in these projects included monitoring/load-test design, planning and implementation; provision and installation of instrumentation and data acquisition systems, data processing and review; field-verified finite-element (FE) analysis; various other evaluation types; and reporting. Brice is currently a licensed professional engineer in six states and has performed complete structural analyses and load ratings using a variety of design codes such as AASHTO (ASD, LFD, LRFD), Canadian (CAN/CSA), Australian Standard, KSA Highway Design, and AREMA. Mr. Carpenter has been involved in many projects at BDI where NDT-E information was used to enhance the analysis portion of the project. This includes, but is not limited to, interpretation and evaluation of NDT-E data and results to formulate assessments of structures.</i>				
10/24 - Ongoing	Multi-Phase Field-Verified Evaluation of the Bayou Ramos Bridges - Louisiana Department of Transportation and Development / Morgan City The Bayou Ramos bridges are currently load posted due to deterioration present along many of the prestressed concrete girder ends. To reevaluate these structures' current live-load capacity, BDI was contracted to provide a multi-phase evaluation. This evaluation included an initial load rating evaluation where multiple strut-and-tie method (STM) procedures were considered and evaluated, a diagnostic load test-based evaluation used to validate both structural behavior and STM capacity assumptions, and a monitoring program set to provide crucial information on the current activity level of the observed deterioration. Brice Carpenter served as project engineer responsible for testing/monitoring plan development and application, evaluation team management, and QA/QC of various project tasks.				
07/24-02/25	Refined Load Rating of Falmouth Bridge for Emergency Repair Response - Virginia Department of Transportation/ Fredericksburg District Inspections on the Falmouth Bridge carrying Cambridge St. (US-1) over the Rappahannock River in Falmouth, VA showed significant advancement of corrosion of steel members, especially floorbeams and beam/girder ends near deck expansion joints. BDI performed diagnostic load testing and used the accumulated data to calibrate a finite-element model of the bridge for use in a load rating evaluation. Load rating results indicated that the deterioration of the girders and floorbeams resulted in significantly deficient ratings for these members. BDI's assessment informed emergency repairs for this structure. Mr. Carpenter served as project engineer responsible for overseeing the testing plan design, development and implementation, field-verified finite element modeling, load rating, and reporting.				
01/25 – 02/25	Bayou La Loutre Bridge Balance Testing- CEC As part of CEC's rehabilitation of this vertical lift bridge in Yscloskey, LA, BDI provided bridge balance testing services. This evaluation was performed by installing torque sensors attached to the operating shafts and using the collected response data to compute balance criteria for the structure. Brice served as the project engineer, responsible for client coordination, design and implementation of instrumentation plans, data processing and assessment, balance calculations, and reporting.				

01/24-03/24	Load Test & Field-Verified Load Ratings for CFRP Retrofit Bridge - VDOT Fredericksburg District As part of the structure's repair plan, the condition of this historic reinforced concrete T-beam bridge was assessed following a CFRP retrofit. BDI was contracted to perform diagnostic load testing and subsequent field-verified load rating as part of the approval process for the repair strategy utilized. Submittals included load testing and rating reports presenting the collected data and providing results of the evaluation. Brice Carpenter served as lead analysis and load rating engineer for this project, responsible for instrumentation and testing plan design and implementation, field-verified finite-element modeling, load rating calculations, and reporting.
10/21-05/22	Load Test and Field-Verified Load Ratings of 10 Structures, LA - LADOTD/Forte & Tablada BDI performed refined load ratings of ten structures based on diagnostic load testing of each structure. The evaluated structures ranged from short-span reinforced concrete slabs to culverts of various types with minimal fill depths. In all cases, the bridges were selected for refined analysis based on their inability to meet posting requirements using more standard evaluation techniques. BDI's approach served to validate structure response characteristics in an effort to increase or remove posting requirements. Mr. Carpenter was the lead analysis engineer for the project and provided instrumentation plan design, finite-element model calibration and analysis, load rating calculations, and related reporting.
04/21-05/21	Bayou Teche Pier Testing, LA - LADOTD As part of a Forte and Tablada DOTD complex inspection task order, BDI assisted the inspection team quantify movement observed by their team in the center pier of this swing bridge during operation. Rotation and displacement of the pier were measured during bridge openings to access this inspection finding. Mr. Carpenter was the project engineer responsible for testing plan development, installation of instrumentation and data acquisition, assessment of data quality during testing procedures, analysis and interpretation of accumulated data, and report generation.
07/20-01/21	LA507 Over I-20 ABC Span Move Monitoring - JB James Construction LLC During the replacement of this bridge's superstructure, accelerated bridge construction was utilized where spans were cast nearby and moved into place during short outages. BDI provided monitoring services during the span moves. Mr. Carpenter was a field/analysis engineer responsible for installation of instrumentation and data acquisition, data collection during span move operations, on-site data analysis and interpretation, data processing and reporting.

	Firm employed by Bridge Diagnostics Inc. (BDI)			
	Name	Brett Commander	Years of relevant experience with this employer	35
	Title	Vice President / Principal	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization		BS / 1986 / Civil Engineering MS / 1989 / Structural Engineering		
Active registration number / state / expiration date		P.E. 35864 / LA / 3/31/27		
Year registered	2010	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		Principal Engineer / Instrumentation and NDE Subject Matter Expert		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
10/89 – Present	<i>Mr. Commander is a co-founder of BDI and has led the engineering team for more than 32 years. He started his engineering career developing software and analytical methods for realistic assessment of structural performance, particularly dealing with load distribution of various bridge types and understanding loading applied to bridges. All BDI's modeling procedures have been compared with and calibrated to actual response measurements during live-load tests and structural health monitoring applications. Mr. Commander's experience with vehicle load considerations includes Bridge Weigh-in-Motion research and numerous super-heavy load tests and permit load ratings on more than 500 highway and railway bridges using a variety of design codes such as AASHTO, LADOTD BDEM, and many state-specific codes including Louisiana specifications. Mr. Commander now leads a team of engineers to accurately assess bridge performance through instrumentation and data-driven methods. He is currently a licensed professional engineer in 30 states (including Louisiana), primarily since heavy permit truck routes typically cross state lines. Mr. Commander has also designed/overseen capacity testing projects of concrete and steel structures using various NDE techniques and has implemented hundreds of structural monitoring systems.</i>			
01/23 - Ongoing	United States Army Corps of Engineers, Instrumentation and Monitoring IDIQ - US Army Corps of Engineers, Walla Walla District Brett serves as the Principal-in-Charge responsible for instrumentation, structural testing, and structural health monitoring of mechanical and structural systems at several dams in the northwest region. Mr. Commander's role is to address issues presented by USACE project personnel and develop instrumentation methods that best answer complex problems regarding the condition and behavior of structural systems. He manages BDI engineers in the design and implementation of testing and monitoring programs to achieve this goal. This IDIQ \$7M/5-year contract is available to all districts in the northwest region.			
02/23 - Ongoing	Virginia DOT Statewide Instrumentation and Monitoring On-Call - Virginia Department of Transportation (VDOT) As Subject Matter Expert in the areas of instrumentation, structural testing, and monitoring for the duration of this contract, Mr. Commander's role is to develop monitoring and quality control plans to address specific structural concerns on bridges, tunnels, and ancillary systems. This includes developing monitoring scopes, provisioning instrumentation and data acquisition, and overseeing teams of engineers and technicians to install and maintain monitoring systems. Various monitoring methods and structural evaluation techniques are implemented, from Automated Total Stations to strain gage installation and load testing to geotechnical monitoring systems. The current IDIQ is a \$7M per year contract for up to four years. BDI held the previous contract 2017-2022, which was a \$3 million two-year contract with two renewable terms.			
07/22-09/22	Nondestructive Evaluation of the Eight (8) USDA Forest Service Bridges, MT and ID - USDA Forest Service / Great West Engineering BDI performed nondestructive evaluation (NDE) of eight bridges around Missoula, Montana, and northeastern Idaho. These structures are owned and managed by the National Forest Service and are a combination of reinforced concrete slabs, prestressed concrete slabs, prestressed double tees, and concrete arches. Due to the lack of available as-built drawings, various non-destructive and minimally destructive techniques were utilized to determine critical information and calculate load ratings. Techniques included ground penetrating radar (GPR), Ultrasonic Shear Wave Tomography (USWT), and			

	removal of concrete cover at selected locations to assess bar/strand size, shape, and cover depth. The collected data helped determine information such as reinforcing steel and prestressing strand location, orientation, size, shape, spacing, and cover depths at each bridge. Overall geometric information such as span length, width, and member dimensions were also obtained and used to prepare a report and develop CAD drawings for each structure. Great West Engineering used this information to calculate load ratings for each structure. Mr. Commander provided PE Review and Sealing of all deliverables.
10/21-05/22	Load Test and Field-Verified Load Ratings of 10 Structures, LA - Louisiana Department of Transportation and Development (LADOTD)/Forte & Tablada BDI performed refined load ratings of ten structures based on diagnostic load testing of each structure. The evaluated structures ranged from short-span reinforced concrete slabs to culverts of various types with minimal fill depths. In all cases, the bridges were selected for refined analysis based on their inability to meet posting requirements using more standard evaluation techniques. BDI's approach served to validate structure response characteristics in an effort to increase or remove posting requirements. Load rating calculations were performed within the requirements of LADOTD and AASHTO, and load rating reports meeting LADOTD requirements were submitted for each structure. Mr. Commander was Principal Engineer for the project and provided PE Review of all deliverables.
11/12-9/22	US-90 Bayou Ramos Bridge Load Testing and Monitoring, LA - Louisiana Department of Transportation and Development (LADOTD) Due to unexpected cracking in PS concrete AASHTO beams, BDI performed load tests to determine the cause and effect of cracks in continuous multi-span prestressed concrete girders. Field-verified load ratings were also calculated according to LADOTD specifications, based on a finite-element model calibrated using the collected testing data. After the completion of the initial evaluation, BDI designed and installed monitoring systems on two sections of the structure to monitor its condition. BDI has maintained the structural health monitoring system throughout the project duration, and data collection is still ongoing. As a technical advisor/principal engineer, Mr. Commander oversaw live-load and thermal load monitoring that was performed during and after repairs to evaluate the performance of the retrofit.
01/17 – 1/22	Retainer Contract for Testing Unknown Foundations Statewide (DOTD Contract No. 4400009224)- Louisiana Department of Transportation and Development (LADOTD) Mr. Commander was the principal investigator for NDT-E services to determine the unknown foundations of 1,857 piles in Louisiana. The project utilized multiple methods of NDT-E, including ultra-seismic testing, parallel seismic survey, sonic echo/impulse response, and guided wave. Thousands of piles have been tested to determine the embedded depth for subsequent NBIS 113 scour evaluation and reporting. BDI also assisted LADOTD in FHWA reporting these items by uploading all reports into AssetWise.

	Firm employed by Bridge Diagnostics Inc.(BDI)			Page 118 of 264
	Name	Steven M Fall Jr., PE		Years of relevant experience with this employer
	Title	Project Manager		Years of relevant experience with other employer(s)
Degree(s) / Years / Specialization			BS / 2019 / Civil Engineering	
Active registration number / state / expiration date			PE.0048637 / LA / 09/30/2026	
Year registered	2024	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities			Project Manager	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
05/18 - Present	General Experience – Beginning work for BDI in May of 2019, Mr. Fall has spent more than 6 years in the private sectors in both non-destructive testing and evaluation and routine infrastructure inspection and monitoring and is the current office manager of the Louisiana office. Mr. Fall has been involved with non-destructive testing and evaluation of hundreds of structures including bridges, buildings, and hydro-structures such as lock gates and spill gates. His involvement in these projects included project management, planning, implementation, installation of instrumentation, testing, data processing, data review, and reporting. Previously, Mr. Fall worked with HNTB inc. working in the transportation and civil department performing inspections of substructures and bridges on various jobs. He is a member of ASCE and ACI in the Louisiana chapter. Mr. Fall is a certified Professional Engineer, SPRAT L1 ropes access technician, ASNT Level I GPR inspector, and Team Lead under FHWA guidelines for routine inspections. He is also a certified traffic control supervisor, traffic control technician, and flagger in the state of Louisiana. He also has worked with various NDE methods for fracture critical techniques including but not limited to Magnetic Particle Testing, Ultrasonic Testing (UT), and Dye Penetrant Testing. He graduated from the University of New Orleans with a bachelor's degree in civil engineering.			
05/23 – Present	Retainer Contract for Non-Destructive Evaluation of Statewide Structures (DOTD Contract 4400025002) Louisiana Department of Transportation awarded BDI with the retainer contract for Non-Destructive Evaluation of Statewide Structures. This IDIQ has 8 Task Orders awarded and will continue until 2025. These task orders include but are not limited steel inspection using Ultrasonic testing and Magnetic Particle Testing; deck evaluations via non-destructive testing methods including SoundAR, Ground Penetrating Radar, Infrared Thermography, and High Resolution Imaging; material sampling using coring; NHI routine and fracture critical inspections; and emergency response efforts. Mr. Fall serves as the project manager for this contract and is responsible for the testing plan development and application, team management, and QA/QC of various project tasks.			
11/23 – 12/23	Paris Road Emergency Bridge Inspection in Chalmette, LA After noting a critical finding in a routine inspection on bridge recall 001621 by LADOTD on Paris Rd., BDI was called to perform an emergency in-depth inspection on the underside of the structure along with an NDE of the deck. The inspection results lead to repairs on the bridge and the reopening of the structure. Mr. Fall was the inspection lead on this project for both the NBIS emergency inspection and the Non-destructive testing and evaluation of the structure. He was also responsible for the project management and reporting on the structure.			
01/21 – 05/23	Task Orders for Retainer Contract for Non-Destructive Evaluation of Statewide Structures (DOTD Contract 4400017163) Louisiana Department of Transportation awarded BDI with the retainer contract for Non-Destructive Evaluation of Statewide Structures. This IDIQ had 13 Task Orders awarded and lasted until 2023. These task orders include but are not limited steel inspection using Ultrasonic testing and Magnetic Particle Testing; deck evaluations via non-destructive testing methods including SoundAR, Ground Penetrating Radar, Infrared Thermography, and High Resolution Imaging; material sampling using coring; NHI routine and fracture critical inspections; and emergency response efforts. Mr. Fall served as a staff engineer for this project and was responsible for the testing plan development and application, team management, and field application of the various project tasks.			

06/2022-06/2022, 06/2023-06/2023	Counterweight Balance Testing of the Seabrook Bascule Bridge (Port of New Orleans) in New Orleans, LA This bridge is a Strauss double heel-trunnion bascule bridge that carries St. Claude Avenue over the Industrial Canal. It is subject to hurricane winds and salt water and therefore has extreme corrosion and operational issues. During an inspection, the counterweight-to-span link bushings were found to be broken and falling out of the bearing hub. BDI was subcontracted by HNTB to measure force and moment in the truss link member and evaluate the span balance and operational friction. Operational test results showed high levels of friction and asymmetry in both the friction and lifting torque. Tests were initially performed to identify operational issues and again after bushings were replaced and drive torque imbalance conditions were addressed. BDI's instrumentation and data analysis was essential to identifying and solving the operational problems. The primary relevance of this project is identification and quantification of operational performance of bascule bridges.
07/2019 – 01/20	Counterweight Balance and Friction Assessment of the St. Claude Bridge (LADOTD) in New Orleans, LA BDI performed a counterweight Balance and friction assessment of the St. Claude Bridge to assist LADOTD to bring their bridge into lifting specifications and to determine the friction in each member during lifts. Mr. Fall installed all gages on the shafts and some gages on the steel members of the bridge, performed all testing, and helped report on these findings to help LADOTD balance the counterweight in the bridge and analyze the friction in each member. Mr. Fall was a team member responsible for field instrumentation and operational testing.
04/21 – 05/21	LA 324 over Bayou Teche As part of Gresham Smith's advanced inspection team, BDI was contracted to perform short-term testing on the pivot pier of this swing bridge. During initial inspection, the pivot pier was observed to significantly rotate/translate during the opening operation. BDI's testing was performed as part of an emergency response to the inspection findings and consisted of taking laser displacement measurements of the pier during operational swings. Through this testing, BDI verified that up to 6" of movement was occurring at the end of the opening operation and provided short- and long-term recommendations. Mr. Fall was a team member responsible for team coordination, field instrumentation and testing, data processing and review, and reporting.

	Firm employed by Bridge Diagnostics Inc. (BDI)				
	Name	Jesse Sipple		Years of relevant experience with this employer	11
	Title	Vice President, Services Division Manager		Years of relevant experience with other employer(s)	7
Degree(s) / Years / Specialization		PhD / 2013 / Civil Engineering MS / 2008 / Civil Engineering BS / 2007 / Civil Engineering			
Active registration number / state / expiration date		41028 / LA / 03/31/2027 50709 / CO / 10/31/2025 0402059651 / VA / 11/30/2026 84285 / MT / 6/30/2026			
Year registered	2016	Discipline	Civil Engineering		
Contract role(s) / brief description of responsibilities		Services Program Manager			
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
05/07-Present	<i>Dr. Sipple has over 18 years of experience in instrumentation, diagnostic testing, structural health monitoring, and analysis of heavy civil structures, with a focus on bridges. Dr. Sipple's experience includes planning and executing field installations and testing for large, complex projects; project management; development of new methods for monitoring and data processing; and performing detailed analysis and reporting. Dr. Sipple is a licensed Professional Engineer in several states, sits on a variety of technical committees, and was the former chair of the ASCE SEI Methods of Monitoring Structural Performance Committee. Dr. Sipple is the Engineering Division Manager at BDI. His role includes overseeing the testing, monitoring, and engineering groups, including oversight in both the operation of the division as well as technical oversight of active projects. Dr. Sipple's research expertise is in dynamic testing of bridges for the purpose of parameter estimation through finite element model updating. Dr. Sipple's research on parameter estimation for model calibration was using both static and dynamic data to update finite element models based on field measured structural response data.</i>				
07/18-08/18 & 07/23-08/23	Bear River Bridge Dynamic Testing - Stantec BDI was contracted by Stantec to perform dynamic tests on the Bear River Siphon Bridge near Auburn, CA. The bridge is a single span suspension bridge carrying a water supply pipe. The testing focused on measuring vibration responses across the bridge to determine the dynamic response of the entire structure. The overall goal of these tests was to validate the predicted structural response. Additionally, cable dynamic testing was performed to determine the in-situ tensile forces in each hanger cable and stay cable. Dr. Sipple performed quality control on the analysis and reporting.				
2022 - Present	West Seattle High Bridge Investigation and Monitoring, WA - Seattle Department of Transportation (SDOT) BDI was contracted by Seattle DOT to provide a nondestructive testing and structural health monitoring program to help evaluate the performance of the structure during the first phase of retrofitted internal post-tensioning. The monitoring program helped the Seattle DOT make decisions and resulted in the next phase of strengthening to open the bridge by 2022. Dr. Sipple is the project manager and monitoring engineer in charge of BDI's emergency response participation, which included running several drills with mock alarm scenarios, developed by Dr. Sipple, with the project team.				
06/20 - Present	Virgin River Gorge Testing & Monitoring, AZ - Burgess & Niple BDI was contracted by Burgess & Niple under ADOT for the Accelerated Innovation Deployment grant as part of FHWA's Technology and Innovation Deployment Program to perform load testing and structural health monitoring on three bridges along I-15 in the Virgin River Gorge. Dr. Sipple is the project manager for this project's various phases, including the live load testing portion and the long-term monitoring. Dr. Sipple is also a monitoring engineer on this project and is in charge of the monthly reporting, which includes rain flow data analysis, reporting on changes in structural response throughout the project, and system alarm response.				

03/20 - Present	Ballard Bridge Monitoring, WA - BNSF Railway Dr. Sipple was the Project Quality Control Engineer responsible for QC of the trunnion friction and operating torque monitoring system installed on this double trunnion Strauss bascule bridge. BDI installed strain gages, shaft torque gages, and tiltmeters to monitor changes in trunnion friction, system friction, and shaft torque over a 2-year monitoring period. Jesse managed the analysis team that set up automated computation and reporting for trunnion friction, system friction, and shaft torque.
07/20-01/21	LA507 Over I-20 ABC Span Move Monitoring, LA - JB James Construction LLC During the replacement of this bridge, accelerated bridge construction was utilized where spans were cast nearby and moved into place during short outages. Dr. Sipple was a field/analysis engineer responsible for monitoring plan implementation, instrumentation, monitoring during span moves, on-site data interpretation, and data processing and reporting.
02/20 – 11/20	Live Load Testing and Field-Verified Load Rating of 16 Bridges, VA - Virginia Department of Transportation BDI provided load testing and field-verified load rating of 16 structures in the Fredericksburg and Richmond districts of VDOT. BDI was responsible for the design of load testing requirements, development of instrumentation plans, execution of fieldwork and load testing, data analysis, finite element (FE) model creation and calibration, and eventual load rating per VDOT and AASHTO requirements. Dr. Sipple acted as the quality control manager for this project and all related tasks.
6/19-1/20	St. Claude Bascule Bridge Balancing - HNTB Instrumentation tasks were performed when investigating a bearing failure on the span to counterweight link and whether this failure was connected to an imbalance between the counterweight and lift span. BDI performed strain gage testing on the link frame and counterweight balance procedures. Dr. Sipple was the Project Quality Control Engineer responsible for QC of counterweight/span balance, friction calculations, and structural performance evaluation on this double trunnion Strauss bascule bridge.

	Firm employed by Bridge Diagnostics, Inc. (BDI)				
	Name	Charles Young, PE		Years of relevant experience with this employer	7
	Title	Vice President		Years of relevant experience with other employer(s)	6
Degree(s) / Years / Specialization		MS / 2017 / Civil Engineering BS / 2012 / Civil Engineering			
Active registration number / state / expiration date		PE.0042773 / LA / 03/31/2027 PE.0066578 / CO / 10/31/2025 PE.0402065368 / VA / 06/30/2026			
Year registered	2018	Discipline	Civil Engineering		
Contract role(s) / brief description of responsibilities		Project Manager, Subject Matter Expert			
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).				
06/12–Present	<i>Mr. Young has 13 years of experience in the fields of nondestructive evaluation and testing (NDE/NDT), structural monitoring, and inspection/evaluation of civil infrastructure. Mr. Young is responsible for program management, project management, analysis, and field services related to inspection and NDE/NDT of civil infrastructure. Mr. Young is certified ASNT Level II GPR and IR Inspector, SPRAT Level I certified, is a registered Part 107 UAV Pilot, and holds multiple certifications from NHI including FHWA-NHI-130055 Safety Inspection of In-Service Bridges (2014), FHWA-NHI-130053 Bridge Inspection Refresher Training (2021), and FHWA-NHI-420018 Instructor Development Course (2022). He is a registered Professional Engineer in multiple states including Louisiana.</i>				
12/22–Present	IDIQ Contract for Nondestructive Evaluation of Structures Statewide (DOTD Contract No. 4400025002) Mr. Young is the Project Manager for statewide NDE of structures for DOTD under this contract. Scope items include testing of bridge decks, concrete substructures, steel elements such as welds and pin and hanger assemblies, unknown foundations, tunnels, culverts, and other highway transportation infrastructure. Mr. Young assists DOTD and the project team with successfully implementing NDE and inspection technologies for application and best methods for analysis and reporting of findings into DOTD's AssetWise.				
05/23–Present	Twin Spans and Six Mile Bridge Inspection and NDE The objective of this project is to perform a comprehensive inspection and NDE of the reinforced concrete bridge decks of the Twin Spans and Six Mile Bridges in Louisiana. Also included are supplemental inspection access techniques including unmanned aerial systems (UAS). Nondestructive evaluation includes a multi-technology bridge deck assessment including Deck Acoustic Response, Ground Penetrating Radar, Infrared Thermography, and High-Resolution Imagery. Mr. Young acted as the Project Manager. This work is being performed under LADOTD contract 4400025002.				
01/19–12/22	IDIQ Contract for Nondestructive Evaluation of Structures Statewide (DOTD Contract No. 4400015262) Mr. Young is the Project Manager for statewide NDE of structures for DOTD under this contract. Scope items include testing of bridge decks, concrete substructures, steel elements such as welds and pin and hanger assemblies, unknown foundations, tunnels, culverts, and other highway transportation infrastructure. Mr. Young assists DOTD and the project team with successfully implementing NDE and inspection technologies for application and best methods for analysis and reporting of findings into DOTD's AssetWise.				
07/21–10/22	I-10 Over Atchafalaya Basin Inspection and NDE The objective of this project is to perform an NHI routine and fracture critical (NSTM) inspection of the bridge carrying I-10 over the Atchafalaya Basin between New Baton Rouge and Lafayette along with targeted NDE techniques at various critical portions of the structure. Also included are supplemental inspection access techniques including unmanned aerial systems (UAS). Nondestructive evaluation includes a multi-technology bridge deck assessment including Deck Acoustic Response, Ground Penetrating Radar, Infrared Thermography, and High-Resolution Imagery. Mr. Young acted as the Project Manager. This work was performed under LADOTD contract 4400015262.				

10/20–09/22	Bonnet Carre Spillway Inspection and Nondestructive Evaluation, LA This project involved an NHI routine and fracture critical (NSTM) inspection of the Bonnet Carre Spillway Bridge and targeted NDE techniques at various critical portions of the structure. Two cycles of Routine and NSTM inspections were conducted for this structure. This work was performed under an IDIQ Contract for Non-destructive Evaluation of Structures for DOTD. Also included were supplemental inspection access techniques including unmanned aerial systems (UAS). Nondestructive evaluation includes a multi-technology bridge deck assessment including Deck Acoustic Response, Ground Penetrating Radar, Infrared Thermography, and High-Resolution Imagery. Mr. Young acted as the Project Manager. This work was performed under LADOTD contract 4400015262.
08/19–07/20	NDE of City Park Lake Bridge LA Mr. Young was the project manager for the NDE of the City Park Lake Bridge in Baton Rouge, LA. This project included a routine inspection of the structure, along with NDE technologies including ground penetrating radar (GPR), deck acoustic response (DAR), infrared thermography (IR), and high-resolution video (HRV). The remote inspection was performed on the substructure utilizing visual inspection and IR. This work was performed under LADOTD contract 4400015262.

	Firm employed by Providence Engineering and Environmental Group LLC				
	Name	Elizabeth Hunt, RPA		Years of relevant experience with this employer	1
	Title	Principal Investigator		Years of relevant experience with other employer(s)	13
Degree(s) / Years / Specialization		M.A. / Anthropology / 2017 B.A. / Anthropology / 2012			
Active registration number / state / expiration date		Register of Professional Archaeologist 17020			
Year registered	2017	Discipline	Archaeologist		
Contract role(s) / brief description of responsibilities		Archaeologist - Meets MPR 11 and 12			
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
(2021)	Project Director: DOTD, Cultural Resources Survey of 2 acres for the proposed Bonita Bridge replacement site, Morehouse Parish, LA. Ms. Hunt served as the Project Director for the survey of approximately two acres in Morehouse Parish, Louisiana. The survey was conducted for the DOTD, on behalf of the FHWA. The survey was conducted for the proposed replacement site of the Union Pacific Railroad Overpass Bridge. Prior to initiation of fieldwork, Ms. Hunt conducted background and archival research including previously conducted archaeological investigations and previously recorded archaeological sites and historic structures in the region. No archaeological resources were recorded. Given the lack of cultural resources recorded during the survey, a negative findings report was produced for submittal to the Louisiana SHPO as part of consultation under Section 106 of the National Historic Preservation Act (NHPA). Ms. Hunt served as a co-author for this technical report.				
(2023)	Project Manager: Louisiana Department of Transportation and Development (DOTD), Cultural Resources Survey of 11 acres for the proposed I-49 South, Route US 90 expansion location at Verot School Road, Lafayette Parish, LA. Ms. Hunt served as the Principal Investigator for the survey of approximately 11 acres in Lafayette Parish, Louisiana. The survey was conducted for the DOTD, on behalf of the Federal Highway Administration (FHWA). The survey was conducted for the proposed expansion of I-49 South, Route US 90 at the segment of Verot School Road. Prior to initiation of fieldwork, Ms. Hunt contacted landowners for permission to survey and conducted background and archival research including previously conducted archaeological investigations and previously recorded archaeological sites and historic structures in the region. Ms. Hunt wrote and prepared the Phase I Cultural Resources Report and provided the document to DOTD for comment before submitting to SHPO for concurrence.				
(2024)	Principal Investigator: Gulf South Pipeline Company, LLC Phase I Cultural Resources Survey of the Index 301-4 Replacement Project, Bogalusa, Washington Parish, LA. Ms. Hunt served as the Principal Investigator for the proposed PN 15340 Index 301-4 Replacement Project in Bogalusa, Washington Parish, Louisiana. The proposed APE measured approximately 61 acres (24.5 hectares). The Phase I Cultural Resources Survey consisted of a pedestrian survey and the of 142 shovel test pits across the APE. Additionally, an aboveground resources survey was completed. The survey resulted in the relocation and update of one previously recorded site, identification of one isolated find, and examination of three aboveground resources adjacent to the APE. Based on the findings it was suggested that site 16WA98 was potentially eligible for the NRHP and should be avoided. The client then designed their workplan to have a 50-foot avoidance buffer around the site 16WA98 to avoid any disturbance to the site. Neither the isolated find nor the aboveground resources were recommended eligible for the NRHP. No additional archaeological or aboveground resource investigations are recommended for the proposed project. The report was submitted to the SHPO for review and concurrence.				
(04/23-05/24)	Principal Investigator: Cornerstone Chemical Company- UBE C1 Chemicals America, INC., Archaeological and Historical Consultation Letter, Jefferson Parish, LA Provided Cornerstone Chemical Company – UBE C1 Chemicals America, Inc., with a letter that initiated consultation to identify historic properties for proposed construction in Jefferson Parish, Louisiana. This letter was submitted to the State Historic Preservation Office (SHPO) in pursuance of Section 106 and the lead federal agency, the United States Army Corps of Engineering (USACE). This letter provided information on the proposed project area, proposed activities, previously conducted investigations and recorded cultural resources within and adjacent to the project area and requested assistance from SHPO for concurrence.				

(03/24-04/25)	Principal Investigator: Phase I Cultural Resources Survey of the Groom Road/Brushy Bayou Storm System Project, East Baton Rouge Parish, LA Ms. Hunt served as Principal Investigator for a Phase I cultural resource survey of approximately 4.8 acres in Baker, East Baton Rouge Parish, Louisiana. The survey consisted of 84 STPs. Three positive shovel tests were determined to be isolated finds and are not recommended eligible for the NRHP. No newly recorded archaeological sites or previously recorded sites were identified during the investigation. TerraXplorations Inc. was subcontracted to conduct the aboveground resources survey for the indirect APE. The aboveground resources survey identified one previously recorded LHRI resource, one NRHP-listed property, and 29 newly recorded LHRI aboveground resources. Based on results of the current survey, one previously recorded NRHP-listed property, the Baker High School Auditorium (13001125), remains eligible for listing in the NRHP under Criterion C based on the structure's design and construction which includes a prominent and unique exterior. Ms. Hunt served as a co-author for a technical report that was submitted to the LA DOA, SHPO as part of consultation under Section 106 of NHPA.
(01/25-04/25)	Principal Investigator: Negative Findings: Phase I Cultural Resources Survey of the PN 16413 BEP-140 Line Lowering Project, Calcasieu Parish, LA Ms. Hunt served as the Principal Investigator for the Phase I cultural resources of approximately 14 acres across three project areas. The Phase I cultural resource survey consisted of a pedestrian survey and the excavation of 53 shovel test pits. Based on survey results, no cultural material or archaeological sites were encountered. No aboveground resources 50 years or older were identified using the Louisiana Division of Archaeology (LA DOA) cultural resources online database, historic aerials, topographic maps, or during fieldwork. This will result in a report submitted to SHPO recommending no additional archaeological or aboveground resource investigations for the proposed project.
ELIZABETH HUNT, RPA has over 13 years of experience in Cultural Resource Management (CRM) and has experience working and consulting with governmental agencies at the local, state, and federal levels. She has participated in and supervised Phase I archaeological surveys, Phase II National Register Eligibility testing, Phase III data recovery excavations, and construction monitoring in Alabama, Arkansas, Arizona, California, Georgia, Louisiana, Mississippi, New Jersey, New York, North Carolina, and Texas. She has experience in both prehistoric and historic site evaluations and has performed analyses on both prehistoric and historic cultural material. Her areas of expertise include Section 106 and 110 compliance of the NHPA and prehistoric archaeology of the Lower Mississippi Valley as well as ceramic analyses.	

	Firm employed by Providence Engineering and Environmental Group LLC				
	Name	Christine Halling, RPA		Years of relevant experience with this employer	1
	Title	Senior Archaeologist		Years of relevant experience with other employer(s)	15
Degree(s) / Years / Specialization		M.S. / Human Biology / 2013 B.S. / Anthropology / 2006			
Active registration number / state / expiration date		Register of Professional Archaeologist 34906365			
Year registered	2016	Discipline	Archaeologist		
Contract role(s) / brief description of responsibilities		Archaeologist -Meets MPR 11			
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
(03/24-Ongoing)	Senior Archaeologist: Phase I Cultural Resources Survey of the Groom Road/Brushy Bayou Storm System Project, East Baton Rouge Parish, Louisiana. Ms. Halling served as Field Director for a Phase I cultural resource survey of approximately 4.8 acres in Baker, East Baton Rouge Parish, Louisiana. The survey consisted of 84 STPs. Three positive shovel tests were determined to be isolated finds and are not recommended eligible for the NRHP. No newly recorded archaeological sites or previously recorded sites were identified during the investigation. TerraXplorations Inc. was subcontracted to conduct the aboveground resources survey for the indirect APE. The aboveground resources survey identified one previously recorded LHRI resource, one NRHP-listed property, and 29 newly recorded LHRI aboveground resources. Based on results of the current survey, one previously recorded NRHP-listed property, the Baker High School Auditorium (13001125), remains eligible for listing in the NRHP under Criterion C based on the structure’s design and construction which includes a prominent and unique exterior. Ms. Halling served as a co-author for a technical report that was submitted to the LA DOA, SHPO as part of consultation under Section 106 of NHPA.				
(02/25- Ongoing)	Senior Archaeologist: Phase I Cultural Resources Survey of the Rapides Primary Health Care Center Project, Avoyelles Parish, Louisiana. Ms. Halling served as Field Director for a Phase I cultural resource survey of approximately 1.09 acres in Bunkie, Avoyelles Parish, Louisiana. The survey consisted of 11 shovel test pits (STPs) and there were no new archaeological sites encountered, and no previously conducted surveys or identified archaeological sites overlapped the Area of Potential Effect (APE). The survey did identify 10 new Louisiana Historic Resource Inventory (LHRI) properties from the circa 1950-60’s (eight residential) and 1970’s (two commercial). Ms. Halling will serve as a co-author for a technical report that will be submitted to the Louisiana Division of Archaeology (LA DOA), State Historic Preservation Officer (SHPO) as part of consultation under Section 106 of the National Historic Preservation Act (NHPA).				
(08/24- Ongoing)	Senior Archaeologist: Phase I Cultural Resources Survey of the PN 15787 NOLA Lit-Index 293 Encroachment Project, St. Bernard Parish, Louisiana. Ms. Halling served as Field Director for a Phase I cultural resource survey of approximately 39.78 acres in Violet, St. Bernard Parish, Louisiana. Based on the survey, no new cultural material or archaeological sites were encountered and the previously recorded archaeological site (16SB123) was not relocated during this survey. No aboveground resources 50 years or older were identified using the LA DOA cultural resources online database, historic aerials, topographic maps, or during fieldwork. Ms. Halling served as a co-author for a technical report that will be submitted to the LA DOA, SHPO as part of consultation under Section 106 of NHPA.				
(01/25- Ongoing)	Senior Archaeologist: Negative Findings: Phase I Cultural Resources Survey of the PN 16413 BEP-140 Line Lowering Project, Calcasieu Parish, Louisiana. Ms. Halling served as Field Director for a Phase I cultural resource survey of approximately 13.9 acres in Iowa, Calcasieu Parish, Louisiana. The survey consisted of 59 pre-plotted STPs. Based on the survey, no cultural material or archaeological sites were encountered. No aboveground resources 50 years or older were identified using the LA DOA cultural resources online database, historic aerials, topographic maps, or				

	during fieldwork. Ms. Halling served as a co-author for a technical report that will be submitted to the LA DOA, SHPO as part of consultation under Section 106 of NHPA.
(03/24- Ongoing)	Senior Archaeologist: Phase I Cultural Resources Survey of the Mile 183 Expansion Project, Ascension Parish, Louisiana. Ms. Halling served as Field Director for a Phase I cultural resource survey of approximately 2.6 acres in Donaldsonville, Ascension Parish, Louisiana, and provided archaeological monitoring for the deep testing survey conducted by a subcontractor. The survey consisted of seven STPs in the APE and deep trenching occurred following shovel testing, conducted via subcontractor TerraXplorations, Inc. and included two trenches within the direct APE. Based on the survey, no new cultural material or archaeological sites were encountered and the previously recorded archaeological site 16AN70 was not relocated during the survey or deep trenching during this project. The aboveground resources survey identified four previously identified historic-age resources within the 1,000-foot visual/indirect APE. None of the previously recorded LHRI properties were recommended eligible for the NRHP. Ms. Halling served as a co-author for a technical report that was submitted to the LA DOA, SHPO as part of consultation under Section 106 of NHPA.
(03/24-12/24)	Senior Archaeologist: Addendum 1: New Additions to the Phase I Cultural Resources Survey of the Youngsville Pipeline Replacement Project, Lafayette Parish, Louisiana. Ms. Halling served as Senior Archaeologist for a Phase I cultural resource survey of approximately 19 acres in Lafayette Parish, Louisiana. The survey consisted of 63 STPs and there were no new archaeological sites encountered, and no previously conducted surveys or identified archaeological sites overlapped the APE. No aboveground resources 50 years or older were identified using the LA DOA cultural resources online database, historic aerials, topographic maps, or during fieldwork. Ms. Halling served as field director and conducted the survey for the client for informational purposes. No report was produced.
CHRISTINE HALLING, RPA has over 16 years of archaeology experience and consultation with governmental agencies at the local, state, and federal levels. She has participated in, and supervised, disaster response projects, cemetery desecration response, and archaeological excavations. She has experience in both prehistoric and historic site evaluations and has performed analyses on both prehistoric and historic cultural material, primarily focused on human remains analyses. Her areas of expertise include compliance with state and federal regulations including Section 106 of the National Historic Preservation Act (NHPA) and the Native American Graves Protection and Repatriation Act (NAGPRA) and human remains analysis of the Middle to Lower Mississippi River Valley.	

	Firm employed by Providence Engineering and Environmental Group LLC			
Name	Morgan Granger, MSHP		Years of relevant experience with this employer	1
Title	Architectural Historian		Years of relevant experience with other employer(s)	9
Degree(s) / Years / Specialization		M.S. / 2017 / Historic Preservation M.A. / 2011 / History of Art and Architectural History		
Active registration number / state / expiration date		N/A		
Year registered	N/A	Discipline	Historian	
Contract role(s) / brief description of responsibilities		Architectural Historian, Meets MPR 13		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
(2025)	Contributor: Pecan Valley Golf Course (Fort Worth, Texas). The project required determination of effects for a proposed bridge replacement in the golf course triggering Section 106 of the NHPA due to USACE involvement in the project. Research determined that the bridge is a significant and contributing resource to a potentially NRHP eligible district. The bridge was a significant and original features of the golf course which was designed by one of the nation’s renowned golf course architects, Ralph Plummer, during his tenure as president of the American Society of Golf Course Architects. USACE and Texas Historical Commission (THC) determined that the current project scope did not encompass the entire golf course and more research would be required to determine that the potential district was present and therefore determined it was not individually eligible for inclusion in the NRHP.			
(2024-2025)	Contributor: Oklahoma Department of Transportation (ODOT) Projects. Various projects supporting ODOT undertakings including the widening of roads, bridge replacements, and creation of new routes or extensions. Projects throughout Roger Mills, Greer, and Beaver Counties have assessed various bridge structures including bridge class culverts for potential project effects and NRHP eligibility in compliance with Section 106 of the NHPA. Many bridges and bridge-class culverts throughout Oklahoma have been previously assessed under several studies and have existing eligibility recommendations established through these reports and programmatic agreements. Many of these projects are still under review by ODOT.			
(2024-2025)	Contributor: Texas Department of Transportation (TxDOT) Projects. Various projects supporting TxDOT undertakings including the widening of roads, bridge replacements, and creation of new routes or extensions. This included drafting of Project Coordination Requests (PCRs) and survey reports. Many of these projects are still under TxDOT or THC, acting as the Texas State Historic Preservation Office, review. Projects such as the Primrose Creek Bridges in Waco are currently under review, however, efforts included assessing project impacts under Section 106 of the National Historic Preservation Act (NHPA). The project included assessment of historic bridges and a concrete lined canal. Primrose Creek has been recommended by staff as eligible for listing in the National Register of Historic Places (NRHP) under Criterion A for its association with the Model Cities Program under the areas of community development, social history, and transportation.			
(2022-2024)	Contributor: Intensive Level Surveys for PennDOT. The intensive surveys were intended to determine eligibility of resources identified during a reconnaissance level survey for the Pennsylvania Department of Transportation (PennDOT). The Section 106 Compliance projects included extensive deed resource coupled with census and agricultural census data to determine resource significance and development eligibility recommendations. Mrs. Granger also completed architectural descriptions for resources surveyed.			
(2022-2024).	Contributor: Reconnaissance and Intensive Level Surveys for TxDOT. The reconnaissance level surveys sought to identify historic resources within the project’s area of potential effect in compliance with Section 106 of the NHPA. During reconnaissance level surveys Mrs. Granger utilized historic maps and aerial imagery to identify resources prior to fieldwork. The intensive surveys were intended to determine National Register of Historic Places (NRHP) eligibility of resources identified during a reconnaissance level survey for the Texas Department of Transportation (TxDOT). The projects often included extensive research, deed research, historic map and aerial image review, and fieldwork to determine what resources were extant.			
(2023).	Contributor: Nice Bridge Replacement – GEC Services In support of an archaeological data recovery project, the project included genealogical research to locate potential descendants associated with human remains identified during a Maryland Transport Authority (MDTA) bridge improvement			

	project. Mrs. Granger utilized online resources to establish a chain of title, then using data provided by archaeological staff, she attempted to identify living ancestors. Ancestry of the family known to inhabit the property during the estimated dates of the remains were traced matrilineally, and no living ancestors were identified through the maternal line. She then traced ancestry through potential paternal relations and the results of the research were provided to MDTA.
(2022).	Author and Surveyor: Historic Resources Survey of Jackson County, Florida. The county-wide survey was funded through the State of Florida utilizing funding from the Emergency Supplemental Historic Preservation Fund in response to Hurricanes Florence, Michael, and Typhoon Yutu. The project included in-depth research, development of a historic context, public outreach, and survey documentation-including completion of FMSF forms-for each historic age resource. The survey identified approximately 8,000 historic age resources. Recommendations were made regarding historic significance and eligibility for inclusion in the NRHP. Mrs. Granger was highly involved in all aspects of the project.
(2022).	Contributor: Rock Creek Park Military Road Trail Feasibility. The project sought to determine feasibility of a proposed trail through Rock Creek Park in Washington, DC. The scope included determinations of significance for historic age resources identified within the area of potential effect. Mrs. Granger was responsible for identifying, assessing, and providing determinations of effects for historic resources within the area of effect. These contributions were provided in the final report.
MORGAN GRANGER is an architectural historian who exceeds the Secretary of the Interior's (SOI) Professional Qualification Standards. She has nine years of practice in Cultural Resource Management (CRM) providing preservation, conservation, and historian services to a variety of clients including governmental agencies at the local, state, and federal levels. Ms. Granger has experience with Section 106 NHPA Compliance, Facilities Conditions Assessments for the Department of Veteran Affairs, design guidelines, documentation projects ranging from hand-drawn measured drawings (up to and including Historic American Building Survey [HABS] level) to three-dimensional laser scanning and modeling and has contributed to several grant funded projects. Additionally, she has participated in architectural/cultural/historic resource surveys and building and cemetery condition assessments throughout the United States, and as a student in Bermuda and Scotland. She has worked in several states including Alabama, Arkansas, California, Colorado, Florida, Georgia, Louisiana, Massachusetts, Mississippi, Montana, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, South Carolina, Texas, Virginia, Washington, and Washington, DC. Mrs. Granger has experience working with local, state, and federal grant projects and is familiar with requirements and procedures of grant funding. Her areas of expertise include determination of effects, Section 106 compliance, architectural/historic/cultural resource surveys, conditions assessments, resource documentation, and cemetery assessments and mapping.	

	Firm employed by Providence Engineering and Environmental Group LLC				
	Name	Chad Turner		Years of relevant experience with this employer	4
	Title	Director Natural Resource & Coastal Services		Years of relevant experience with other employer(s)	12
Degree(s) / Years / Specialization			BS/2008/Biological Sciences		
Active registration number / state / expiration date			Richard Chinn 38-Hour Wetland Delineation Training, N/A, #5680		
Year registered	2009	Discipline	Wetlands		
Contract role(s) / brief description of responsibilities			Environmental Manager, Meets MPR 14		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
(05/09-06/13)	Environmental Impact Specialist: Louisiana Department of Transportation and Development, Environmental Section. Mr. Turner was responsible for NEPA compliance for federal and state transportation projects. His duties included: wetland delineations and reporting; threatened and endangered species surveys and reporting; preparation of in-house Categorical Exclusions and Environmental Assessments; and oversight of third-party NEPA documents and other environmental studies. During his time, Mr. Turner conducted over 100 wetland delineations for a variety of transportation projects, including on- and off-system bridge replacements, road realignments and widenings, and new road construction.				
(01/14-09/14)	Wetland Biologist: Huval & Associates, Inc., East Baton Rouge Parish Multiple Bridge Replacements. On behalf of the City of Baton Rouge/Parish of East Baton Rouge Department of Public Works, conducted wetland delineation and completed Wetland Findings Reports for the Morvant Road (1 and 2), Milldale Road, and Port Hudson Pride Road bridges in East Baton Rouge Parish. For each location, prepared and submitted a Pre-Construction Notification to the USACE, New Orleans District for authorization under Nationwide Permit 12.				
(06/15-09/15)	Project Manager: City of Baton Rouge Parish of East Baton Rouge, Pecue Lane/I-10 Interchange SPN. H.004104 Provided wetland delineation and reporting for construction of an interchange at I-10 and Pecue Lane adding multiple through lanes on Pecue Lane, entrance/exit ramps on eastbound and westbound I-10. Replacement of two-lane Overpass Bridge and Pecue Lane / Wards Creek bridge, extension to Reiger Road with new intersection at Pecue Lane, and related work. Responsibilities included field investigations, preparation of environmental document, map creation in GIS, and GIS environmental impact analysis.				
(02/20-09/23)	Project Manager: City of Baton Rouge Parish of East Baton Rouge, MoveBR Capacity Project. Mr. Turner served as project manager for four MOVEBR transportation projects in East Baton Rouge Parish: Old Hammond Highway Segment 1, Phases A and B (City-Parish Project No. 19-CP-HC-0034); Bluebonnet Boulevard (Perkins Road to Picardy Boulevard) (City-Parish Project No. 19-CP-HC-0034); Highland Road at Siegen Lane Intersection (City-Parish Project No. 20-CP-HC-0004); Sherwood Forest Extension (Greenwell Springs Road to Joor Road) (City-Parish Project No. 20-CP-HC-0014). Service provided included wetland delineations, preparation of Wetland Data Reports/Requests for Jurisdictional Determination, and submittal of Pre-Construction Notifications to the USACE for authorization under Nationwide Permit 12.				
(04/24-10/24)	Project Manager: Morgan Goudeau & Associates, Inc., Eight Off-System Bridge Replacements across Six Projects (H.014986, H.015013, H.015014, H.015015, H.015016, H.015050). Services provided included wetland delineations and Wetland Findings Reports.				

(05/24-12/24)	Wetland Project Manager: Atlas Technical Consultants LLC, MRB South GBR: LA 1 to LA 30 Connector SPN H.013284 Providence provided NEPA, wetlands, Phase I ESA, and public outreach compliance assistance for the proposed new bridge crossing of the Mississippi River in Iberville Parish, LA. Served as the Wetland Project Manager for the 1,716-acre delineation across 3 proposed alignments. Responsibilities included management of five teams of biologists, coordination with Atlas/DOTD for survey access/landowner permissions, primary Technical Review of Wetland Findings Report, and coordination of a site visit with members of Atlas, LA DOTD, and the USACE.
CHAD TURNER has over 16 of natural resource permitting and compliance experience for clients in industrial, commercial, residential, and public sectors. His areas of focus include wetland delineations, analysis, and reporting on 30,000+ acres; U.S. Army Corp of Engineers (USACE) Section 10/404 permitting and compliance assistance (Galveston, Mobile, New Orleans, and Vicksburg Districts); Louisiana Department of Energy and Natural Resources (LDENR), Office of Coastal Management Coastal Use Permitting; NEPA Compliance; Louisiana Department of Wildlife and Fisheries (LDWF) Scenic Rivers System Permitting and Oyster Resource Assessments; U.S. Fish and Wildlife Service (USFWS) Section 7 consultations, State Historic Preservation Office (SHPO) Section 106 consultations; threatened and endangered species surveys and reporting; and USACE wetland mitigation bank assessment, reporting, and monitoring. Mr. Turner also specializes in desktop mapping applications, specifically ArcGIS. His GIS experience includes: field data collection with GPS units using Trimble, SonarWiz, and ArcPad systems; data dictionary creation and implementation; field data post-processing and assimilation; basic desktop mapping; desktop analysis of available reference and field-collected data for various client-requested applications; figure creation for use in regulatory permit applications, public meetings and hearings, resource agency meetings, and site visits; and creation of ArcGIS Online web and mobile applications.	

	Firm employed by Chustz Surveying, LLC				
	Name	James H. Chustz, Jr. PLS		Years of relevant experience with this employer	30
	Title	Principal		Years of relevant experience with other employer(s)	21
Degree(s) / Years / Specialization			Boundary Surveying Classes – LSU / 1983		
Active registration number / state / expiration date			PLS #4657 / Louisiana / 03-31-2026		
Year registered	1992	Discipline	Surveying		
Contract role(s) / brief description of responsibilities			Professional Land Surveyor registered in Louisiana with over 5 years of experience in conducting topographic surveys for DOTD – Meets MPR 10.		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
12/24-03/25	LA 463: Drainage Bridge, Vernon Parish, LADOTD, H.016315.5. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of topographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K				
12/24-03/25	LA 970: Creek Bridge, Pointe Coupee Parish, LADOTD, H.016321.5. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of topographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$46K				
12/24-02/25	LA 3187: Creek Bridge, Evangeline Parish, LADOTD, H.016320.5. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of topographic and control surveys using conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K				
12/24-01/25	LA 1206: Creek Bridge, Rapides Parish, LADOTD, H.016313.5. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of topographic and control surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K				
10/24-8/25	Automated Revetment Surveys on the Mississippi, Atchafalaya, and Red Rivers, LA; MVN Contract W912P8-20-C-0057. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of automated multibeam/side scan and vessel mounted LiDAR surveys for 372 miles on the Mississippi, Atchafalaya, and Red Rivers with crewed and uncrewed vessels using DGPS and GNSS. Deliverables included 2x2 ft gridded XYZ ASCII files and QA/QC reports. Cost: \$1.2M				
02/24-07/24	US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of topographic and control surveys utilizing mobile and stationary LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: \$148K				
11/21-02/22	LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of topographic and control surveys, utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$101K				

08/21-12/21	LA 301 Priest Canal Bridge, Crown Point, LADOTD, H.014284.5. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of topographic and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$83K
07/21-10/21	LA 29 Bayou Cocodrie Bridge Scour Repair, Ville Platte, LADOTD, H.014633.5. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of topographic and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$75K
11/23-Ongoing	LA 22 @ 1085 Roundabout, St. Tammany Parish, LADOTD, H.013872.5. Professional Land Surveyor – Mr. Chustz is responsible for the overall management of this task order consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$31K
12/23-Ongoing	IMP@LA 13 & LA 100 & I-10 Acc. Rd (Crowley), Acadia Parish, LADOTD, H.011829.5. Professional Land Surveyor – Mr. Chustz is responsible for the overall management of this task order consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$36K
02/22-12/23	West Baton Rouge Court St. Sidewalks, West Baton Rouge Parish. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of topographic and ground control surveys utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$115K
09/16-01/17	2017 I-10 Cable Barrier, Lafayette to Jennings, DOTD, H.010962. Professional Land Surveyor – Mr. Chustz was responsible for the overall management of this task order consisting of topographic and control surveys, uncrewed aerial LiDAR and photogrammetry, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included ASCII and LAS Files. Cost: \$105K

	Firm employed by Chustz Surveying, LLC				
	Name	Evan Chiasson, PLS		Years of relevant experience with this employer	5
	Title	Surveyor		Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization		Bachelor of Science / 2011 / Geomatics			
Active registration number / state / expiration date		PLS #5139 / Louisiana / 03-31-2026			
Year registered	2015	Discipline	Surveying		
Contract role(s) / brief description of responsibilities		Professional Land Surveyor registered in Louisiana. Oversees the logistics and management of each project from beginning to end.			
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).				
12/24-03/25	LA 463: Drainage Bridge, Vernon Parish, LADOTD, H.016315.5. Professional Land Surveyor – Mr. Chiasson was responsible for team and crew management as well as the logistical aspects of the task order consisting of topographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K				
12/24-03/25	LA 970: Creek Bridge, Pointe Coupee Parish, LADOTD, H.016321.5. Professional Land Surveyor – Mr. Chiasson was responsible for team and crew management as well as the logistical aspects of the task order consisting of topographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$46K				
12/24-02/25	LA 3187: Creek Bridge, Evangeline Parish, LADOTD, H.016320.5. Professional Land Surveyor – Mr. Chiasson was responsible for team and crew management as well as the logistical aspects of the task order consisting of topographic and control surveys using conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K				
12/24-01/25	LA 1206: Creek Bridge, Rapides Parish, LADOTD, H.016313.5. Professional Land Surveyor – Mr. Chiasson was responsible for team and crew management as well as the logistical aspects of the task order consisting of topographic and control surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K				
11/21-02/22	LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes. Professional Land Surveyor – Mr. Chiasson was responsible for team and crew management as well as the logistical aspects of the task order consisting of topographic and control surveys, utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$101K				
11/23-Ongoing	LA 22 @ 1085 Roundabout, St. Tammany Parish, LADOTD, H.013872.5. Professional Land Surveyor – Mr. Chiasson was responsible for team and crew management as well as the logistical aspects of the task order consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$31K				
12/23-Ongoing	IMP@LA 13 & LA 100 & I-10 Acc. Rd (Crowley), Acadia Parish, LADOTD, H.011829.5. Professional Land Surveyor – Mr. Chiasson was responsible for team and crew management as well as the logistical aspects of the task order consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$36K				
02/22-12/23	West Baton Rouge Court St. Sidewalks, West Baton Rouge Parish. Professional Land Surveyor – Mr. Chiasson was responsible for team and crew management as well as the logistical aspects of the task order consisting of topographic and ground control surveys utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$115K				

	Firm employed by Chustz Surveying, LLC			
	Name	Mark Huber, CH	Years of relevant experience with this employer	5
	Title	Senior Technician/Certified Hydrographer	Years of relevant experience with other employer(s)	40
Degree(s) / Years / Specialization				
Active registration number / state / expiration date				
Year registered		Discipline		
Contract role(s) / brief description of responsibilities		Senior Technician/Certified Hydrographer to QA/QC all data and oversee all hydrographic data collection, including multibeam and side scan.		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
12/24-03/25	LA 463: Drainage Bridge, Vernon Parish, LADOTD, H.016315.5. Senior Technician – Mr. Huber was responsible for QA/QC of the data for this task order consisting of topographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
12/24-02/25	LA 3187: Creek Bridge, Evangeline Parish, LADOTD, H.016320.5. Senior Technician – Mr. Huber was responsible for QA/QC of the data for this task order consisting of topographic and control surveys using conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
12/24-01/25	LA 1206: Creek Bridge, Rapides Parish, LADOTD, H.016313.5. Senior Technician – Mr. Huber was responsible for QA/QC of the data for this task order consisting of topographic and control surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
10/24-8/25	Automated Revetment Surveys on the Mississippi, Atchafalaya, and Red Rivers, LA; MVN Contract W912P8-20-C-0057. Senior Technician – Mr. Huber was responsible for QA/QC of the data and oversaw all hydrographic data collection for this task order consisting of automated multibeam/side scan and vessel mounted LiDAR surveys for 372 miles on the Mississippi, Atchafalaya, and Red Rivers with crewed and uncrewed vessels using DGPS and GNSS. Deliverables included 2x2 ft gridded XYZ ASCII files and QA/QC reports. Cost: \$1.2M			
02/24-07/24	US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5. Senior Technician – Mr. Huber was responsible for QA/QC of the data for this task order consisting of topographic and control surveys utilizing mobile and stationary LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: \$148K			
11/21-02/22	LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes. Senior Technician – Mr. Huber was responsible for QA/QC of the data for this task order consisting of topographic and ground control surveys, utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$101K			
08/21-12/21	LA 301 Priest Canal Bridge, Crown Point, LADOTD, H.014284.5. Senior Technician – Mr. Huber was responsible for QA/QC of the data and oversaw all hydrographic data collection for this task order consisting of topographic and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$83K			

07/21-10/21	LA 29 Bayou Cocodrie Bridge Scour Repair, Ville Platte, LADOTD, H.014633.5. Senior Technician – Mr. Huber was responsible for QA/QC of the data and oversaw all hydrographic data collection for this task order consisting of topographic and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$75K
11/23-Ongoing	LA 22 @ 1085 Roundabout, St. Tammany Parish, LADOTD, H.013872.5. Senior Technician – Mr. Huber is responsible for QA/QC of the data for this task order consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$31K
12/23-Ongoing	IMP@LA 13 & LA 100 & I-10 Acc. Rd (Crowley), Acadia Parish, LADOTD, H.011829.5. Senior Technician – Mr. Huber is responsible for QA/QC of the data for this task order consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$36K
02/22-12/23	West Baton Rouge Court St. Sidewalks, West Baton Rouge Parish. Senior Technician – Mr. Huber was responsible for QA/QC of the data for this task order consisting of topographic and ground control surveys utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$115K

	Firm employed by Chustz Surveying, LLC			
	Name	Craig Villemarette, TCS	Years of relevant experience with this employer	25
	Title	Field Supervisor	Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization				
Active registration number / state / expiration date				
Year registered		Discipline		
Contract role(s) / brief description of responsibilities		Traffic Control Supervisor. Senior Technician to coordinate and manage data collection and field safety.		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
12/24-03/25	LA 970: Creek Bridge, Pointe Coupee Parish, LADOTD, H.016321.5. Senior Technician – Mr. Villemarette was responsible for managing the data collection and safety of the crews for this task order consisting of topographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$46K			
12/24-02/25	LA 3187: Creek Bridge, Evangeline Parish, LADOTD, H.016320.5. Senior Technician – Mr. Villemarette was responsible for managing the data collection and safety of the crews for this task order consisting of topographic and control surveys using conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
12/24-01/25	LA 1206: Creek Bridge, Rapides Parish, LADOTD, H.016313.5. Senior Technician – Mr. Villemarette was responsible for managing the data collection and safety of the crews for this task order consisting of topographic and control surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
10/24-8/25	Automated Revetment Surveys on the Mississippi, Atchafalaya, and Red Rivers, LA; MVN Contract W912P8-20-C-0057. Senior Technician – Mr. Villemarette was responsible for managing the data collection and safety of the crews for this task order consisting of automated multibeam/side scan and vessel mounted LiDAR surveys for 372 miles on the Mississippi, Atchafalaya, and Red Rivers with crewed and uncrewed vessels using DGPS and GNSS. Deliverables included 2x2 ft gridded XYZ ASCII files and QA/QC reports. Cost: \$1.2M			
02/24-07/24	US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5. Senior Technician – Mr. Villemarette was responsible for managing the data collection and safety of the crews for this task order consisting of topographic and control surveys utilizing mobile and stationary LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: \$148K			
11/21-02/22	LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes. Senior Technician – Mr. Villemarette was responsible for managing the data collection and safety of the crews for this task order consisting of topographic and ground control surveys, utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$101K			
07/21-10/21	LA 29 Bayou Cocodrie Bridge Scour Repair, Ville Platte, LADOTD, H.014633.5. Senior Technician – Mr. Villemarette was responsible for managing the data collection and safety of the crews for this task order consisting of topographic and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$75K			

11/23-Ongoing	LA 22 @ 1085 Roundabout, St. Tammany Parish, LADOTD, H.013872.5. Senior Technician – Mr. Villemarette is responsible for managing the data collection and safety of the crews for this task order consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$31K
12/23-Ongoing	IMP@LA 13 & LA 100 & I-10 Acc. Rd (Crowley), Acadia Parish, LADOTD, H.011829.5. Senior Technician – Mr. Villemarette is responsible for managing the data collection and safety of the crews for this task order consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$36K
02/22-12/23	West Baton Rouge Court St. Sidewalks, West Baton Rouge Parish. Senior Technician – Mr. Villemarette was responsible for managing the data collection and safety of the crews for this task order consisting of topographic and ground control surveys utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$115K

	Firm employed by Chustz Surveying, LLC			
	Name	Lonnie Dupont, CST, TCT	Years of relevant experience with this employer	25
	Title	Party Chief	Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization				
Active registration number / state / expiration date				
Year registered		Discipline		
Contract role(s) / brief description of responsibilities		NSPS Certified Survey Technician #0214-4782. Traffic Control Technician.		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
12/24-03/25	LA 463: Drainage Bridge, Vernon Parish, LADOTD, H.016315.5. Party Chief – Mr. Dupont was responsible for data collection and the safety of his crew for this contract consisting of topographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
12/24-03/25	LA 970: Creek Bridge, Pointe Coupee Parish, LADOTD, H.016321.5. Party Chief – Mr. Dupont was responsible for data collection and the safety of his crew for this contract consisting of topographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$46K			
12/24-02/25	LA 3187: Creek Bridge, Evangeline Parish, LADOTD, H.016320.5. Party Chief – Mr. Dupont was responsible for data collection and the safety of his crew for this contract consisting of topographic and control surveys using conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
12/24-01/25	LA 1206: Creek Bridge, Rapides Parish, LADOTD, H.016313.5. Party Chief – Mr. Dupont was responsible for data collection and the safety of his crew for this contract consisting of topographic and control surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
02/24-07/24	US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5. Party Chief – Mr. Dupont was responsible for data collection and the safety of his crew for this contract consisting of topographic and control surveys utilizing mobile and stationary LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: \$148K			
11/21-02/22	LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes. Party Chief – Mr. Dupont was responsible for data collection and the safety of his crew for this contract consisting of topographic and ground control surveys, utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$101K			
11/23-Ongoing	LA 22 @ 1085 Roundabout, St. Tammany Parish, LADOTD, H.013872.5. Party Chief – Mr. Dupont was responsible for data collection and the safety of his crew for this contract consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$31K			
12/23-Ongoing	IMP@LA 13 & LA 100 & I-10 Acc. Rd (Crowley), Acadia Parish, LADOTD, H.011829.5. Party Chief – Mr. Dupont was responsible for data collection and the safety of his crew for this contract consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$36K			
02/22-12/23	West Baton Rouge Court St. Sidewalks, West Baton Rouge Parish. Party Chief – Mr. Dupont was responsible for data collection and the safety of his crew for this contract consisting of topographic and ground control surveys utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$115K			
09/16-01/17	2017 I-10 Cable Barrier, Lafayette to Jennings, DOTD, H.010962. Party Chief – Mr. Dupont was responsible for data collection and the safety of his crew for this contract consisting of topographic and control surveys, uncrewed aerial LiDAR and photogrammetry, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included ASCII and LAS Files. Cost: \$105K			

	Firm employed by Chustz Surveying, LLC			
	Name	Daniel Reed, BARCH	Years of relevant experience with this employer	17
	Title	Supervisor	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		Bachelor of Architecture from LSU / 2008 / Architecture		
Active registration number / state / expiration date				
Year registered		Discipline		
Contract role(s) / brief description of responsibilities		Supervisor in charge of QA/QC of data processing and mapping.		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
12/24-03/25	LA 463: Drainage Bridge, Vernon Parish, LADOTD, H.016315.5. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of topographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
12/24-03/25	LA 970: Creek Bridge, Pointe Coupee Parish, LADOTD, H.016321.5. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of topographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$46K			
12/24-02/25	LA 3187: Creek Bridge, Evangeline Parish, LADOTD, H.016320.5. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of topographic and control surveys using conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
12/24-01/25	LA 1206: Creek Bridge, Rapides Parish, LADOTD, H.016313.5. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of topographic and control surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$53K			
02/24-07/24	US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of topographic and control surveys utilizing mobile and stationary LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: \$148K			
11/21-02/22	LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of topographic and control surveys, utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$101K			
08/21-12/21	LA 301 Priest Canal Bridge, Crown Point, LADOTD, H.014284.5. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of topographic and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$83K			
07/21-10/21	LA 29 Bayou Cocodrie Bridge Scour Repair, Ville Platte, LADOTD, H.014633.5. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of topographic and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$75K			
11/23-Ongoing	LA 22 @ 1085 Roundabout, St. Tammany Parish, LADOTD, H.013872.5. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$31K			
12/23-Ongoing	IMP@LA 13 & LA 100 & I-10 Acc. Rd (Crowley), Acadia Parish, LADOTD, H.011829.5. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of property surveys, ROW surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables include MicroStation DGN files, PDF maps, and title reports. Cost: \$36K			

02/22-12/23	West Baton Rouge Court St. Sidewalks, West Baton Rouge Parish. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of topographic and ground control surveys utilizing mobile LiDAR, uncrewed aerial LiDAR, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: \$115K
09/16-01/17	2017 I-10 Cable Barrier, Lafayette to Jennings, DOTD, H.010962. Supervisor – Mr. Reed was responsible for the QA/QC of data processing and mapping of this task order consisting of topographic and control surveys, uncrewed aerial LiDAR and photogrammetry, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included ASCII and LAS Files. Cost: \$105K

	Firm employed by Urban Systems, Inc.			
	Alison C. Michel, P.E., PTOE, PTP, RSP_{2i} President/Transportation Engineer		Years of relevant experience with this employer	24
			Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization		BS / 1997 / Civil Engineering		
Active registration number / state / expiration date		30261 / Louisiana / 03/31/2027		
Year registered	2002	Discipline	Professional Engineer: Civil Engineering	
Active registration number / state / expiration date		1023 / Louisiana / 11/06/2026- Professional Traffic Operations Engineering		
		626/ 11/20/2026- Professional Transportation Planner		
		148/ 03/20/2026 - Road Safety Professional 2i		
Contract role(s) / brief description of responsibilities		Professional In Charge of Traffic Engineering Tasks/ QA-QC		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
<i>Ms. Michel is a leading expert in Traffic Engineering and Transportation Planning. She has extensive design experience that includes permanent and temporary traffic signals, traffic control devices for work zones, intelligent transportation systems, signage, and striping. She has also prepared construction documents and provided construction engineering services for roadway modifications at intersections, point repairs and roadway reconstruction. This experience provides an in depth understanding of the LADOTD road design requirements. Ms. Michel has completed the Highway Safety Manual course sponsored by the LADOTD and the NEPA and Transportation Decision Making course sponsored by the National Highway Institute. She has a wide array of experience with transportation studies including traffic management plans, safety, corridor, Stage 0/ feasibility, Stage 1/ environmental, multi-modal, and complete street facilities. She has experience in the timing of coordinated signal systems and progression analyses. She is proficient in microscopic simulation modeling using VISSIM and CORSIM and in analysis programs such as Highway Capacity Software (HCS), Synchro, Tru-Traffic and SIDRA.</i>				
03/21-05/13	Huey P. Long Bridge Widening - (Westbank and Eastbank Approaches and Main Bridge Deck Widening) The contractor for the Huey P. Long Widening in Jefferson Parish, LA brought on USI about half-way into construction to improve the flow of traffic during required closures. Ms. Michel prepared traffic control devices plans (TCDP) for multiple phases of construction. The TCDPs also included the design of a traffic signal plan for the installation of temporary signal heads to control lane shifts.			
05/09-05/10	LA 1088/I-12 Interchange Ms. Michel updated the permanent signage plans for the interchange on I-12 at LA 1088 in St. Tammany Parish, LA to reflect the new alignment. TCDP were designed based on the sequence of construction drawings and two phases of construction. Specifications for required S-items and a construction cost estimate were provided.			
02/10-07/10	US Army Corps of Engineers LPV 16.2 Bonabel Boulevard Floodgate Ms. Michel designed the traffic control devices plans for construction of the LPV 16.2 Bonabel Blvd. Floodgate in Jefferson Parish, LA. Plans included: haul routes, bypass for the ramp tie in to Bonabel; diverting Bonabel SB traffic to the temporary bypass ramp; and diverting NB traffic to Bonabel SB travel lanes. Plan changes due to unforeseen conditions included details for floodwall construction diverting Bonabel NB and SB traffic to the temporary roadway and closing Bonabel Boulevard. The plans met USACE, Jefferson Parish and MUTCD standards. Inspections were conducted after any changes to the traffic control plan and/or at 30-day intervals.			
01/14-08/19	US 90 (I-49 South) Albertson's Parkway to Ambassador Caffery Design-Build			

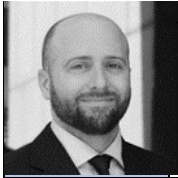
	Ms. Michel was a key member for this design-build project which converted US 90 to a controlled access facility by converting at-grade intersections to an interchange. The bridge structure had to span the intersection and railroad. She supervised the design and analysis and performed QA/QC for temporary and permanent signal plans, permanent signage plans, temporary traffic control plans and the Transportation Management Plan. Prepared Signal Plans using DOTDs latest TSI format. Analysis included developing design hour volumes for the design year and modeling signals in Synchro. Phasing and timing were developed for both permanent and temporary signal operation.
12/18-05/19	Manhattan Signal Controller Upgrades Traffic signal modification plans for 11 intersections along the Manhattan Boulevard corridor in Jefferson Parish, Louisiana were prepared in accordance with Jefferson Parish and Manual on Uniform Traffic Control Devices (MUTCD) standards. The modifications included controller component upgrades, video detection and pedestrian accommodations at select intersections. During the project Ms. Michel offered her technical expertise from over 17 years of designing traffic signals and preparing technical specifications for Jefferson Parish.
02/20- ongoing	LA 23: Belle Chasse Bridge & Tunnel (LADOTD) Ms. Michel is managing USI's tasks for Owner Verification services focused on reviewing design plans for traffic related submittals from the design-builder. These submittals included capacity analysis, plans for traffic signals, signage and striping. Ms. Michel conducted QA/QC reviews to confirm adherence with LADOTD standards and the MUTCD. During construction, Ms. Michel will provide support by reviewing Traffic Control Devices Plans for proposed lane closures, detours and advanced warning signage.

	Firm employed by Urban Systems, Inc.			
	Nicole Stewart, P.E., PTOE Vice President / Transportation Engineer		Years of relevant experience with this employer	20
			Years of relevant experience with other employer(s)	1.5
Degree(s) / Years / Specialization		BS / 2004 / Civil Engineering		
Active registration number / state / expiration date		34750 / Louisiana / 09/30/2027		
Year registered	2009	Discipline	Professional Engineer: Civil Engineering	
Active registration number / state / expiration date		2923 / Louisiana / 08/14/2027- Professional Traffic Operations Engineering		
Contract role(s) / brief description of responsibilities		Traffic Engineering/Design Analysis and TMPs		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
<i>Ms. Stewart has eighteen and a half years of experience in Traffic and Transportation Engineering and is a certified Traffic Control Design Specialist. Ms. Stewart has designed numerous Traffic Control Devices Plans to meet LADOTD and MUTCD standards. Ms. Stewart has experience in Transportation/Traffic engineering including transportation studies, safety studies and traffic impact studies. Her design experience includes signal design and timing of coordinated systems, striping, signage, geometric design, pavement design, and drainage. She has experience using Highway Capacity Software (HCS), Synchro, and TruTraffic in the timing and coordinating of traffic signals.</i>				
02/15-06/16	Bridge Preventative Maintenance District 61 (LADOTD) Ms. Stewart was the principal in charge for Traffic Management Plans (TMP) for bridge replacement and repairs for various locations in Louisiana. This included developing various levels of TMP's based on LADOTD EDSM guidelines. Tasks included conducting capacity analysis, safety analysis, detour analysis and developing proposed mitigations where applicable. For the reconstruction of the LA 1 bridge over the Intracoastal Waterway, a detailed Level 3 TMP was prepared. For this TMP, detailed work zone impact management strategies were developed to help minimize the project's impact on mobility.			
04/10-09/11	I-10 Crossing - Irish Bayou Bridge Ms. Stewart was the project manager for this project which involved designing traffic control devices plans for the I-10 Highway Crossing Levee Enlargement project at Irish Bayou Road in New Orleans East. The plans included multiple and phased road closures of a six (6) lane section of Interstate 10 including nighttime closures. In addition to managing the project, she was responsible for QA-QC.			
12/16-04/21	France Road - North Widening Over time, France Rd between Gentilly Blvd and Hayne Blvd had deteriorated pavement and was in need of widening and drainage repairs. Adjacent to the west side of the roadway was a concrete floodwall that limited Right Of Way and the ability to maintain two-way traffic throughout construction. Ms. Stewart developed site specific traffic control plans implementing a one-way system and detouring traffic that would normally traverse in the opposite direction of the allowed movement. The plans were designed in accordance with the latest version of the MUTCD and the City of New Orleans traffic control standards.			
05/18-04/19	TMP for I-10: West of 108 to I-210 Interchange: Rubblize and Overlay (LADOTD) As the lead engineer for this Traffic Management Plan, Ms. Stewart was responsible for the preparation of the safety analysis. She conducted the analysis per the guidelines set forth by LADOTD in <i>Guidelines for Crash Data Analysis</i> for this TMP in Lake Charles, LA. She conducted queue analysis to identify when lane closures would be permitted, identified the construction impact area and reviewed crash data for more than 350 collisions. Ms. Stewart identified trends and calculated crash rates and determined that the section of I-10 that was going to be rubblized had a crash rate that was higher than the statewide average and required mitigation.			

09/11-02/12	Williams Boulevard Floodgate The design of Traffic Control devices Plans including haul routes were prepared for the two phased closure of Williams Boulevard at the Lake Pontchartrain Levee Floodgate by Ms. Stewart. The plans were prepared in accordance with Jefferson Parish and MUTCD Standards. Once the plan was implemented MS. Stewart conducted inspections.
05/06-07/11	Clearview Parkway at West Esplanade For the Clearview Parkway and West Esplanade Avenue Intersection Improvement project, Ms. Stewart prepared permanent traffic signal plans which included replacing the controller cabinet, mast arms, signal heads, power source, signs and vehicle detection and interconnect. She also prepared the Traffic Control Devices and Detour Plans to facilitate traffic through the phases of construction.
06/11-03/12	Southeast Louisiana Urban Flood Control Project Improvements To Two-Mile Canal (Patriot Street Canal), Phase I, Barataria Blvd To First Avenue Canal Ms. Stewart designed the Traffic Control Devices Plans for the improvements to the Two Mile Canal. These plans included traffic closure details, signage, flagmen, and haul routes. Ms. Stewart conducted inspections throughout construction to confirm compliance with the plans that had been approved by Jefferson Parish.
03/10-07/10	USACE Traffic Control Devices Plans Ms. Stewart has designed numerous Traffic Control Devices Plans to meet US Army Corps of Engineers, LADOTD and MUTCD standards. The plans and specifications included, but were not limited to, the proper placement of temporary Traffic Control Devices (signs, barricades, drums, roadway markings, etc.) to facilitate traffic safely and efficiently through the traffic control zone. Haul routes were designated when necessary. Many of the plans were for Corps of Engineers' projects.

	Firm employed by Urban Systems, Inc.		
	Christine M. Darrah, P.E. Transportation Engineer	Years of relevant experience with this employer	10
		Years of relevant experience with other employer(s)	20
Degree(s) / Years / Specialization		BS / 1997 / Civil Engineering	
Active registration number / state / expiration date		25828 / Louisiana / 09/30/2025	
Year registered	1999	Discipline	Professional Engineer: Civil Engineering
Contract role(s) / brief description of responsibilities		Traffic Engineer	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).		
<i>Mrs. Darrah has experience in Transportation/Civil Engineering including maintenance of traffic, plan and specification preparation, geometric design, construction management and quality control. She is proficient in the use of AutoCAD, Adobe Illustrator, and Highway Capacity Software (HCS). She also has experience using MicroStation and TransCAD. She has experience developing temporary striping and signage plans for various conditions including lane closures, road closures, flagging operations and full detour plans. Ms. Darrah also has experience in traffic signal design, warrants analysis, timing/phasing analysis, wiring diagrams, interconnect layouts, construction quantities, specifications and cost estimates.</i>			
03/21-04/21	Entergy Louisiana, I-610 Transmission Line Crossing at Frenchman Ms. Darrah was the Project Engineer for the interstate closure project to assure public safety during overhead transmission lines repairs, this included a full closure of both directions of I-610 and westbound on ramp Elysian Fields Ave, in New Orleans. Ms. Darrah coordinated the six hour interstate closure and associated detours with LADOTD and City of New Orleans, LA . She designed Traffic Control Devices Plans applying MUTCD, LADOTD and City of New Orleans standards for proper placement of traffic control devices including portable changeable message boards. Ms. Darrah utilized AutoCAD to assist in final preparation of plans.		
04/18-01/22	N. Peters Sidewalk Expansion The Project Manager for the N. Peters sidewalk expansion project was Ms. Darrah. She prepared construction drawings and specifications for the reconstruction of the sidewalk adjacent to Canal Place Shopping Center in the Downtown Development District (DDD). The plans included the geometric layout, grading, drainage, street lighting, striping and traffic control. The plans followed all DDD, MUTCD, ADA, New Orleans DPW and S&WB requirements. Ms. Darrah also provided Construction Management Services. This included field inspections, responding to inquiries and reviewing contractors invoices.		
09/14-12/14	SELA 26 Widening of Florida Ave. Canal Phase II and III (LADOTD) Ms. Darrah designed Traffic Control Devices Plans to meet US Army Corps of Engineers, LADOTD and MUTCD standards. The plans and specifications included, but were not limited to, the proper placement of temporary Traffic Control Devices (signs, barricades, drums, roadway markings, etc.) to facilitate traffic safely and efficiently through the traffic control zone. Haul routes were designated when necessary.		
01/14-07/17	North Terminal Louis Armstrong New Orleans International Airport Ms. Darrah led the design of the Maintenance of Traffic plans for the landside access roadways. The plans were designed in accordance with the Manual of Uniform Traffic Control Devices and LADOTD standards. Ms. Darrah also prepared specifications for the maintenance of traffic items.		

06/22-10/22	KCS Acadian Thruway This project included lane closures and full closure of Acadian Thruway at the KCS bridge near the I-10 interchange in East Baton Rouge Parish. Ms. Darrah prepared the Traffic Control Devices Plans applying MUTCD and LADOTD standards for proper placement of traffic control devices. Additional project efforts included designing lane closures on an I-10 onramp for laydown access and police-controlled haul routes.
03/17-03/18	Port of New Orleans, Milan St Terminal As the project's lead engineer Ms. Darrah designed Construction Sequencing and Permanent Striping Layouts and Signage plans. Construction sequencing included keeping port tenants fully operational through each phase of construction. All plans were prepared in accordance with LADOTD and MUTCD guidelines.
07/22-08/22	Mossville Traffic Control Devices Plan As the project Manager Ms. Darrah designed Traffic Control Devices Plans for two rolling closures of I-10 and associated ramps in Lake Charles, LA for transmission line repairs. Efforts included designing plans for interstate closures and detours. Ms. Darrah coordinated with LADOTD and Calcasieu Parish in identifying optimal locations for Dynamic Message Signage.
01/14-07/17	North Terminal Louis Armstrong New Orleans International Airport Ms. Darrah led the design of the Maintenance of Traffic plans for the landside access roadways. The plans were designed in accordance with the Manual of Uniform Traffic Control Devices and LADOTD standards. Ms. Darrah also prepared specifications for the maintenance of traffic items.
11/20-02/23	US 190 at Northshore and Camp Villere Roundabouts As project engineer, Ms. Darrah oversaw the design of permanent striping & signage plans per LADOTD standards and specifications. She also managed the design of temporary traffic signals that will be required during the multiple phases of roundabout construction. A level 2 Traffic Management Plan (TMP) was also prepared. Ms. Darrah coordinated with the prime-consultant, St Tammany Parish, and LADOTD as needed.



Firm employed by **Urban Systems, Inc.**

Matthew H. Morgan, P.E., PTOE
Transportation Engineer

Years of relevant experience with this employer

12

Years of relevant experience with other employer(s)

0

Degree(s) / Years / Specialization			BS / 2009 / Civil Engineering
Active registration number / state / expiration date			47060 / Louisiana / 03/31/2027
Year registered	2022	Discipline	Professional Engineer: Civil Engineering
Active registration number / state / expiration date			5893 / 3/19/2028 – Professional Traffic Operations Engineer
Contract role(s) / brief description of responsibilities			Data Collection and Design Analysis Support
<i>Mr. Morgan has experience that ranges from starting as a Data Collection Manager while in college to becoming an Engineer Intern and now a Professional Engineer for Traffic Engineering/ Transportation Planning projects. He has collected and delivered volume, class, and speed data to project managers using road tube equipment and camera systems. Mr. Morgan has been a team member for many projects that involved intersection, freeway, and highway analysis. He has assisted with Traffic Impact Studies, Traffic Control Device Plans, Interchange Modification/Justification Reports, Stage 0 Traffic Studies, Stage 1 Traffic Studies Transportation Management Plans, and a variety of others. He is proficient in the following software: PetraPro, TraxPro, MetroCount, Excel, AutoCAD, SIDRA, HCS Software, VISSIM, CORSIM, and Adobe Suite.</i>			
03/22-09/22	Hundred Oaks Broussard Bridges TCDP The objective of the Traffic Control Devices Plan (TCDP) was to provide adequate advanced notice and signage to drivers for the closure of two local roadway bridges. Mr. Morgan led the design of the TCDP for each bridge closure which incorporated local municipalities' standards, as well as the Manual on Uniform Traffic Control Devices (MUTCD) standards. Mr. Morgan used aerial photography and the Google Earth mapping program to designate placement of detour and advanced warning signage. He oversaw the creation of the plans in AutoCAD, a CAD-type software oriented to drawing and modeling. He used quality assurance and control with other licensed engineers in the firm to verify the plans before delivering electronic versions of preliminary plans to the client using Adobe PDF format.		
12/18-10/22	LA 46- St. Claude Bridge Bicycle Accommodation Mr. Morgan developed short term and long-term alternatives for safely accommodating bicyclists across the raised portion of LA 46 at the St. Claude Bridge and over the Inner Harbor Navigational Canal lift span. To accomplish this task, he conducted field observations which included sight distance evaluations, identifying existing equipment to be modified/removed, collecting classification data for pedestrians, vehicles, and bicycles using the roadway/lift span, and collecting vehicular speed data. Mr. Morgan assisted with the cost estimate, and the preparation of a technical memorandum to implement these alternatives for the Port of New Orleans.		
03/18-03/21	Morial Convention Center Lanier Park TCDP Mr. Morgan assisted in the preparation of traffic control device plans for preliminary and active construction phases. He assisted in efforts to ensure all plans were prepared to meet the city of New Orleans and MUTCD standards. He also assisted in the preparing of the electronic media, AutoCAD drawings and PDF's for documentation.		
03/16-08/18	Future I-49 South Study (Raceland to Westbank Expressway), Stage 1 The study area spanned US 90 from the Westbank Expressway in Jefferson Parish to Lafourche Parish. Mr. Morgan led the data collection effort which included traffic volume collection, speed studies, and vehicle classification. He performed site investigations and assisted project engineers with development of figures and tables to present the data. He utilized LADOTD's resources and tools during the study phase for analysis of existing conditions.		

03/16-12/19	I-10/Loyola Interchange Improvement IMR New Orleans, LA (LADOTD) Mr. Morgan led data collection efforts on I-10 and surrounding roadways for the I-10/Loyola Interchange improvements. He organized counting roadways and turning movements using video camera and pneumatic tubes. He also assisted in the collection of speed data using hand-held radar devices. Mr. Morgan helped review crashes associated with the project, analyze crash characteristics, and examine trends in crashes for the study years. He assisted with capacity analysis for existing and future alternative conditions using HCS, Synchro, and Vissim analysis software. Mr. Morgan helped write the reports and prepare appendixes documenting the results.
02/22-04/22	Walker LA 447 Counts Urban Systems Inc provided Professional Traffic Engineering Services for a traffic study conducted on the LA 447 corridor to re-evaluate proposed access management changes along the corridor. Mr. Morgan coordinated with National Data and Surveying Services (NDS) to obtain the traffic data per the LADOTD Traffic Engineering Process and Report (TEPR) requirements. Mr. Morgan reviewed 7-day data and compiled an "Appendix A" which included peak period determinations, graphical representation of the data collected over the 7-day period, and raw count data in PDF format. Mr. Morgan used Microsoft Excel along with Adobe programs to identify and submit peak periods to LADOTD for approval. Mr. Morgan also reviewed 48-hour, turning movement counts (TMC), and 15-minute driveway counts for completion and reliability, to incorporate them into the traffic study.
05/21-09/22	Violet Terminal Traffic Study The objective of the Violet Terminal Traffic Study was to assess how long the existing traffic network of LA state highways could sustain the additional traffic generated by a new Port terminal located in Violet, LA. Mr. Morgan led in the data collection effort for numerous intersections and roadways using video cameras. Mr. Morgan identified peak hours for the associated traffic network. He also helped in estimating vehicular traffic volumes for years 2028 through 2050. He analyzed signalized intersections with and without improvements, where needed, to mitigate the impacts. Mr. Morgan assisted with report preparation that summarized the objective, methodologies, and findings of the project.

17. Firm Experience:

Firm name	Hardesty & Hanover, LLC			Past Performance Evaluation Discipline(s)*		Bridge	
Project name	IDIQ Contract for Movable Bridge Preservation				Firm responsibility (prime or sub?)		Prime
Project number	4400023909		Owner's name	Louisiana Department of Transportation			
Project location	Terrebonne and Rapides Parish, LA			Owner's Project Manager	T.J. Dunlevy, PE		
Owner's address, phone, email		1201 Capitol Access Rd. Baton Rouge, LA 70802 225.379.1093 tjdunlevy@la.gov					
Services commenced by this firm (mm/yy)			01/23	Total consultant contract cost (\$1,000's)			\$1,030
Services completed by this firm (mm/yy)			Ongoing	Cost of consultant services provided by this firm (\$1,000's)			n/a

Boudreaux Canal Bridge H&H is providing mechanical design for the new bridge, as well as providing structural design services for the operator house foundation, generator platform, and fender system. H&H attends project meetings and coordinates with the structural, mechanical, and electrical engineers at DOTD to ensure proper coordination of design activities. H&H is also preparing documentation for the Bridge Operation Manual, pre-bid questions, and bid review analysis. H&H is producing plans and specifications to provide notes and technical provisions. H&H will design a hydraulic system, center wedge assemblies, center wedge ramp, and end roller assemblies, including the roller ramps. The hydraulic system will incorporate redundant variable-displacement vane pumps, be designed to accommodate 4,500 openings per year, and be relocated to a novel placement for swing bridges of this configuration, prioritizing access for maintenance personnel.

Jackson Street PED Gates H&H is designing ADA-compliant pedestrian gates for the US 165 Red River MB (Jackson St) lift bridge, including full plans, specs, cost estimates, and construction support in accordance with LADOTD standards. The team handles meetings, site visits, Level 2 TMP development, and bid-phase support.

Structural: Plans include gate integration, traffic control, and aerial cable supports. Lead: Erik Diaz, PE (16+ years in bridge design).

Electrical: Specifications and plans include the design and integration of power/control gates into the existing control system, aerial cable, and CCTV system.

Bayou Teche Bridge (Oaklawn) H&H provided the electrical design for the swing bridge in accordance with AASHTO, LADOTD's design requirements, NEC, IES standards, and standard design details. This bridge replacement project included a new control house, standby generator, traffic signals, warning/barrier gates, channel navigation aids, lightning protection, parking, and pedestrian walkway lighting. H&H worked closely with other design disciplines to ensure project success. All design deliverables were made in accordance with the project schedule. H&H also provided post-design services, including shop drawing review, periodic inspection, and functional checkout testing.

Electrical: H&H designed a complete bridge power and relay logic control system, including power distribution, lighting, including photometric analysis per IES standards, as well as luminaire selection and detailed change order plans. A field survey and bridge plan review supported an arc flash hazard analysis, recommending protective device settings using industry-standard software.

Structural and Geotechnical: Design of the foundation and structural support details required to resist wind loads in accordance with AASHTO LRFD.

Scope of Work Relevant to the Contract

- Structural, Geotechnical, Mechanical & Electrical Engineering
- Traffic Control Plan
- Agency Coordination with LaDOTD



Key Members: Babak Naghavi, PE, PhD; Andrew Barthle, PE; Chris Aubert, EI; Chris Svava, PE; Corey Bourgeois, PE; Courtney Mai, EI; Dalton Hunt, EI; Erik Diaz, PE; Fred Wetekamm, PE; Ken Pecquet, PE; Linh Kim, PE; Sean Brock, EI; and Travis Kimmins, PE

Firm name	Hardesty & Hanover, LLC		Past Performance Evaluation Discipline(s)*		Bridge	
Project name	SR 75 (US 231) Reconstruction, SR 30A (US 98) to South Pipeline Road			Firm responsibility (prime or sub?)		Sub
Project number		Owner’s name	Florida DOT District 3			
Project location	Panama City, FL			Owner’s Project Manager	DJ Barber, PE	
Owner’s address, phone, email		1074 Highway 90, Chipley, FL 32428 850.330.1464 Lonnie.barber@dot.state.fl.us				
Services commenced by this firm (mm/yy)		04/2017	Total consultant contract cost (\$1,000’s)			Unknown
Services completed by this firm (mm/yy)		Ongoing	Cost of consultant services provided by this firm (\$1,000’s)			\$1,671

H&H provided transportation engineering design services for the new single-point urban interchange (SPUI) and a new 840-foot steel bridge. Services included the design of roadway, drainage, and lighting systems, as well as the design of a new 840-foot steel bridge on SR 77, crossing over SR-75/US 231 and the CSX railroad, as part of a new single-point urban interchange (SPUI).

H&H was responsible for preparing a Bridge Development Report (BDR) and played a leading role in all aspects of the structural design of a single three-span continuous bridge (215 feet - 355 feet - 215 feet) with steel plate girders and concrete deck. The intermediate pier columns support integral post-tensioned concrete caps.

Roadway Design: Roadway design work included an integrated milling and resurfacing project with the addition of vehicular lanes to the outside of the roadway in each direction. A new baseline for construction and profile along SR 77 was established, as well as four ramp baselines and profiles. A Temporary Traffic Control Plan was designed in correspondence with the roadway design to minimize necessary construction phasing.

Drainage Design: The drainage design included three ponds: one existing, the expansion and deepening of a second, and the new design and construction of a third pond. Additionally, the supporting drainage structures were designed along SR 77 to best convey the flow from the project.

This SPUI and bridge design project was completed under our prime's District 3's overall capacity multi-lane reconstruction contract, which consists of widening SR 75 from four to six lanes from SR 30A to South of Pipeline Road.

Key Members: Tim Noles, PE; James Phillips, PE; Matt Wolczynski, PE; Andrew Barthle, PE; Ben Bower, PE; James Newberry, PE, SE; Webb Jones, PE; Dennis Gowins, PE; Robert Hideck, PE; Marco Lara, PE; John Corven, PE; Roberto Vicedo, PE; and Rafal Wuttrich, PE

Scope of Work Relevant to the Contract

- Concrete And Steel Girder Bridge
- Roadway And Drainage Design
- Roadway Lighting
- Traffic Control Plan



Firm name	Hardesty & Hanover, LLC		Past Performance Evaluation Discipline(s)*		Bridge	
Project name	Almonaster Avenue Bridge over the Industrial Canal Rehabilitation			Firm responsibility (prime or sub?)		Prime
Project number	03828.00-0	Owner's name	Port of New Orleans			
Project location	New Orleans, LA		Owner's Project Manager		Michael Sulser, PE	
Owner's address, phone, email	Port of New Orleans 504.528.3297 michael.sulser@portnola.com					
Services commenced by this firm (mm/yy)		06/18	Total consultant contract cost (\$1,000's)			\$2,500
Services completed by this firm (mm/yy)		Ongoing	Cost of consultant services provided by this firm (\$1,000's)			\$2,162

H&H provided the bridge assessment, complete rehabilitative engineering design, and construction inspection services required for the rehabilitation and partial replacement of the Almonaster Ave Bridge for the Port of New Orleans.

The Almonaster Bridge spans the Industrial Canal, offering two vehicular lanes and a single railroad track crossing down the center of the span. Hurricane Katrina destroyed roadways leading up to the bridge in 2005 and for the following 13 years, the bridge had exclusively served rail traffic. H&H's 2019 assessment of the circa-1920 bascule 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 is developing the necessary bridge remedial design plans and specifications and is providing inspection services during construction. The bridge's span drive and span lock machinery, operating strut, guide assembly, live load bearings, and counterweight trunnion pin and bushing will be replaced. The main trunnion bearings will be rehabilitated and repositioned.

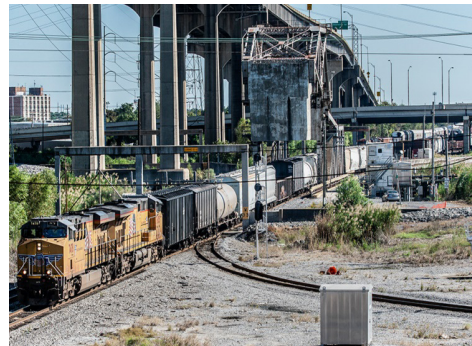
The road design services included a new alignment for the connecting road including all drainage structures.

Additional remedial efforts along Almonaster Ave Bridge also included the improvement or replacement of the original fixed roadway approach spans. The sharp curve that existed on westbound Almonaster Ave was demolished and a new road was constructed on an improved alignment. H&H developed a hydraulic study and a site plan that included several retention ponds for drainage improvements. Other services included environmental, geotechnical, and pavement design.

Scope of Work Relevant to the Contract

- Historical Bridge Rehabilitation
- Structural Steel & Concrete Repairs/Replacement
- Full Containment Cleaning & Painting All Metalwork
- Roadway Superstructure Replacement
- Installation of New Navigation Vertical Clearance Gauges, Navigation Lights & Inspection Cables
- Mechanical & Electrical Systems Upgrades
- Geotechnical, Environmental, & Surveying
- Load Rating
- Inter-Agency Coordination with LaDOTD, USCG, City of NOLA, & CSX
- Construction Support Services

Key Members: Babak Naghavi, PE, PhD; Tim Noles, PE; Andrew Barthle, PE; Chris Aubert, EI; Dalton Hunt, EI; John Witthohn, PE; Erik Diaz, PE; Lee Adams, PE; Matt Gagliano, PE; Robert Hidecki, PE; Linh Kim, PE; Travis Kimmins, PE; Marco Lara, PE; Don Marinelli, PE; Steve Mikucki, PE; Alec Noble, PE; Ken Pecquet, PE; Fred Wetekamm, PE; and James Phillips, PE



Firm name	Hardesty & Hanover, LLC		Past Performance Evaluation Discipline(s)*		Bridge	
Project name	SR A1A North Causeway Bridge over ICWW			Firm responsibility (prime or sub?)		Prime
Project number	n/a	Owner’s name	Florida DOT			
Project location	St. Lucie County, FL		Owner’s Project Manager		Donovan Pessoa	
Owner’s address, phone, email		3400 West Commercial Blvd., Ft. Lauderdale, FL phone: 941.777.4442 donovan.pessoa@dot.state.fl.us				
Services commenced by this firm (mm/yy)		01/16	Total consultant contract cost (\$1,000’s)			\$4,905
Services completed by this firm (mm/yy)		10/21	Cost of consultant services provided by this firm (\$1,000’s)			\$2,970

H&H provided comprehensive engineering planning and design services for the replacement of SR A1A North Causeway Bridge, which carries SR A1A and the East Coast Greenway over the ICWW, FEC RR, and Old Dixie Highway.

This project required the design of a new high-level fixed bridge and associated approaches, a new observation deck bridge emerging beneath SR A1A from the west shoreline, as well as the design of new roadway alignments and additional civil design services to address adjacent state, frontage, and access roads and railway crossings located within the project's tight footprint.

Challenges faced by the H&H team included extensive coordination with utilities, railroads, and marines, as well as significant right-of-way coordination required by FEC and adjacent business owners, and permitting coordination. Other scopes of services included geotechnical engineering, drainage, lighting, signalization, signage, pavement marking, public involvement, maintenance, control and protection of vehicular and marine traffic.

The new fixed bridge is 65 feet wide and consists of FIB-84 beams spanning 158 feet in simple spans and 184 feet in continuous spans. The new observation deck structure is CFRP prestressed slabs, bent caps and piles.

Scope of Work Relevant to the Contract

- Fixed Bridge Design
- Roadway Design
- Hydraulics And Drainage Design
- Geotechnical Design
- Roadway Lighting & Signalization
- Right-Of-Way And Utility Coordination
- Traffic Control Plan
- Public Involvement

Key Members: James Phillips, PE; Tim Noles, PE; Robert Viciado, PE; Robert Hideck, PE; Andrew Barthle, PE; Matt Wolcynski, PE; and Webb Jones, PE



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	Richard Withers, 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

H&H conducted bridge inspections and developed the bridge rehabilitation design plans and specifications for the rehabilitation of the SR 609 and SR 605 bridges under our Mississippi 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.

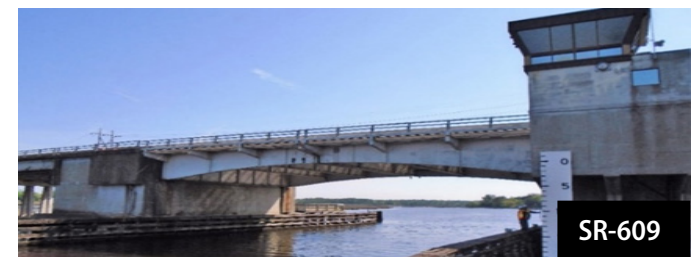
Key Members: Babak Naghavi, PE, PhD; Tim Noles, PE; James Phillips, PE; Andrew Barthle, PE; Marco Lara, PE; Chris Aubert, EI; Dalton Hunt, EI; Erik Diaz, PE; Linh Kim, PE; Travis Kimmins, PE; Donald Marinelli, PE; Steve Mikucki, PE; Alec Noble, PE; Tim Noles, PE; Kenneth Pecquet, PE; Chris Svara, PE; Rob Vicedo, PE; and Fred Wetekamm, PE

Scope of Work Relevant to the Contract

- Structural Steel & Concrete Repairs and/or Replacement
- Mechanical & Electrical Systems Rehabilitation
- Full Containment Cleaning & Painting All Metalwork
- Deck Joints & Seals - Repairs and/or Replacement
- Bearings - Resetting, Repairs and/or Replacement
- Approach Slabs - Repairs and/or Replacement
- Installation of New Navigation Lights, Vertical Clearance Gauges, & Conduits
- Replacement of Missing Reflective Pavement Markers
- Guardrail Repairs and/or Replacement
- Maintenance of Traffic
- Operator House & HVAC Improvements
- Load Rating



SR-605



SR-609

Firm name	Moffatt & Nichol Inc.	Discipline(s)*		Bridge	
Project name	LaDOTD Complex Bridge Inspection			Firm responsibility (prime or sub?)	Sub
Project number	H.009730.5, Task Order 03	Owner's name	Louisiana Department of Transportation and Development		
Project location	Statewide, Louisiana		Owner's Project Manager	Stephanie Doolittle, P.E.	
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, Louisiana 70802 225-379-1329, stephanie.doolittle@la.gov				
Services commenced by this firm (mm/yy)	02/23	Total consultant contract cost (\$1,000's)			\$470
Services completed by this firm (mm/yy)	12/24	Cost of consultant services provided by this firm (\$1,000's)			\$260

M&N was part of a team responsible for performing bridge inspection of complex structures statewide, utilizing an IDIQ contract. Structure types include cantilever trusses, cable-stayed bridges, steel vertical lift bridges, and plate girder bascule bridges. Tasks include providing bridge inspections, SPRAT/rope access, underwater inspections, bridge ratings, categorization and documentation of bridge assets, and the development of the LaDOTD BIM and the Coding & Field Guide. All statewide inspections of in-service bridges throughout Louisiana are performed in accordance with FHWA guidelines. Representative tasks include the following. The comprehensive in-depth reports included a detailed summary of the rope access inspection methodology, inspection findings of current conditions and noted deficiencies, field notes, and photographs.

M&N developed major updates to the manual, including off-system directives, to support the creation of a new Bridge Load Rating Manual and a new Coding & Field Guide. A team of subject matter experts contributed to the development and reviews at periodic milestones. M&N collaborated with the LaDOTD staff throughout the development to manage expectations and maintain direction. In-person progress meetings occurred monthly, which included facilitating various District Bridge Engineers throughout the state. The manual is compliant with the NBIP (23 metrics and the three new metrics). The manual is thoughtfully organized systematically and interactively, with an appendix to store all vital updated forms for the Bridge Inspection Program. The Load Rating Manual will be the final development task and complement the other documents in content and format. The Coding & Field Guide is uniquely designed for a seamless navigation experience. Following delivery, acceptance, and publishing, a training module will be designed and delivered to all LaDOTD District personnel.

M&N has been retained for five years to provide annual updates as needed.

Key Members: Chace Hulon, PE, ADCI; Bryan Tyson, PE, ADCI; Chip Eschenbach, ADCI, CWI; and Jeffrey Gazarek, ADCI

Scope of Work Relevant to the Contract

- BIM
- Underwater Bridge Inspection and Assessment
- Acoustic Imaging
- Hydrographic Surveying
- NBE and SNBI ratings
- Retainer Contract
- In-Depth Inspection and Reports
- TTC and Work Zone Safety



Firm name	Moffatt & Nichol Inc.	Discipline(s)*	Bridge
Project name	LaDOTD Underwater Bridge Inspections		Firm responsibility (prime or sub?) Prime
Project number	H.009730.5, Task Order 2	Owner's name	Louisiana Department of Transportation and Development
Project location	Statewide, Louisiana	Owner's Project Manager	Stephanie Doolittle, P.E.
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, Louisiana 70802, 225-379-1329, stephanie.doolittle@la.gov		
Services commenced by this firm (mm/yy)	06/22	Total consultant contract cost (\$1,000's)	\$2,402
Services completed by this firm (mm/yy)	08/25	Cost of consultant services provided by this firm (\$1,000's)	\$1,416

As part of a five-year retainer contract, M&N has been tasked with performing underwater bridge inspections for over 500 bridges throughout the state of Louisiana through Task Order 2 and over 800 bridges across all three task orders on this contract. The bridges consist of small to mid-sized waterways along with nine bridges passing through large swamps and bayous that vary between 3 and 14 miles long, 15 culverts, and four bridges crossing over large waterways (the Mississippi River, Prien Lake, and Whiskey Bay Channel). Many of the bridges crossed over waterways inhabited by alligators, which posed a potential hazard to the inspectors. To mitigate the probability of an incident, M&N implemented a Louisiana Department of Wildlife and Fisheries-approved nuisance alligator trapper during inspections at specific locations. M&N has safely performed Level I, II, and III underwater dive inspections and emergency damage assessments while augmenting 2D and 3D sonar technologies per the NBIS.

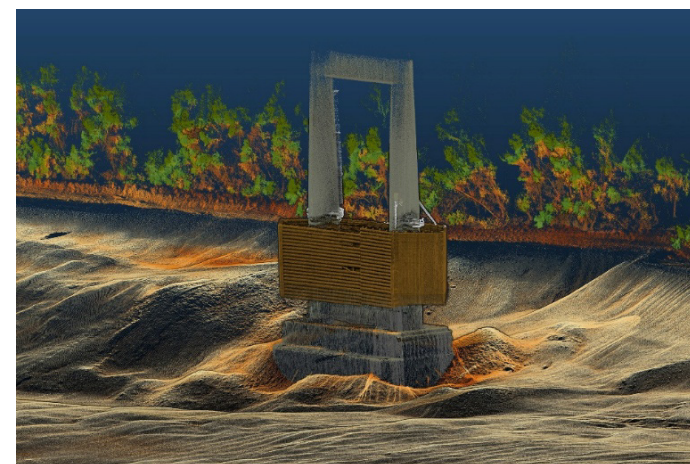
The M&N dive team captures images and bathymetric data utilizing high-resolution side scan sonar units and multibeam sonar technology. High-resolution images and point cloud data of bridge piers/bents are collected to identify channel bottom conditions and structural deterioration. Underwater acoustic imaging services were provided over large navigable waterways with high-risk diving conditions such as fast currents, low visibility, heavy debris, extreme depths, cold water, and vessel traffic.

Scour evaluations (inherent to underwater bridge inspections) are vital to the inspection and report process. All inspector-divers are trained to observe soundings near submerged substructure units, channel migration/alignment, bank erosion, channel bed material, condition of scour protection structures and channel training devices, flow velocity, timber debris quantity and location, major changes in watershed and hydraulic capacities from upstream development and construction; and to review all conditions in real-time on-site to establish a rate of scour and erosion for effective prioritization of repairs and development of scour plan of actions for monitoring.

Key Members: Chace Hulon, PE, ADCI; Bryan Tyson, PE, ADCI; Charles Balzarini, PE; Chip Eschenbach, ADCI, CWI; and Jeffrey Gazarek, ADCI

Scope of Work Relevant to the Contract

- NBIS Underwater Bridge Inspection and Reporting
- Underwater Acoustic Imaging and Hydrographic Surveying
- NBE and SNBI ratings
- Retainer Contract
- InspectX Submittals
- High-Risk Diving Operations and Hazardous Wildlife
- Emergency Response
- TTC and Work Zone Safety



Firm name	Moffatt & Nichol Inc.	Discipline(s)*	Bridge
Project name	LaDOTD BIM and Coding & Field Guide - 2024	Firm responsibility (prime or sub?)	Sub
Project number	H.009730.5, Task Order 3	Owner's name	Louisiana Department of Transportation and Development
Project location	Statewide, Louisiana	Owner's Project Manager	Stephanie Doolittle, P.E.
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, Louisiana 70802, 225-379-1500, stephanie.doolittle@la.gov		
Services commenced by this firm (mm/yy)	02/23	Total consultant contract cost (\$1,000's)	\$470
Services completed by this firm (mm/yy)	12/24	Cost of consultant services provided by this firm (\$1,000's)	\$430

M&N was tasked with revising the BIM for the LaDOTD Bridge Program to incorporate the 2022 NBIS Final Rule. The new policies and procedures included the following documents:

- **LaDOTD On-System BIM**
- **LaDOTD Off-System BIM**
- **LaDOTD Coding & Field Guide**

While the above documents have been completed, the LaDOTD Bridge Load Rating Manual development is currently in progress. M&N collaborated with the LaDOTD staff throughout the development to meet expectations and maintain their input, direction, and compliance. In-person progress meetings occurred monthly, including meetings with various District Bridge Engineers throughout the state.

The BIM policies and procedures were completed and published in December 2024, were fully implemented in January 2025, and will be fully compliant for the FHWA audit in 2028.

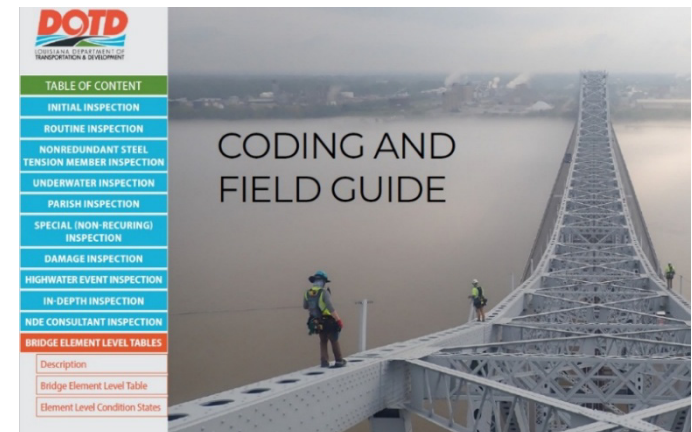
Updates to the LaDOTD BIM were largely a result of the 2022 NBIS Final Rule regulations, and included topics such as:

- **Replaced the 1995 Coding Guide with SNBI.**
- **Inventory now includes private bridges on public roads and temporary bridges open to traffic.**
- **Two methods for risk-based inspection intervals.**
- **Enhanced personnel qualifications, specifically for NSTM and Underwater Team Leaders.**
- **Critical finding reporting with monthly reports.**
- **Load rate for routine and special permit loads.**
- **Load post within 30 days of a valid load rating.**

Allowance for advanced technologies and Unmanned Aerial Systems that may supplement traditional methods.

Scope of Work Relevant to the Contract

- **Inspection and Reporting Standards**
- **Inspection Techniques**
- **Safety and Risk Management**
- **Retainer Contract**
- **Training and Certification**
- **Technology and Tools**
- **Innovation**
- **QA/QC Procedures**



Key Members: Chace Hulon, PE, ADCI; and Bryan Tyson, PE, ADCI

Firm name	A P S Engineering and Testing, LLC		Discipline(s)*	Geotech	
Project name	I-10 Widening LA 415 to Essen LN			Firm responsibility (prime or sub?)	Prime
Project number	H.004100	Owner's name	DOTD		
Project location	Baton Rouge, Louisiana			Owner's Project Manager	Kristy Smith, P.E.
Owner's address, phone, email	1201 Capital Access Rd., Baton Rouge, LA 70802-4438/ 225-379-1016/ kristy.smith2@ls.gov				
Services commenced by this firm (mm/yy)	09/19	Total consultant contract cost (\$1,000's)			N/A
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm (\$1,000's)			\$600K

SCOPE: Comprehensive Geotechnical Investigation and Design Support

A P S Engineering and Testing, LLC performed a comprehensive geotechnical investigation to provide the client with all necessary subsurface information for the planning and design of the I-10 widening project between the Washington Street Exit and LSU Lakes.

The scope included the drilling and sampling of 77 deep borings, consisting of 16 over-water borings and 61 land borings, strategically located to address anticipated deep foundation and MSE Walls design needs. Our field operations incorporated multiple drilling techniques to address varying site conditions, and all sampling was conducted in accordance with ASTM and DOTD standards. The project required complex over-water operations with specialized equipment mobilization and safety compliance procedures. Laboratory testing was performed exclusively in our AASHTO-Accredited Geotechnical Laboratory, including:

- Soil Classification – **ASTM D2487 (Unified) / ASTM D3282 (AASHTO)**
- Natural Moisture Content – **ASTM D2216**
- Liquid limit, plastic limit, and plasticity index -**ASTM D4318**
- Grain Size Analyses – **ASTM D422**
- Minus No. 200 Wash Sieve Analysis – **ASTM D1140**
- Unconsolidated Undrained (UU) Triaxial Tests – **ASTM D2850**
- One-Dimensional Consolidation Testing – **ASTM D2435**
- Specific Gravity – **ASTM D854**

All results were subjected to **QA/QC review by senior geotechnical engineers**, ensuring that the design team received reliable engineering parameters for design. As a result, a geotechnical report was prepared with **site-specific design recommendations** for deep foundations, embankment stability, and MSE wall structures, enabling the client to move forward with confidence in the design phase.

Scope of Work Relevant to the Contract

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



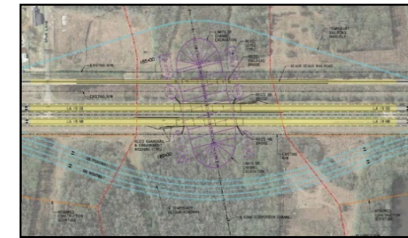
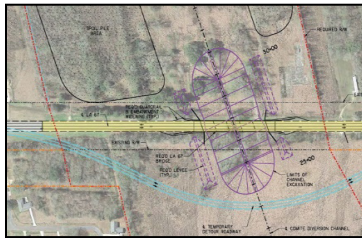
Key Members: Sergio Aviles, P.E.; Sai Eddanapudi, M.E., P.E.; Surendra Pathak, P.E.

Firm name	A P S Engineering and Testing, LLC		Discipline(s)*	Geotech	
Project name	Comite River Diversion Bridge at LA-67, LA-19 and LA-19 Railroad Bridge			Firm responsibility (prime or sub?)	Sub
Project number	H.001352; H.002273	Owner's name	Huval & Associates, Inc.		
Project location	East Baton Rouge, Louisiana		Owner's Project Manager	Thomas M. Gattles III, P.E.	
Owner's address, phone, email	922 West Don't des Mouton Rd, Lafayette, LA 70507 / 337-264-3798/ tgattle@huvalassoc.com				
Services commenced by this firm (mm/yy)	11/19	Total consultant contract cost (\$1,000's)			N/A
Services completed by this firm (mm/yy)	06/22	Cost of consultant services provided by this firm (\$1,000's)			150K

SCOPE – Comprehensive Geotechnical Investigation and Design Support

A P S Engineering and Testing, LLC provided complete geotechnical services to support the planning, design, and construction of multiple structures along the LA-19 corridor, including the LA-19 bridge (slope stability/embankment), LA-19 railroad bridge (embankment/MSE wall settlement/retaining wall), LA-19 twin bridges, and the LA-67 bridge (prestressed concrete piles). The investigation included drilling and sampling of **19 deep borings** ranging from 50 ft to 120 ft, followed by an extensive laboratory testing program in our **AASHTO-accredited laboratory including:**

- Moisture content (**ASTM D2216**)
- Liquid limit, plastic limit, and plasticity index (**ASTM D4318**)
- Unconsolidated-Undrained triaxial compression (**ASTM D2850**)
- One-Dimensional Consolidation (**ASTM D2435**)



Scope of Work Relevant to the Contract

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

All data was analyzed to develop the geotechnical design parameters for **Slope Stability, Settlement, MSE wall, and Deep Foundations design**. As the project advanced into construction, A P S was also retained by DOTD to provide **full geotechnical engineering services during construction**, services included:

- PDA instrumentation and CAPWAP analysis for driven piles
- Field inspection and verification of test piles
- Construction Materials Testing (CMT) for soils, concrete, and aggregates

Key Members: Sergio Aviles, PE.; Sai Eddanapudi, PE.; Surendra Pathak, PE

Firm name	KTA-Tator, Inc.		Discipline(s)*		Bridge		
Project name	Krotz Springs Bridge				Firm responsibility (prime or sub?)		Sub
Project number	4400025311 task order	Owner's name	LADOTD (Hardesty & Hanover, LLP – prime consultant)				
Project location	St. Landry Parish, LA			Owner's Project Manager		Babak "Bobby" Naghavi, PE, PH, PhD (H&H)	
Owner's address, phone, email		3850 N. Causeway Blvd., Suite 1625, Metairie, LA 70002, 504-605-7940, bnaghavi@hardestyhanover.com					
Services commenced by this firm (mm/yy)		09/23	Total consultant contract cost (\$1,000's)				\$5,000
Services completed by this firm (mm/yy)		02/24	Cost of consultant services provided by this firm (\$1,000's)				\$12

The Krotz Springs Bridge is owned and operated by LADOTD. The bridge was constructed in 1973 and consists of eastbound and westbound structures. Each bridge carries two lanes of vehicle traffic over the Atchafalaya River in Krotz Springs, Louisiana. The bridges consist of a 3-span truss main span that measures 780 ft.

The coating history indicates that the westbound bridge was last coated in December of 2017 and the eastbound bridge was last coated in May of 2016, both with a coating system consisting of a zinc epoxy primer, epoxy intermediate, and urethane finish.

In September 2023, as a subconsultant to Hardesty & Hanover, LLC, KTA performed a coating condition assessment on both structures. The purpose of this assessment was to determine the coating of the existing coatings on the structure in order to develop a maintenance painting strategy for the bridge.

A visual assessment of the coated surfaces was conducted to determine the type, extent, and location of coating breakdown and corrosion on the structure. Coating thickness, number of coats, and adhesion were determined using appropriate instrumentation.

Samples were removed for further laboratory examination to determine if toxic metal concentrations were present in the existing coatings and to generically identify the coating type. Photographs of typical coating conditions were taken.

The results of the field and laboratory testing, a discussion of those results, and photographs were included in a report prepared and submitted to H&H.



Photo Courtesy of KTA

Key Member: Robert Lanterman

Firm name	KTA-Tator, Inc.		Discipline(s)*		Bridge	
Project name	Fort Duquesne Bridge				Firm responsibility (prime or sub?)	Sub
Project number	N/A	Owner's name	Pennsylvania Department of Transportation (Michael Baker International – prime consultant)			
Project location	Pittsburgh, PA			Owner's Project Manager	Justin Bouscher, Michael Baker	
Owner's address, phone, email		100 Airside Drive, Moon Township, PA 15108, 412-269-6471, jbouscher@mbakerintl.com				
Services commenced by this firm (mm/yy)		06/25	Total consultant contract cost (\$1,000's)			Unknown
Services completed by this firm (mm/yy)		Ongoing	Cost of consultant services provided by this firm (\$1,000's)			\$37

The Fort Duquesne Bridge is a steel bowstring arch bridge over the Allegheny River in Pittsburgh, PA.

It carries vehicular traffic in a total of eight lanes (four on the upper deck, four on the lower deck).

It is owned and maintained by the Pennsylvania Department of Transportation.

Portions of the bridge are currently undergoing a rehabilitation project which includes the coating system.

As a subconsultant to Michael Baker International, as part of the preliminary design services, KTA is providing a coating condition assessment, sampling, laboratory testing, and waste handling recommendations for this project.

Environmental services included the removal of coating samples, supervision of laboratory analysis for the presence of toxic metals and asbestos, and the development of waste handling recommendations and contract documents for the handling of hazardous waste during the coating rehabilitation operations.



Photo Courtesy of Wikipedia

Key Members: Robert Lanterman and Daniel O'Malley

Firm name	Providence Engineering and Environmental Group LLC		Discipline(s)*	Environmental	
Project name	Replacement of Eight (8) Bridges: H.011963 - LA 648: Drain Canal Bridge			Firm responsibility (prime or sub?)	SUB
Project number	State Project No. H.011963 F.A.P. No. H011963	Owner's name	Aucoin & Associates, Inc.		
Project location	Lafourche, Louisiana		Owner's Project Manager	David Hildago	
Owner's address, phone, email	710 W. Prien Lake Road, Lake Charles, LA 70601, (337) 457-7366, d.hidalgo@aucoinandassoc.com				
Services commenced by this firm (mm/yy)	07/23	Total consultant contract cost (\$1,000's)			N/A
Services completed by this firm (mm/yy)	09/23	Cost of consultant services provided by this firm (\$1,000's)			\$13

The Louisiana Department of Transportation and Development requested a Wetland Findings Report for two existing bridges in Lafourche Parish as part of a larger off-system bridge replacement project. As a subconsultant to Aucoin & Associates, **Providence conducted a wetland delineation and provided a Wetland Findings Report** for the bridge replacement project.

Providence biologists documented existence of potential jurisdictional wetlands and non-wetland waters at the sites in accordance with the **1987 Corps of Engineers Wetland Manual** and guidance from the **Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region** (USACE, Wetland Regulatory Assistance Program 2010). After the wetland delineations, Providence prepared a Wetland Findings Report which included discussions of existing wetlands, vegetation communities, and soils based on published soil surveys and soil sampling.

The report indicated that evidence of all three diagnostic characteristics for jurisdictional wetlands was not found at any sample location, and the presence of two diagnostic characteristics was not sufficient to confirm the presence of potential jurisdictional wetlands. Data sheets, photographs, and wetland mapping were also included in the Wetland Findings Reports.

Providence also prepared and submitted a USACE/Louisiana Department of Energy and Natural Resources (LDENR) Joint Permit Application, as well as coordinated necessary Solicitation of Views (SOV) and clearance documentation for this project.

Providence staff completed a similar scope of work on other bridge replacements including bridges in Calcasieu (SPN 700-10-0164), St. Mary (SPN 700-51-0111), St. Helena (SPN P46-30419-90470-1), and Tangipahoa (H.014262, H.014263) Parishes.

As reflected in both the On- and Off-System Bridge Projects included, Providence possesses a strong understanding of desired deliverables, timelines, and tasks for projects of this structure, size, and desired outcomes.

Key Members: Chad Turner



Firm name	Providence Engineering and Environmental Group LLC		Discipline(s)*		Environmental	
Project name	MRB South GBR: LA 1 to LA 30 Connector Route: New Route				Firm responsibility (prime or sub?)	SUB
Project number	SA#6, H.013284; FAP #H013284	Owner's name	Atlas Technical Consultants, LLC			
Project location	Ascension, East Baton Rouge, Iberville and West Baton Rouge Parishes, Louisiana			Owner's Project Manager	Kara Moree	
Owner's address, phone, email		8440 Jefferson Highway, Suite 400, Baton Rouge, LA 70809, (225) 369-6587, kara.moree@oneatlas.com				
Services commenced by this firm (mm/yy)		01/23	Total consultant contract cost (\$1,000's)			N/A
Services completed by this firm (mm/yy)		06/25	Cost of consultant services provided by this firm (\$1,000's)			\$25

A supplemental agreement was issued by DOTD to Atlas to obtain environmental approvals based on the findings of the complete Enhanced Planning investigation for the proposed new Mississippi River bridge construction. Atlas contracted Providence to assist with this overall project management, environmental documentation support, and related environmental services.

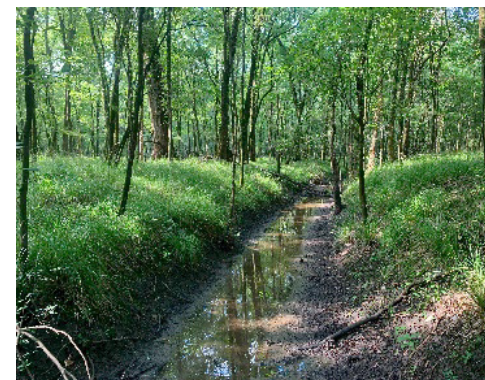
Providence's specific scope of work including ensuring overall NEPA compliance, conducting wetland delineations, and conducting a Phase I Environmental Site Assessment. Providence will also continue to provide agency, stakeholder, and public outreach support during all pre-NEPA phases of the project. Providence anticipates providing more environmental services as the project progresses and potentially during construction.

The wetland delineation encompassed approximately 1,716 acres of forests, agricultural fields/pastures, residential properties, pipeline/utility rights-of-way, highway/railroad rights-of-way, industrial facilities, and Mississippi River levee and batture.

Multiple teams of Providence biologists conducted surveys from July to August 2024, collecting field data, habitat descriptions, and other pertinent information in accordance with the 1987 Corps of Engineers Wetland Manual and guidance from the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (USACE, Wetland Regulatory Assistance Program 2010).

The resulting Wetland Findings Report documented 364 acres of Section 404 wetlands and 26.78 acres of Section 10/404 wetlands, including bottomland hardwoods, baldcypress/water tupelo swamps, and baldcypress swamps.

Additionally, Providence conducted habitat evaluations according to the USACE Louisiana Rapid Assessment Method (LRAM) Habitat Condition factor. Each wetland was classified on the three condition levels by habitat (low, medium, and high) and documented in the Wetland Findings Report.



Key Members: Chad Turner

Firm name	Providence Engineering and Environmental Group LLC		Discipline(s)*	Environmental	
Project name	Calcasieu River Bridge (HBI) Calcasieu Parish			Firm responsibility (prime or sub?)	SUB
Project number	#4400032049 S.P. No. H.003931.6	Owner's name	Coastal Environments, Inc.		
Project location	Calcasieu Parish, Louisiana		Owner's Project Manager	David Kelley, PhD	
Owner's address, phone, email	1260 Main Street Baton Rouge, LA 70802, 225-383-7455				
Services commenced by this firm (mm/yy)	08/2025	Total consultant contract cost (\$1,000's)			N/A
Services completed by this firm (mm/yy)	On going	Cost of consultant services provided by this firm (\$1,000's)			\$90

The Calcasieu River Bridge is between Lake Charles and Westlake, Louisiana, and opened to traffic in 1952. It became part of the Interstate system in the 1960s with the construction of Interstate 10 (I-10). Although the bridge was rehabilitated in 2011–2012, additional improvements are necessary to accommodate future projected traffic growth. The Project limits extend generally from the I-10/I-210 interchange on the west side of the Existing Bridge to east of the Ryan Street exit ramp on the east side.

The Project will involve the construction of a New Bridge, located north of the Existing Bridge, along with new approaches and modifications to existing interchanges and roadways within the Design-Build (DB) Limits. Open road tolling equipment will be installed for the New Bridge, with all tolling services, including payment processing and customer support, provided as part of the Project. Additionally, the Project includes operations and maintenance (O&M) for a term of 50 years.

Providence is assisting with cultural resource compliance for this project by providing additional archaeological field technician support during the Phase III data recovery at site 16CU128 (Norris Point Archaeological Site). This site has been deemed eligible for listing in the National Register of Historic Places under Criterion C and has been recommended for comprehensive mitigation through data recovery. The site features a well-preserved prehistoric shell midden consisting of two distinct stratigraphic layers, along with historic material deposits linked to a sawmill that operated in the late 19th to early 20th century.

Providence's involvement in this mitigation phase reflects our understanding of the project's cultural resource sensitivities and our ability to conduct archaeological work in accordance with the regulatory framework of Section 106.

Key Members: *Elizabeth Hunt, RPA*

Firm name	Chustz Surveying, LLC			Discipline(s)*		Survey	
Project name	US 71: UPRR Overpass				Firm responsibility (prime or sub?)		Prime
Project number	H.O.15119.5	Owner's name	LA DOTD				
Project location	Rapides Parish, LA				Owner's Project Manager		Stan Ard
Owner's address, phone, email		1201 Capitol Access Rd, Baton Rouge, LA, 70802, 225-379-1101, Stanley.Ard@LA.GOV					
Services commenced by this firm (mm/yy)		02/24	Total consultant contract cost (\$1,000's)				\$148
Services completed by this firm (mm/yy)		07/24	Cost of consultant services provided by this firm (\$1,000's)				\$148

LA DOTD Sate Project No. H.015119.5: Chustz Surveying conducted a topographic survey of the US 71 bridge over the Union Pacific railroad in Rapides Parish. The survey consisted of collecting all topographic features and utilities, both above and underground along 3,000 feet of US 71 and 2,000 feet of railroad from apparent right of way to apparent right of way. Additional drainage features were located within 300 feet of the survey limits for the required Drainage Map.

To collect the required data, Chustz first deployed a crew to the site to establish site control and ground control for LiDAR with static GPS/GNSS and establish the centerline all using Trimble receivers.

This project also required us to collect the low chord of the overpass structure, approximately 25 feet above the ground and under the structure. This effort required the use of our Trimble SX10 total station/terrestrial LiDAR scanner. Our crew was able to successfully set up under the structure and conduct numerous scans, capturing all girders, pilings, caps, abutments, and any other information needed to not only map the structure, but provide an accurate distance between the railroad tracks and the bottom of the overpass girders. To facilitate with data collection on US 71, we utilized our Riegl VUX-1uav Mobile LiDAR system mounted to our truck, safely obtaining the necessary data. The remaining topographic, utility, and drainage features were collected using RTK survey methods.

The terrestrial LiDAR, mobile LiDAR, and RTK data was all processed and adjusted to the static GPS/GNSS network. It was then mapped using Bentley InRoads adhering to the DOTD Software and Deliverable Standards for Electronic Plans and DOTD CAD Standards. Final deliverables included DGN, DTM, ALG, and ASCII files along with utility forms and a survey report. All work performed adhered to our QA/QC plan and was in accordance with the LA DOTD Location and Survey Manual.



Key Members: James H. Chustz, Jr, PLS; Craig Villemarette, TCS; Lonnie Dupont, CST, TCT

Firm name	Chustz Surveying, LLC	Discipline(s)*	Survey
Project name	LA HWY 73 Bayou Manchac Bridge	Firm responsibility (prime or sub?)	Prime
Project number	H.O.12563.5	Owner's name	LA DOTD
Project location	Ascension Parish, LA	Owner's Project Manager	Stan Ard
Owner's address, phone, email	1201 Capitol Access Rd, Baton Rouge, LA, 70802, 225-379-1101, Stanley.Ard@LA.GOV		
Services commenced by this firm (mm/yy)	11/21	Total consultant contract cost (\$1,000's)	\$101
Services completed by this firm (mm/yy)	02/22	Cost of consultant services provided by this firm (\$1,000's)	\$101

LA DOTD State Project No. H.012563.5: Chustz Surveying was tasked to conduct a bridge scour repair survey at Bayou Manchac.

The survey along Bayou Manchac extended a minimum 175 feet upstream and 175 feet downstream from the faces of the bridge and extended a minimum 1150 feet south of the southern end of the bridge to 1675 feet north of the southern end of the bridge along HWY 73.

A complete topographic survey including all utilities and all drainage features were surveyed. Bridge features surveyed included top of roadway deck elevations along centerline and right/left gutterlines, top of guard rail elevations, and centerline of bridge pier locations.

To accomplish this, Chustz deployed multiple crews to the site to begin the static GPS/GNSS survey utilizing Trimble GPS/GNSS receivers and establish the centerline. Once control was established, the crew began collecting the required topographic data using RTK and conventional survey methods with total stations.

Due to the narrow bridge and heavy traffic, Chustz had to collect the required bridge data using aerial LiDAR from our Reigl Ricopter sUAS equipped with a Reigl VUX-1uav laser scanner. Additional terrestrial LiDAR was collected from our Trimble SX10 to determine bridge pile centerlines and any other required bridge features from below. Ground control points for the LiDAR were established utilizing RTK from the primary control.

All data was processed utilizing Trimble Business Center where it was adjusted and constrained to the static GPS.

The data was then mapped in Bentley InRoads and final deliverables included DGN, DTM, ALG, and ASCII files.



Key Members: James H. Chustz, Jr, PLS; Craig Villemarette, TCS; Lonnie Dupont, CST, TCT

Firm name	Urban Systems, Inc	Past Performance Evaluation Discipline(s)*	Traffic
Project name	Huey P. Long Bridge Widening (Westbank and East bank Approaches and Main Bridge Deck Widening)	Firm responsibility (prime or sub?)	Sub
Project number	SP 005-10-0037/006-01- 0021/006/02/0064/006-25 0001/006-30-0041	Owner's name	LADOTD
Project location	Route US 90 Jefferson Parish, LA	Owner's Project Manager	Lee Horstmann
Owner's address, phone, email	1201 Capitol Access Road Baton Rouge, LA 70802, (504)302.2200, lee.horstmann@kiewit.com		
Services commenced by this firm (mm/yy)	02/11	Total consultant contract cost (\$1,000's)	Unknown
Services completed by this firm (mm/yy)	04/13	Cost of consultant services provided by this firm (\$1,000's)	\$49.3K

Urban Systems, Inc. provided Traffic Engineering Services for the Huey P Long Project for the contractor starting about half-way into the construction project. This was a multi-phase project as construction conditions and required closures changed.

A few of the phases that were addressed were:

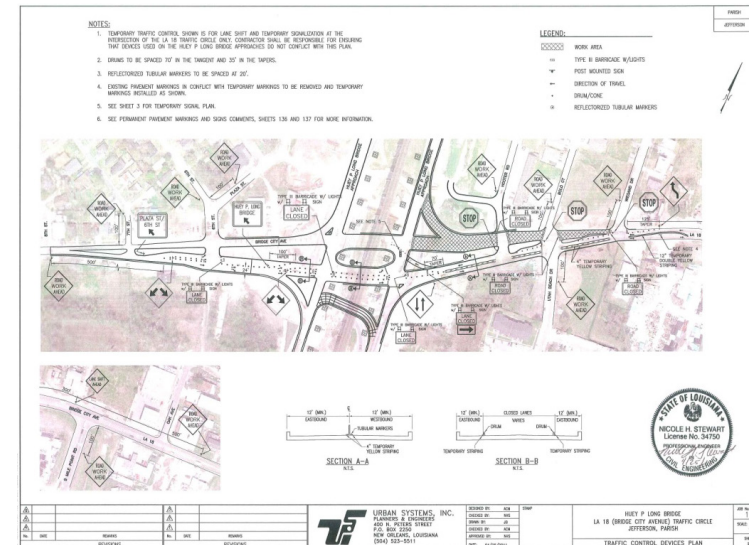
- Jefferson Highway Detours
- Huey P. Long Bridge Southbound Approach Closure
- Huey P. Long Bridge – Rerouting Huey P. Long Northbound Approach

Plans for these phases included the following:

Traffic Control Devices Plans for the redirection and protection of traffic in the active area of construction.

Traffic Signal Plans for the installation of temporary traffic signal heads. The temporary signals were utilized in conjunction with the permanent signal plan. The plans included the temporary striping and signage that were required in addition to the permanent installation.

Permanent Pavement Markings and Signs Plans which were used to identify which signs should be covered and which striping should not be installed during each phase of construction.



Key Members: A. Michel, PE, PTOE, PTP, RSP and N. Stewart, PE, PTOE

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

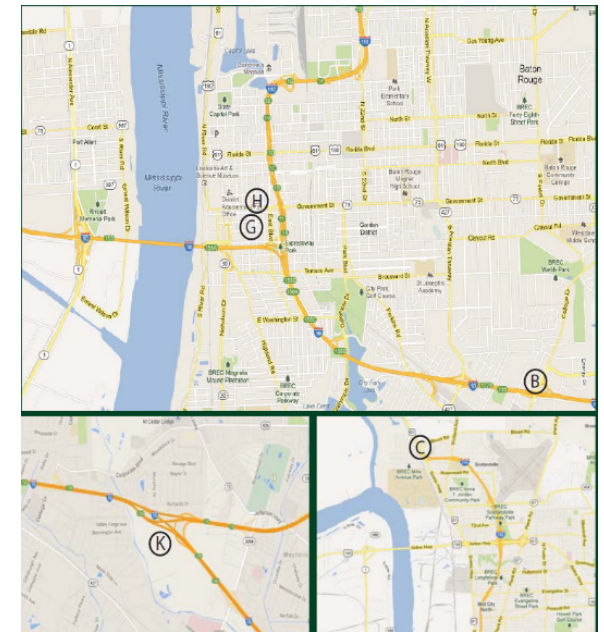
The objective was to conduct a Level 4 Transportation Management Plan (TMP) based on LADOTD EDSM VI.1.1.8 for bridge component repairs at five (5) locations on I-10, I-110 and I-12 in Baton Rouge, Louisiana. A TMP was critical for these locations as the interstates serves up to 85,000 vehicles per day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

Seven-day hourly volume counts were collected and adjusted using LADOTD seasonal and axle factors. A queue analysis was conducted, as specified in LADOTD EDSM VI.1.1.4, to determine when the proposed lane closures could be implemented with the least impact with the high interstate volumes.

A safety analysis was conducted based on the LADOTD's Guidelines for Crash Data Analysis, June 2014. Crash rates were calculated for each location and compared to LADOTD's statewide averages and to LADOTD's High Potential for Safety Improvements (formerly the Abnormally High Crash) List. Charts were developed at each location based on collisions by type, log mile and time.

An important strategy to minimize work zone impacts was an evacuation plan as I-10 and I-110 are critical arteries during a hurricane evacuation.

- A stakeholders meeting was held during the TMP process to obtain input and share information with:
- LADOTD Headquarters
- LADOTD District 61
- LADOTD TMC
- East Baton Rouge Sheriff's Office
- Louisiana State Police
- Baton Rouge Police Department
- Prime and sub consultants



Key Members: Alison Michel, PE, PTOE, PTP, RSP; Nicole Stewart, PE, PTOE; and Matthew Morgan, PE, PTOE

Firm name	Bridge Diagnostics, Inc. (BDI)		Discipline(s)*		Bridge	
Project name	Louisiana Statewide Non-Destructive Testing and Evaluation IDIQ				Firm responsibility (prime or sub?)	Prime
Project number	H.009730	Owner's name	Louisiana Department of Transportation and Development (LADOTD)			
Project location	Statewide, Louisiana			Owner's Project Manager	Bradley Mistich	
Owner's address, phone, email	Office of Engineering PO Box 94245 Baton Rouge, LA 70804-9245 225-379-1200 Bradley.Mistich@la.gov					
Services commenced by this firm (mm/yy)	05/23	Total consultant contract cost (\$1,000's)				\$5,000
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm (\$1,000's)				\$4,607

BDI was awarded the Non-Destructive Testing and Evaluation IDIQ across the state of Louisiana.

Task Order II Twin Span and 6-mile Deck Evaluation: BDI performed deck assessments involving various NDT-E methods including SoundAR, Ground Penetrating Radar (GPR), High Resolution Imaging (HRI), Infrared Thermography (IR), and concrete material sampling on bridge recall numbers 204140, 204150, 020467, and 020468 for the purpose of assessment of reinforcement concrete condition, cover, location, and diameter; detections of voids and delaminations in concrete, and concrete material sampling.

Task Orders III and VI Interstate 20 Deck Evaluation and Pin and Hanger Testing: To assist with bridge preservation efforts, BDI is performing deck assessments for 273 structures on the Interstate 20 corridor in Louisiana involving various NDT-E methods including SoundAR, GPR, HRI, and IR for the purpose of assessment of reinforcement concrete condition, cover, location, and diameter and detection of voids and delaminations in concrete. BDI is also performing steel member condition assessment via ultrasonic testing (UT) on 39 structures statewide.

Task Order IV US-11 over Lake Pontchartrain Deck Evaluation and NBIS Inspection: BDI performed deck assessments involving various NDT-E methods including SoundAR, GPR, HRI, and IR for the purpose of assessment of reinforcement concrete condition, cover, location, and diameter and detection of voids and delaminations in concrete on bridge recall numbers 001525, 001545, 001552, and 200830. BDI also performed the NBIS Routine inspections on these structures which included detailed in-depth field inspections.

Task Order V Bayou Ramos: BDI is performing instrumentation and testing of bridge recall numbers 030115 and 030185 over Bayou Ramos including design of instrumentation plans, instrumentation of sensors, maintenance of sensors, and analysis and evaluation of the accumulated data.



Key Members: Steven Fall, Jr., PE, serves as project manager responsible for the non-destructive testing plan development and application, field testing logistics, field crew management, reporting and QA/QC of various project tasks; Brice Carpenter, PE, serves as project engineer responsible for load rating, instrumentation plan development and application, analysis team management; Brett Commander, PE, and Charles Young, PE, serve as subject matter experts; and Jesse Siple, PhD, PE serves as the services division manager and subject matter expert.

18. Approach and Methodology:

Firm Introduction: With over 138 years of experience, **Hardesty & Hanover, LLC (H&H)** is a trusted, full-service infrastructure engineering firm that delivers innovative and intricate solutions to clients, including infrastructure owners, contractors, and other stakeholders. Our proven ability to manage the entire project life cycle—from study and planning through design and construction—positions us as a reliable partner for the Louisiana Department of Transportation and Development (DOTD). Leveraging our extensive expertise from nationwide Indefinite Delivery/Indefinite Quantity (IDIQ) contracts, we have developed a strategic approach for DOTD's Bridge Preservation IDIQ that aligns with the Bridge Department's vision and priorities, focusing on:

Efficiently utilizing funds to preserve and extend the life of infrastructure assets.

Enhancing safety for bridges and roadways through targeted improvements.

Prioritizing proactive maintenance and preservation strategies for existing infrastructure.

Acting as an extension of the DOTD Bridge Design Section to deliver responsive, high-quality solutions.

Employing advanced technology to position Louisiana as a national leader in bridge preservation and safety.

Our approach builds on our proven experience with DOTD and other state DOT IDIQ contracts. Our flexible, integrated team of over 600 skilled professionals across 32 offices nationwide will ensure adherence to the DOTD Project Delivery Manual, Roadway Design Manual, and Bridge Design & Evaluation Manual, while maintaining strict internal QA/QC protocols.

Our thorough understanding of DOTD's standards and expectations allows us to deliver outstanding results throughout all project phases. Backed by our extensive network of local, regional, and national offices, H&H offers unmatched bridge preservation expertise, providing practical and cost-effective solutions. Our established, collaborative relationships with team members, developed through previous successful DOTD and local agency projects, ensure smooth coordination and exceptional project outcomes.

Project Team: H&H will serve as prime consultant on this IDIQ contract, providing overall project and financial management, QA/QC supervision, as well as highly qualified and well-resourced engineering teams capable of efficiently staffing and completing task orders (TO) of any scale. The H&H team includes multiple subconsultant firms with diverse specialties. Each firm is brought on for their specific expertise and capacity to perform any number of concurrent tasks assigned under this contract expertly and on time, which includes **Moffatt & Nichol, Inc.** with expertise in underwater inspections, **APS Engineering & Testing, LLC** (*geotechnical design engineering and analysis*), **Chustz Surveying, LLC** (*surveying*), **Providence Engineering and Environmental Group LLC** (*environmental engineering and permitting*), **KTA-Tator, Inc.** (*protective coating assessments*), **Urban Systems, Inc.** (*traffic investigation, analysis, and design*), and **Bridge Diagnostics, Inc.** (*NDT and Bridge Instrumentation*).

Our established collaborative relationships with these team members, developed through previous successful DOTD and local agency projects, ensure smooth coordination and exceptional project outcomes.

Project Management: H&H recognizes the critical role of effective TO management for the successful execution of the Bridge Preservation IDIQ contract and is committed to aligning our strategies with DOTD's goals and objectives. The H&H Project Manager (PM) will serve as the primary point of contact and will oversee the coordination of the project team, scope

definition, scheduling, and deliverable preparation, ensuring full compliance with DOTD's project delivery standards. With extensive experience as a bridge task lead and a proactive management style, the PM will facilitate consistent and regular communication with the DOTD PM to ensure seamless collaboration and coordination.

H&H Bridge Preservation Capabilities

– Inspections, Load Ratings, & Evaluations	– Fatigue Analysis/Evaluations
– Steel Coating Assessments	– Movable Bridge Repair & Replacement
– Forensic Analysis	– Truss Repair
– NDT/Proof Testing	– Heat Straightening
– Infrared Deck Scans/Chloride Ion Testing	– Foundation Repair/Scour Mitigation & Analysis
– Bridge Deck Hydro-Demolition	– Timber Bridge Repairs
– Deck Resurfacing	– Concrete FRP Repairs
– Deck Widening	– Epoxy Injection Repair
– Bearing Repair/Replacements	– Post-Tension Strengthening
– Strain Gaging	– Historic Bridge Preservation

This contract involves providing bridge engineering services for various fixed and movable bridges. Bridge project types may include, but are not limited to, new bridges, bridge replacements, bridge rehabilitation, bridge preventive maintenance and repair, and roadway lighting. The contract also participates in statewide Bridge Preservation Programs aimed at enhancing bridge conditions to ensure safety and support economic growth. Bridge engineering services include, but are not limited to, structural, mechanical, electrical, and architectural feasibility, design, and plan development, including the following:

- Inspection and evaluation of existing fixed and movable bridges or other structures (sign trusses, fender systems, etc.) and preparation of the report.
- As-designed, as-built, and condition bridge load ratings.
- Peer review of developed plans or conceptual designs to verify concept, constructability, and accuracy of designs, along with associated reports, conclusions, calculations, and recommendations as needed.
- Construction engineering support, including construction means and methods review, shop drawing review, request for information support, contractor proposals, etc.
- Sampling, instrumentation, and non-destructive testing.
- Geotechnical investigations and testing.
- Road design and traffic analysis services.
- Survey mapping and title work research services.
- Environmental and permitting

H&H will implement a proven approach to address the multidisciplinary aspects and challenges of various bridge projects. Our PM will be supported by a highly qualified staff of engineers experienced in fixed and movable bridge inspection, rehabilitation, and design. Each bridge project will be assigned a PM and a team of Discipline Leads that possess the relevant experience for the fixed or movable bridge structural, mechanical, electrical, and architectural design. Each team will be supported by project Technical Advisors and a team of QA/QC Leads. This senior group will work with the PM to assign production and QC staff experienced with the

specific bridge type and anticipated scope of work. Assigning dedicated project staff with the relevant expertise and experience to each bridge project is essential to ensuring each bridge receives the focus needed to achieve project success. Our staff experience is derived from delivering more than 30 new bridge projects and more than 100 rehabilitative bridge projects in the past 10 years. H&H also has the largest movable bridge staff in the U.S., including a full staff of structural, mechanical, and electrical engineers located in our New Orleans Office.

For bridge rehabilitation and repair projects H&H will develop a design approach that echoes the information contained in Part 1 Chapter 6 – Design Policy for Bridge Rehabilitation/Repair Project of the LADOTD BDEM.

- Reviewing all existing project documents
- Field investigations of the existing bridge
- Load capacity evaluation of the structure
- Scoping proposal and report
- Summary of the evaluation results and recommendations

As the first order of business, our PM will prepare a Project Management Plan (PMP), including project schedule and Quality Management Plan addressing work through delivery for each task. The PMP will be based on the DOTD template and will be updated following a scope of work meeting with the DOTD and subconsultants prior to initiating the design phase. An example of a typical bridge rehabilitation schedule is shown below:

Typical Project Schedule																					
Task	Duration (Wks)	Months																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Document Review	4																				
2. LRFR Load Rating	8																				
3. NBIS Inspection/Report*	8																				
4. Scope of Work Proposal	2																				
5. Scope of Work Meeting	2																				
6. Design, Documentation	44																				
7. Permitting*	30																				
8. SHPO Coordination*	10																				
9. Pre-Bid	12																				

Document Review (Pre-Inspection Activities): H&H will work with DOTD to collect all available information on the bridges. The information will be reviewed and summarized for inclusion in the assessments. Desktop surveys and/or coordination with agencies such as the USCG, USACE, utility owners, emergency services, and other identified stakeholders, will be performed to determine the site or operational constraints that may affect scope or cost. The PM and Discipline Leads will prepare an NBIS in-depth inspection plan with a focus on safety and identification of conditions that may impact the scope of work. We will meet with DOTD staff to determine resiliency goals such as criteria for design events, flood elevations, and design vessels. This approach will enable effective and efficient evaluation while in the field. For movable bridges, we will coordinate with DOTD to obtain the operation and maintenance manuals from each bridge. This information will be used to assess the current movable bridge equipment and to determine areas to focus on and verify during the inspections.

Evaluation of Load Carrying Capacity: H&H will perform LRFR load ratings, as amended by DOTD BDEM and BDTMs. For rehabilitation projects, if the bridge does not have a current load rating on file, we will perform as-built and as-is condition load ratings prior to inspection to assess strengthening needs and identify specific members that may require additional attention during the inspection. Our team has extensive experience with AASHTOWare Bridge Rating (BrR), and we have applied our load rating expertise to over 2,000 bridges in the past 10 years. For more complex bridges, we will develop 3D finite element models using MIDAS, CSI Bridge, or other approved software as required to accurately determine load rating. Refined analysis techniques can also be used to avoid load postings in some cases.

Field Investigation: H&H qualified inspectors with FHWA training will perform the required detailed in-depth inspections per NBIS, AASHTO and BDEM requirements. Our team's extensive experience and certifications in bridge inspections will be utilized to identify the root cause of deficiencies, which will inform the development of an appropriate plan of action for the scoping proposal. Existing conditions often vary from as-built plans; detailed field reviews are a standard protocol for H&H. A review of the as-built plans will be performed with special attention to identifying fatigue-sensitive details. As needed, we will utilize 3D laser scanning to determine conditions and confirm fit-up of proposed modifications. The team will consist of certified TL and Inspectors. The inspection team may be supplemented with additional TLs and/or Inspectors due to time constraints for inspection access or to expedite the inspection. Scheduling multiple teams within a lane closure will minimize the number of closures required for inspection and reduce the inconvenience to the traveling public. The QC Engineer will be on-site periodically to provide additional support to the team and answer questions about inspection procedures, documentation, and other logistics issues that may arise. H&H will review previous inspection reports to determine the appropriate inspection procedures, required equipment, areas of concern, and areas that may require special cleaning.

The H&H team will be available to meet on-site with District Bridge Maintenance personnel at the start and at the end of fieldwork. Our engineers will conduct interviews with maintenance personnel to gather operational history and identify recent bridge maintenance issues. These meetings will supplement the "snapshot" of conditions evident in an inspection and provide an awareness of ongoing or intermittent bridge issues. Our engineers will inspect the bridge systems, paying extra attention to issues noted during the interviews and to typical failures that fall outside the applicable AASHTO, DOTD, and FHWA inspection and evaluation manuals. Follow-up meetings will be held to review critical issues, discuss root causes, and explore

potential solutions to notable conditions. Inspections and documentation will comply with DOTD requirements. Inspection methods will include traditional hands-on inspections and/or drone inspections of structures. Technical access will be performed by SPRAT-certified inspectors when applicable. Key systems and bridge elements will be reviewed for vulnerabilities to hurricane/flood damage and vessel impact. Inspection will follow fall protection and confined space access, safety precautions. Our Field notes will be explicit regarding the condition of the elements, including quantitative measurements of deficiencies (e.g., concrete hollow-sounding areas, spall sizes, crack lengths and widths, section losses, etc.). Field sketches will include, at a minimum, bearing conditions, spalls, damp areas, hollow-sounding areas, cracks on structural concrete decks and substructures, visible deformation damage on structural elements, deficiencies due to deterioration, and other deficient conditions that affect the structural integrity of the bridge. 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 exfoliation and expose the remaining bare steel, consistent with the physical inspection. Our subconsultant, Moffat & Nichol, will assist during underwater inspections when needed.

Machinery Systems Inspections (Movable Bridges): In addition to standard machinery inspection processes outlined in the AASHTO Manual, our movable bridge engineers will inspect the systems, bringing the knowledge of items that fall outside the standard manual. Our inspections will include assessing the vulnerability of movable bridges to flood damage with machinery located close to the flood elevation. Our inspectors are also designers allowing focus on improvements that can be made within existing spatial confines to improve durability, performance, and maintainability. **Electrical Systems Inspections (Movable Bridges):** The electrical inspections will consist of a visual, aural, and operational testing of the bridge electrical equipment outlined in the DOTD Bridge Inspection and AASHTO Manuals. Particular attention will be given to the condition of existing selsyn transmitters and receiver systems used for span position on the control desk, electrical equipment survivability in the event of hurricanes or flooding, motor loading and insulation condition, and control system interlocks.

Sampling, Instrumentation, and Non-Destructive Testing (where required): Our subconsultant, BDI, will provide sampling, instrumentation, and NDT services for this contract. These services may include, but are not limited to, collection of samples of materials from existing structures for evaluation, estimation of concrete strength, assessment of reinforcement condition, detection of cracks and voids, diagnostic and/or proof testing to determine specific structure response characteristics and/or to determine the causation of observed distress, including magnetic particle and UT discussed above. Instrumentation will include design of the instrumentation plans, installation, data acquisition, analysis, and evaluation of the structure based on the instrumentation plan. Our subconsultant, KTA-Tator, Inc. will provide assessment and evaluation of protective coating material samples for the determination of compatibility with proposed coatings, analysis for heavy metals, proper procedures for treatment and handling, and disposal of waste.

Scope of Work Proposal and Meeting: Based on the results of the load rating and field investigation a baseline data set documenting current and potential future problems with the bridge will be developed. Assessment will include options to improve various aspects of the bridge, including hydraulic design, roadway alignment, environmental, roadside safety, and vessel or vehicular impact vulnerability. When applicable, repairs will consider the cost of the

repair/improvement or replacement, and value-added to include better maintenance access, improved reliability, easier maintenance, better survivability of systems during storm events, the safety of vehicular traffic, marine traffic, pedestrians, and Department employees, permanence of repair, and marine/vehicular closure time during construction. From this exercise, we will develop a preliminary corrective action matrix for both short-term (10-15 years) and long-term (e.g., 40 years) repairs, including cost estimates and probable impacts on navigation and/or vehicular traffic. Proposed repair items will be categorized as high, medium or low priority. A meeting with DOTD will be held to finalize the items to be included in the project scope.

Repair and rehab issues include:

- Forensic analysis to know the source of problems and fix the root cause vs. “patch” the defect
- Establish rational cost estimates and schedules
- Multi-disciplined approach for the interface of structural, mechanical, electrical, and architectural work
- Owner preferences for systems and equipment
- Address preservation where required
- Develop and implement strategies to strengthen bridges that require load posting

Bridge Evaluation Report: Upon approval of items identified in the scoping proposal, a bridge evaluation report will be prepared. The bridge evaluation report will summarize the results for the structure. The report will include the following information:

- A summary of all identified deficiencies, including all supporting documents, such as as-built plans, field inspection notes and photos
- A summary of bridge rating and design analysis results
- Clear recommendations for either rehabilitation/repair or replacement with justifications
- Scope of work and justifications for all identified deficiencies if rehab/repair is recommended

The report will be stamped by the Engineer of Record and submitted to DOTD for a final decision on the scope.

Bridge Replacement: When bridge repairs are insufficient to prolong the structure's lifespan or address load capacity requirements, a recommendation for bridge replacement is typically made. The bridge replacement follows a more typical process regarding DOTD milestones and review. These TOs generally progress through the phases outlined below:

1. The first phase of a bridge replacement project is the study phase in which different alternatives are explored based on the conditions present at the bridge site. Different bridge types, sizes, and alignments are evaluated, and the advantages and disadvantages of each alternative are weighed. Surveying, engineering analysis, and permitting requirements may also be necessary during this phase.
2. After the preferred bridge alternative has been approved, the next phase is the development of Preliminary Plans. During this phase, the deliverables schedule and project milestones are established. The primary focus of the Preliminary Plans is to assess the potential impacts on the right-of-way and the environment. During the Preliminary Plans phase, roadway and traffic design are performed. A Plan-in-Hand meeting is held with DOTD and other stakeholders to obtain any input and comments prior to the completion of Preliminary Plans.
3. The next phase of a bridge replacement project is the Final Plans phase in which the details of the bridge and roadway are finalized. This phase includes obtaining environmental and permitting approvals, as well as assembling the bid package.

4. The final phase of a bridge replacement project is the Construction Services. During this phase, the design engineer may be required to review shop drawings and respond to RFIs. H&H has extensive experience in executing new bridge replacement projects and complying with LADOTD's submittal procedures and requirements.

Construction Plans and Documents: H&H will collaborate closely with the DOTD PM to establish the project timeline and incorporate the latest DOTD requirements for milestone submissions, encompassing Technical Specifications, Preliminary Plans and Final Plans. This will include adherence to the latest approved Greenbook, DOTD Engineering Directives and Standards Manuals, Minimum Design Guidelines, Complete Streets Initiative, DOTD and AASHTO Bridge Design Specifications, BDTMs, Hydraulics Manual, and DOTD CAD standard submissions. Design and construction contract documents will adequately address constructability and phasing of the work. Design peer review of developed plans or conceptual designs will be conducted to verify concept, constructability, and accuracy of designs, along with associated reports, conclusions, calculations, and recommendations as needed.

The anticipated milestones and deliverables detailed in the sample schedule will function as the foundational scoping framework while H&H partners with DOTD to refine the project schedule. The development of the project schedule and milestones will be tailored to each TO, necessitating a collaborative effort among the DOTD, the H&H PM, and the Task Disciplinary Leads. The subsequent sections provide an overview of H&H's comprehension of DOTD's project delivery protocols and the essential milestones typically associated with bridge projects.

Environmental & Permitting Services: Our subconsultant, **Providence Engineering and Environmental Group LLC**, will provide all environmental and permitting services necessary to obtain project permits. Required permits may include, but not limited to:

- Coastal use permits (CUP) from the LA Department of Natural Resources
- USACE wetland permits (404 and Nationwide) and Section 10 permits
- Water Quality Certification from the LA Department of Environmental Quality
- Scenic Stream permits from the LA Department of Wildlife and Fisheries
- Bridge permits from the US Coast Guard
- Levee permits from various levee boards
- State Historic Preservation Office consultation Section 106 of NHPA

Historic Bridge/Preservation: For bridges that are historic (Preservation Priority, Preservation Candidate or Preservation Non-Priority) work will be performed in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Secretary's Standards), the Management Plan for Historic Bridges Statewide (Statewide Historic Bridge Plan), and the Programmatic Agreement among the Federal Highway Administration, the LaDOTD, the Advisory Council on Historic Preservation, and the Louisiana State Historic Preservation Officer Regarding Management of Historic Bridges in Louisiana. H&H staff has received training and is certified with the required training in Maintenance and Rehabilitation of Historic Bridges.

Geotechnical Engineering Services: Our subconsultant APS will provide all field exploration services necessary to perform geotechnical investigations, analysis, and design. H&H also has a Geotechnical Design Group that would be available for geotechnical design when needed. Geotechnical services may include but are not limited to geotechnical field investigations including both shallow and deep soil borings; geotechnical laboratory testing and

analysis; preparation of soil boring logs; geotechnical analysis/design based on data obtained; and construction related engineering services. Geotechnical design will adhere to the DOTD Geotechnical Design Manual. At the beginning of any project requiring geotechnical design, we will submit a Geotechnical Design Criteria table stating the anticipated geotechnical design elements, proposed design methodology, and proposed design criteria. All subsurface investigations will be documented with a Geotechnical Data Report.

Road Design and Traffic Services: Our team will provide all services necessary to perform hydraulic and road design services with the assistance of our subconsultant Urban Systems for traffic investigation, analysis, and design. These services may include but are not limited to preliminary and final roadway design and plan development; hydraulic analysis and design; traffic engineering, traffic control design, and data collection; and development of Transportation Management Plan (TMP).

Surveying and Title Work Services: Our subconsultant Chustz will provide all surveying and title work services necessary to perform topographic, and boundary surveying, develop right-of-way maps, and provide other existing site data. All survey work will be performed per the requirements of LAPELS and the DOTD Location and Survey Manual. These services may include, but are not limited to, the following:

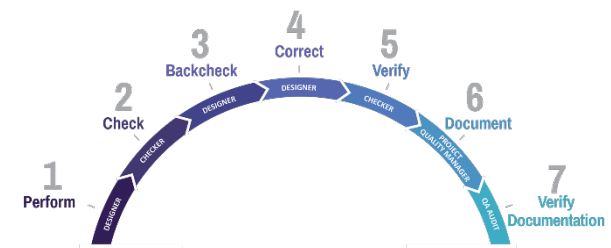
- Topographic surveying, 3D laser scanning, and underwater acoustical imaging including both multi-beam and side scan hydrographic surveys
- Property and boundary surveying
- Property title work including title research and reports
- Construction-related surveying services
- Right-of-way maps

Construction Engineering Support Services: Our team will provide construction engineering support during construction including construction drawing review, shop drawing review, request for information support, contractor proposals, etc.

Quality Management: H&H has committed to fostering the improvement of quality by generating a project-specific Quality Management Plan (QMP) for providing guidance to the project team. The objective of the QMP is to provide tools to the project team so that our professional services are performed and delivered in accordance with applicable industry standards of care and to the satisfaction of project scope requirements while remaining within the allocated schedule and budget. The QMP includes the H&H standard QA/QC Plans. Together these plans form our Quality Management System (QMS) which defines procedures to minimize errors, discrepancies, and omissions in our work products.

Our QMS is a living document that will be continually assessed and revised to reflect best practices and lessons learned. This process includes clarification of design information to support construction or production, correction and prevention of errors and omissions, and response to client feedback.

Refer to our QA/QC Plan included in Section 21 of this submittal.



19. Workload:

Firm(s) ALL FIRMS MUST BE REPRESENTED IN THIS TABLE	Discipline(s) *	Contract Number and State Project Number	Project Name	Remaining Unpaid Balance**
Hardesty & Hanover, LLC	Other (Tunnel Inspection)	4400028222; H.011006.5 Task 1	IDIQ Contract for Tunnel Inspection Services	\$480,148
	Bridge	4400023511; H.009730.5 Task 1	Bridge Inspection of Complex Structures	\$311,223
	Bridge	4400023511; H.009730.5 Task 2	Bridge Inspection of Complex Structures LADOTD Movable Bridge Inspection Manual	\$537,192
	Bridge	4400023511; H.009730.5 Task 3	Bridge Inspection of Complex Structures US 190 bridge Inspection; Krotz Springs - Completed	\$149,467
	Bridge	4400023511; H.009730.5 Task 4	Bridge Inspection of Complex Structures SNBI Data Collection	\$612,218
	CE&I/OV	4400017430; H.001498.6	LA 24 and LA 316: Company Canal Bridge, Terrebonne Parish	\$317,425
	Bridge	4400023909; H.002244.5 Task 2	IDIQ Contract for Movable Bridge Preservation Boudreaux Canal (Mechanical)	\$164,469
	Bridge	4400023909; H.015963.5 Task 4	IDIQ Contract for Movable Bridge Preservation Boudreaux Canal (Structural)	\$116,812
	CE&I/OV	4400024021; H.015028.6	LA 302: Bayou Barataria MB Replacement Route: LA 302	\$4,308,104
	CE&I/OV	4400024022; H.002264.6	LA 302: Bayou Barataria MB Replacement Route: LA 302, LA 47, and LA 3257	\$1,181,969
	Bridge	4400021516; H.011962; H.012063; H.013818; H.011986; H.012734	Contract 4 for Movable Bridges (5)	\$2,564,324
APS Engineering & Testing, LLC	Bridge	4400026585; H.006226.5	Point-a-la-Hatche Ferry Landing Replacement	\$2,077,236
	CE&I/OV	4400024653/ H.01254.6	Wiggins Bayou Bridge	\$37,790
	Geotech	4400019337/ H.014247	LA 399 Bridges Near Fullerton	\$24,307
	Geotech	4400019337/ H.014245	LA 119; Bayou Pierre & Creek Bridges	\$23,654
	Geotech	4400024653/ H.014982.5	Marathon Rd over Dry Creek	\$25,056
	Geotech	4400019011/ H.012068.5	LA 1026 Creek Bridge	\$12,900
	Geotech	4400024653/ H.014978.5	Bellard Loop over Untamed Drainage Ditch	\$28,545
	Geotech	4400024653/ H.016323.5	LA 37 Glass Branch Bridge	\$6,431

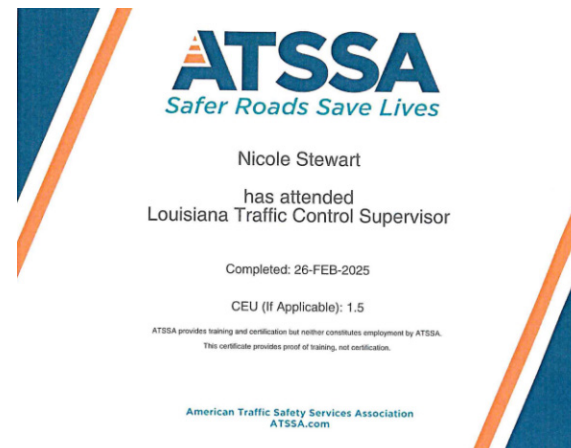
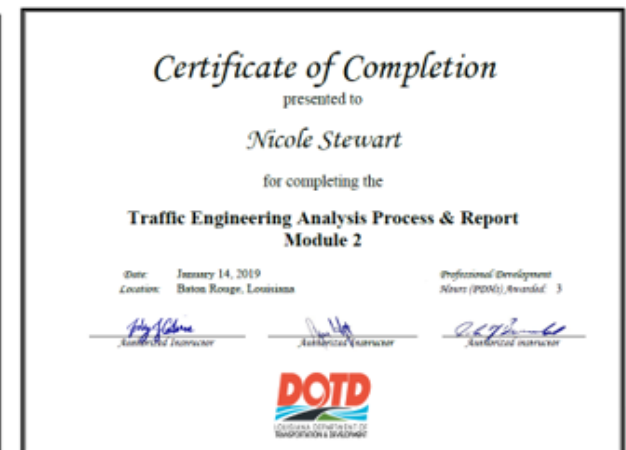
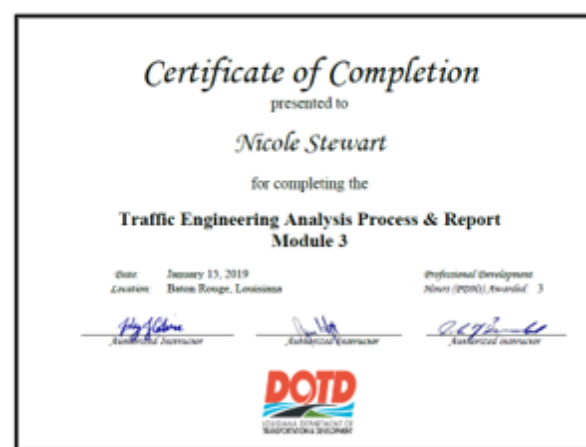
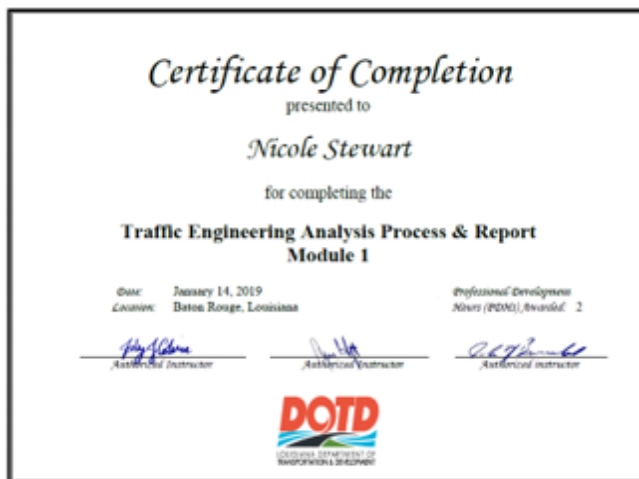
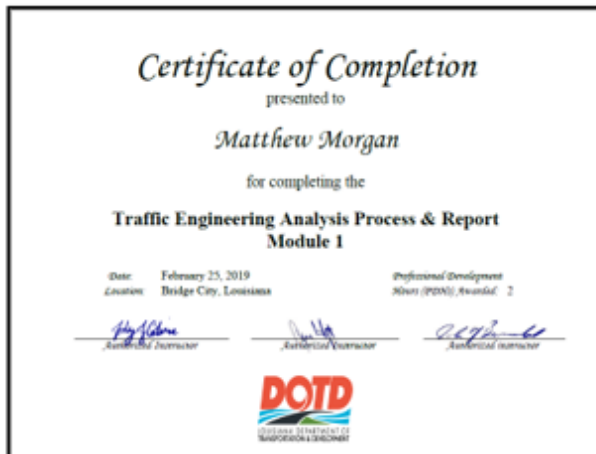
APS Engineering & Testing, LLC (contin.)	Geotech	4400024653/ H.016326.5	LA 36 Drain Bridge Pearl	\$11,451
	Geotech	4400024653/ H.016322.5	LA 81: W-11 Lateral & Bayou Black Bridges	\$15,804
	Geotech	4400024653/ H.016312.5	LA 3116 Creek Bridges	\$20,014
	Geotech	4400024653/ H.004005.5	I-10 LA415 to Essen Lane on I-10 and I-12	\$55,900
	Geotech	4400024653/ H. 016321.5	LA 970 Creek Bridge	\$5,123
	Geotech	4400024653/ H.016311.5	LA 1123 Box Culvert Creek Bridge	\$22,194
	Geotech	4400024653/ H.016324.5	LA 1047 Drain Bridge	\$6,946
	CE&I/OV	4400024653/ H.014560.6	LA-94 Vermillion River Bridge	\$33,507
Bridge Diagnostics, Inc.	Bridge	4400025002 H.009730.5	IDIQ Contract for Non-Destructive Testing/Evaluation of Structures Statewide TO3	\$28,255
	Bridge	4400025002 H.009730.5	IDIQ Contract for Non-Destructive Testing/Evaluation of Structures Statewide TO4	\$19,712
	Bridge	4400025002 H.009730.5	IDIQ Contract for Non-Destructive Testing/Evaluation of Structures Statewide TO5	\$328,295
	Bridge	4400025002 H.009730.5	IDIQ Contract for Non-Destructive Testing/Evaluation of Structures Statewide TO6	\$397,990
	Bridge	4400025002 H.009730.5	IDIQ Contract for Non-Destructive Testing/Evaluation of Structures Statewide TO7	\$307,738
	Bridge	4400025002 H.009730.5	IDIQ Contract for Non-Destructive Testing/Evaluation of Structures Statewide TO8	\$43,394
	Bridge	44-24187 H.004647.6	I-20 Miss. R. Bridge Geotechnical & Stru IDIQ Contract for Bridge Preservation Statewide TO 15	\$232,330
	Bridge	4400023812	Mast Plan Development for the Weigh Station Assessment, Rehabilitation, and Plan Development Statewide TO3	\$875,291
Chustz Surveying, LLC	Survey	4400021531 SP H.011829	IMP@LA 13 & LA 100 & I-10 Acc. Rd (Crowley)	\$16,119
	Survey	4400021531 SP H.013872	LA 22 at LA 1085 Roundabout	\$15,909
	Survey	4400021531 SP H.014728	LA 20: LA 304-307	\$48,764

KTA-Tator, Inc.	Bridge	Contract 4400021516	Contract for 5 moveable bridges (one completed)	\$81,955
	Bridge	Contract 4400021515	Contract for 5 moveable bridges (4 field work completed)	\$83,670
Moffatt & Nichol Inc.	Bridge	4400029207; H.009730.5	LaDOTD IDIQ Contract for Underwater Inspections –Task Order 1	\$3,389,116
	Bridge	4400023512; H.009730.5	LaDOTD IDIQ Contract for Complex Bridge Inspections – Task Order 8	\$150,263
	Bridge	4400024187; H.014609.1	LaDOTD IDIQ Contract for Bridge Preservation – Task Order 14 Cameron Ferry Landing Replacement	\$40,028
	Rail	4400011834; H.012811.1	LaDOTD Railroad Inventory Systems Railroad Inventory Upgrade – Supplemental Agreement 1	\$48,239
Providence Engineering and Environmental Group LLC	CE&I/OV	Contract No. 4400031754; H.000464.6A	US 190 at LA 1026 Roundabout and Widening Routes (CE&I) LA 1026 and US 190, Livingston Parish	\$1,008,255
	Environmental	Contract No. N/A; H. 004791	Belle Chasse Bridge and Tunnel Replacement Public-Private Partnership Project	\$192,710
	Environmental	Contract No. 4400017438; H.013284	Supplemental Agreement No. 6 MRB South GBR: LA 1 to LA 30 Connector Route: New Route Ascension, East Baton Rouge, Iberville, and West Baton Rouge Parishes	\$178,733
	CE&I/OV	Contract No. 4400029877, S.P. No. H.013429.6, H013429	Entity: Downtown Thibodaux Sidewalks (CE&I) Lafourche Parish	\$6,596
	CE&I/OV	Contract No. 4400023718 S.P. No. H.013340.5 F.A.P. No. H013340	Entity Contract for Valhi Blvd. Multi-Use Trail, Phase 1 Route: Valhi Blvd. Terrebonne Parish	\$2,820
	Environmental	Contract No. 4400032049 S.P. No. H.003931.6	Calcasieu River Bridge (HBI) Calcasieu Parish	\$89,980
Urban Systems, Inc	Traffic	No. H011221.5, H.011222.5; No.4400022581	I-10: N.O. CBD3 (Poydras- Louisa) & I-10:N.O CBD4 (Louisa – I-510)	\$32,773.16
	Traffic	No.4400024185, No.H.016046.5	US 190: Atchafalaya R at K 'Springs Repairs	\$7,615.50
	Traffic	No.4400026585, No. H.006226.5	Pointe-a-La-Hache Ferry Landing Replacement	\$5,000.00

20. Certifications/Licenses:

Certificate of Completion presented to <i>Alison Catarella-Michel</i> for completing the Traffic Engineering Analysis Process & Report Module 2 Date: June 11, 2018 Location: Baton Rouge, Louisiana Professional Development Hours (PDHs) Awarded: 4 _____ Authorized Instructor _____ Authorized Instructor _____ Authorized Instructor 	Certificate of Completion presented to <i>Alison Catarella-Michel</i> for completing the Traffic Engineering Analysis Process & Report Module 1 Date: June 4, 2018 Location: Baton Rouge, Louisiana Professional Development Hours (PDHs) Awarded: 4 _____ Authorized Instructor _____ Authorized Instructor _____ Authorized Instructor 	Certificate of Completion presented to <i>Alison Catarella-Michel</i> for completing the Traffic Engineering Analysis Process & Report Module 3 Date: September 10, 2018 Location: Baton Rouge, Louisiana Professional Development Hours (PDHs) Awarded: 3 _____ Authorized Instructor _____ Authorized Instructor _____ Authorized Instructor 
Certificate of Completion presented to <i>Christine Darrah</i> for completing the Traffic Engineering Analysis Process & Report Module 1 Date: October 7, 2020 Location: Baton Rouge, Louisiana Professional Development Hours (PDHs) Awarded: 2.5 _____ Authorized Instructor _____ Authorized Instructor _____ Authorized Instructor 	Certificate of Completion presented to <i>Christine Darrah</i> for completing the Traffic Engineering Analysis Process & Report Module 2 Date: October 7, 2020 Location: Baton Rouge, Louisiana Professional Development Hours (PDHs) Awarded: 3.5 _____ Authorized Instructor _____ Authorized Instructor _____ Authorized Instructor 	Certificate of Completion presented to <i>Christine Darrah</i> for completing the Traffic Engineering Analysis Process & Report Module 3 Date: October 8, 2020 Location: Baton Rouge, Louisiana Professional Development Hours (PDHs) Awarded: 3.5 _____ Authorized Instructor _____ Authorized Instructor _____ Authorized Instructor 

ATSSA Safer Roads Save Lives AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION This is to affirm that <i>Christine Darrah</i> has satisfied the requirements to be designated as a Traffic Control Supervisor Cert. #: 873755 Issue Date: 2/11/2025 Expiration Date: 2/10/2029 _____ Certification Board	ATSSA Safer Roads Save Lives Christine Darrah has attended National Flagger Certification Training Course Completed: 01-JUL-2024 CEU (if Applicable): 0 ATSSA provides training and certification but neither constitutes employment by ATSSA. This certificate provides proof of training, not certification. American Traffic Safety Services Association ATSSA.com
--	--





Hardesty & Hanover, LLC

Quality Management Plan

Table of Contents

2.0	Quality Management Plan Authorization.....	1
3.0	Quality Control & Quality Assurance Concepts	2
4.0	Quality Management System.....	3
5.0	QA/QC Responsibilities	5
6.0	Project Description.....	8
	H&H Quality Assurance Plan	Appendix A
	H&H Quality Control Plan.....	Appendix B
	QA/QC Forms & Checklists.....	Appendix C
	LADOTD QA/QC Forms & Checklists	Appendix D

2.0 Quality Management Plan Authorization

The Hardesty & Hanover (H&H) Quality Management Plan consists of procedures that have been developed to ensure that the various quality elements of the project are carried out in a planned and controlled manner and in accordance with the industry standards and the LADOTD contract requirements.

The herein described "Quality Management Plan" is an accurate and consistent reflection of Hardesty & Hanover policies and procedures. Hardesty & Hanover acknowledges that H&H and our subconsultants are fully responsible for QC/QA of our own work and the LADOTD bears no responsibility for performing QC/QA of the work of Hardesty & Hanover or our subconsultants.

Signature

Rodney A. Jarrett

H&H Quality Manager



Date

September 22, 2025

Signature

Babak Naghavi, PE

H&H Project Manager

Date

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 1
---------------------------	---------------------------	---	----------------------------------	--------

2.1 Introduction

Hardesty & Hanover (H&H) has committed to fostering the improvement of quality by generating, for every project, a project specific Quality Management Plan (QMP) for providing guidance to the project team. The objective of the QMP is to provide tools to the project team so that our professional services are performed and delivered in accordance with applicable industry standards of care and to the satisfaction of project scope and contractual requirements while remaining within the allocated schedule and budget.

The Quality Management Plan includes the H&H firm standard Quality Assurance and Quality Control Plans. Together these plans form our Quality Management System (QMS). The intent of the QMS is to define procedures for Quality Control and Quality Assurance which minimize errors, discrepancies, and omissions in H&H's work products.

Hardesty & Hanover acknowledges that H&H and their subconsultants are fully responsible for QC/QA of their own work and the LADOTD bears no responsibility for performing QC/QA of the work of Hardesty & Hanover or their subconsultants. Subconsultants will follow their firm's quality plan(s) which will meet or exceed the contractual requirements. H&H will review subconsultants' plans to ensure compliance with project requirements and that submissions are certified for compliance with their approved quality plan.

3.0 Quality Control & Quality Assurance Concepts

3.1 Definitions

- a) **Contract Requirements:** Established by LADOTD for each project, these requirements take precedence over any other practices established by H&H. Notwithstanding specific contract requirements, minimum H&H quality practices and industry standard of care are applicable to all projects. Contract requirements are identified in the sections below.
- b) **Prime Consultant or Design Builder (DB) Quality Requirements:** There are no supplemental project specific Prime Consultant or Design Builder Quality requirements.
- c) **Project Specific Engineering Oversight Practices:** These practices are established by H&H during project initiation and will vary depending on the classification of the project as determined by the firm. Engineering Oversight activities are a supplement to, and not a replacement of, project quality activities. Project Specific Engineering Oversight Practices are identified in the sections below.
- d) **Quality Control (QC):** Procedures of checking the accuracy and consistency of the calculations and the drawings, detecting and correcting design omissions and errors before the design plans are finalized, and verifying the specifications for the load-carrying members are adequate for the service and operation loads.
- e) **Quality Assurance (QA):** Procedures for reviewing the work to ensure the quality control procedures are in place and effective in preventing mistakes, and consistency in the development of bridge design plans and specifications.
- f) **Quality Assurance Plan:** This document defines the intent and practices for overall Quality Assurance and Engineering Oversight with an emphasis on the activities of project management, specifically the process for identifying project practices for Audits, Witness Points, Hold Points, and Internal Technical Reviews. Modifications to the Quality Assurance Plan are identified in the sections below.
- g) **Quality Control Plan:** This document defines the intent and practices for overall Quality Control with an emphasis on the activities of the project technical staff. The design and document review process and practices are defined in this document. Modifications to the Quality Control Plan are identified in Section 3.4 below.

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 2
---------------------------	---------------------------	---	----------------------------------	--------

- h) **Design Policies:** These are supplemental documents that are exclusively for internal use. These are not submitted to LADOTD. Portions of Design Policies may be used in the development of a Project Quality Control Process, for example if a specific Design Practice is recommended for use to address a particular project design element.

4.0 Quality Management System

Customer Satisfaction and Quality Management System Improvement

H&H is continually striving to improve customer satisfaction. Our QMS is a living document that will be continually assessed and revised to reflect best practices and lessons learned. This process includes clarification of design information to support construction or production, correction and prevention of errors and omissions, and response to client comments, complaints, and feedback.

Quality Control Program Objectives

Quality Control is a series of activities, actions and procedures routinely undertaken to ensure that our services and their representative work products are produced to the requisite standard of care and in accordance with the defined technical philosophy of the firm.

Our Quality Control process ensures that each work product is thoroughly reviewed in detail by someone in addition to the review by the Designer/Originator/Producer who prepared that work product for conformity with generally accepted standards of design and engineering practice.

Unless otherwise approved by the engineer in responsible charge, at least one of the primary individuals involved in preparing (Designer) or checking (Checker) a document shall be a Professional Engineer, experienced and qualified in the appropriate engineering discipline and project jurisdiction. Comments generated by the quality control process are to be resolved to the satisfaction of both the Designer and the Checker. The process of Quality Control (QC) is documented and recorded in a manner which allows for management of the process and review of the process through Quality Assurance (QA). The full detailed QC process can be found in our QC Plan attached in Appendix B.

Quality Assurance Program Objectives

The Quality Assurance Program encompasses the systematic review of our design and development processes and our Quality Control activities to confirm that the desired level of quality has been attained and will continue to be obtained. Quality Assurance identifies procedural shortfalls and recommends changes to improve our processes. Quality Assurance is a company-wide process that confirms that the proper processes are in place to ensure that our services and products meet the requisite standard of care. A brief summary of our Quality Assurance process follows. The full detailed QA process can be found in our QA Plan attached in Appendix A.

Quality Assurance

Quality Assurance reviews will be performed to confirm conformance with the project Quality Management Plan. The review shall verify that the project team has sufficiently accomplished all quality goals set forth in the Quality Management Plan. After completion of the QC process, the QC/QA Certification Form (see Appendix C-11) shall be completed and submitted along with the milestone submission package to indicate compliance with the QC plan.

Quality Assurance documentation provides a record that the design development and review process was performed as required. This documentation is to include records of the important steps which led to the development of final planning documents as well as the final design, such as preliminary concepts, model validation, design calculations, computer code input and any communications, instructions, and directives which have a direct bearing on the project.

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 3
---------------------------	---------------------------	---	----------------------------------	--------

Types of documentation to be reviewed for compliance with the procedures set out in the Quality Control Plan:

- a) Design Criteria
- a) Reports – All reports prepared for the project irrespective of type.
- b) Interdisciplinary Coordination – Minutes of meetings and signed attendance lists.
- c) Calculations/Computer Solutions
- d) Drawings
- e) Specifications
- f) External Comment Responses
- g) Prior Audit Documents – All documentation provided by the Quality Auditor including recommendations for improvement, nonconformance reports, and any other check lists.

Additionally, the Quality Assurance Review is used to identify areas of weakness in the Quality Control process and develop preventive actions that focus on areas of potential nonconformance to reduce the risk associated with these areas.

If the QA Review identifies potential nonconformities, the review may also include determination of their probable cause, determination of preventive action needed, implementation of preventive action and determining if preventive action was implemented and effective in preventing nonconformity. The Project Manager is responsible for developing and implementing preventive actions that address the potential areas of nonconformance identified in the QA Review and working to reduce or eliminate the risk in these areas. Additional staff and analytical tools may be utilized depending on the nature and extent of the nonconformity.

QA Information Package & Design Completion

Upon completion of the final QC process, which shall be no later than the 95% Final Plans stage, the designer is responsible for preparing a QA information package and providing it to the PQAL Reviewer for QA review.

The QA package shall include:

- Calculation book prepared in accordance with the requirements of the LADOTD Final Calculation Book Checklist contained in Appendix C-9
- LADOTD QA information package check list (see Appendix C-10)
- Plans
- Special provisions including Non-Standard items
- Cost estimate
- Any relevant documents, such as checklists, review comments, etc., utilized by the designer, design checker, detailer, and detail checker.

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

After completion of the QA process which shall be no later than the 98% Final Plans stage, the LADOTD QC/QA Certification Form (see Appendix C-11) shall be completed and signed by the designer, design checker, detailer, detail checker, reviewer and EOR. When the project includes peer review, geotechnical or hydraulic scope, these portions of the certification will be completed as well.

Control of Nonconforming Product

Corrective action will be appropriate to the severity of the nonconformance identified. The Project Manager shall develop and implement any corrective action procedure taken. The corrective action procedure shall be approved by the Chief Technical Officer. The procedure shall identify the nonconformance root cause and the necessary actions

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 4
---------------------------	---------------------------	---	----------------------------------	--------

required to resolve the nonconformance to the satisfaction of the client. The procedure shall address nonconformity identification (including client complaints), cause determination, action to prevent recurrence, identifying and implementing the corrective action, recording results, and determining if the corrective action was implemented and effective in resolving the nonconformance.

4.1 Effective Date and Revisions

As the QMP is a living document that reflects the currently accepted standards of care and lessons learned on H&H projects, the contents of the H&H QMP will be updated as needed. Updates will be issued as controlled documents (i.e., with versions and revision dates).

The project management team is responsible for providing the project staff with relevant portions of the QMP.

Quality Management Plans, once approved by the firm and the client, are unique to the project. Such a plan may not be modified or re-used for another project without the approval of the Quality Manager.

4.2 Quality Management Plan Development

H&H will continually develop and implement measures that ensure the various elements of this project are performed in a planned and controlled manner according to, at a minimum, the prevailing standard of care for professional practice applicable to the service being provided.

H&H quality control and assurance activities are dictated by this Quality Management Plan. The plan establishes policy, sets procedures, and controls those which may be specifically assigned to a project.

The plan describes the program, responsibilities and actions required by all project participants to ensure that quality control procedures are performed and documented. As a result, all interested parties can be assured that an appropriate level of engineering quality will be provided, and that the technical staff members will recognize their role in the quality process.

The H&H Quality Manager is responsible for the annual review of this QMP. The review shall include all aspects of the plan including but not limited to review of comments by clients, audits by clients and corrective action costs, if any. The QM will recommend improvements to the plan upon completion of the review.

5.0 QA/QC Responsibilities

5.1 Project Staff

There are several responsible parties involved in the Quality Assurance and Quality Control of a project from inception to completion. Their project and quality specific roles and responsibilities are described in the Quality Assurance Plan Section 2.0 contained in Appendix A of this document. The H&H Project Manager (PM) and Project Quality Assurance Lead (PQAL) will be responsible for the plan execution. For this project, the following persons will be responsible for the various roles:

H&H Project Principal In Charge: Bobby Naghavi, PE

The Principal in Charge (PIC) is responsible for the overall project, delivery of our services to the client and is responsible for overall client satisfaction. The PIC is to be aware of the project performance, both technical and financial, and ensure the Project Manager is performing his/her duties in accordance with the firm requirements.

H&H Chief Technical Officer: Keith Griesing, PE

The Chief Technical Officer (CTO) is responsible for the technical quality of the services of the firm. The CTO is responsible for review of the Project Management Plan including the technical approach and risk assessment.

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 5
---------------------------	---------------------------	---	----------------------------------	--------

H&H Quality Manager: Rodney A. Jarrett

The Quality Manager (QM) is responsible for review and approval of all project specific Quality Management Plans, including but not limited to review of comments by clients, audits by clients and corrective action, if any. The QM has firm wide responsibility for confirming that Project Managers develop and adhere to Quality Management Plans for individual projects.

H&H Project Manager/Supervisor: Bobby Naghavi, PE

- Responsible for all activities necessary to deliver H&H services in accordance with the contract requirements, including financial performance as well as oversight of the technical sufficiency of the services.
- Licensed by the State of Louisiana as a professional engineer
- Experienced in the design of similar structures.
- Acts as primary point of contact and project communications for H&H
- Develops a comprehensive Project Management Plan as a requirement for Project Initiation which includes the Project Technical Approach Plan.
- Establishes and monitors the project budget, schedule, and staffing requirements.
- Establishes design criteria and design parameters, working with the technical discipline leads. Design criteria shall meet all the requirements of the LADOTD Design Criteria Checklist contained in Appendix C-8.
- Coordinates with subconsultants
- Chairs project meetings, produces and distributes minutes as needed
- Reviews the H&H Quality Assurance Review (QAR) Form prepared by the Project Quality Assurance Lead and certifies the deliverable is ready for submission.
- Completes and signs the LADOTD Consultant Submittal QC/QA Certification Form contained in Appendix C-13 that accompanies each submission.

H&H Project Engineer: Erik Diaz, PE

- Responsible for project development and delivery according to the requirements communicated by the Project Manager (PM)
- Leads the project delivery efforts and works closely with the project Technical Leads in defining the technical direction of the project
- Provides communication and direction to technical staff

H&H Project Quality Assurance Lead: Timothy Noles, PE

- Responsible for ensuring that the QC process has met the requirements of this QMP; is complete and the design calculations, drawings, special provisions, and cost estimate are in accordance with LADOTD Bridge Design practices, policies, and procedures.
- Licensed by the State of Louisiana as a professional engineer
- Experienced in the design of similar structures.
- Communicates with Project Manager on a regular basis to maintain the QC review schedule for projects.
- Responsible for oversight of project specific quality activities including the collection and appropriate filing of all Quality Control and Quality Assurance documentation. Maintains an auditable record of all QC reporting forms generated during design reviews.

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 6
---------------------------	---------------------------	---	----------------------------------	--------

- Verifies that the QC activities have been performed and that qualified and competent personnel have undertaken the QC activities.
- Performs Quality Assurance Reviews documented with the H&H Quality Assurance Review and Certification Form (QAR) contained in Appendix C-1. The PQAL shall review the project quality control documentation in advance of submission to confirm that design QC activities are complete, comply with the Quality Management Plan and meet the requirements of the submittal review checklist.
- Reviews Subconsultant's Quality Certification form indicating compliance with the project approved QMP. Review or delegate review of submission content against the QA Checklist. May perform audits to review QC documentation for milestone submissions. See forms contained in Appendix C-5 and C-6.

Discipline Leads/EORs:

- Engineers in responsible charge of a specific design segment in their area of expertise
- Required to sign/seal as Engineer of Record (EOR) unless client or other requirements exist.
- Licensed by the State of Louisiana as a professional engineer
- Experienced in the design of similar structures.
- Ensure the QC/QA certification is signed by all responsible parties.
- Assemble design calculations from all designers, finalize the calculation book, and seal the cover sheet of the calculation book for their discipline.
- Ensure the names of the designer, design checker, and reviewer are correctly shown on the title block of each plan sheet. Stamp all plan sheets or designate a designer, design checker, or reviewer who shall be licensed by the State of Louisiana as a professional engineer to stamp the sheets developed under their supervision.
- The EOR must stamp the general notes sheets for their discipline.

The following will act as Discipline Leads/EORs for this project:

Bridge Inspection: Frederick Wetekamm, PE

Structural Lead: Erik Diaz, PE

Load Rating Lead: Corey Bourgois, PE

Mechanical Lead: Travis Kimmins, PE

Electrical Lead: Kenneth Pecquet, PE

Roadway Design: John Rayer, PE

5.2 QUALITY ROLES

Designers:

- Engineers directly responsible for the development of design calculations, drawings, special provisions including Non-Standard items, and cost estimate.
- Licensed by the State of Louisiana as a professional engineer or certified as an engineer intern.
- Ensure that design software is on the pre-approved list provided in Appendix C-13.
- Prepare the design documents for QC review
- Participate in Peer Review meetings when requested on complex projects. Use form in Appendix C-12.
- Prepare the Final Calculation Book according to checklist in Appendix C-9 and QA Information Package content upon completion of the final QC process.

The following will act as Designers for this project:

Linh Kim, PE; Dalton Hunt, EI; Courtney Mai, EI; Sean Brock, EI; Chris Aubert, EI

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 7
---------------------------	---------------------------	---	----------------------------------	--------

Design Checkers:

- Engineer responsible for performing a full technical review of the design calculations, drawings, special provisions including Non-Standard items, and cost estimate.
- Licensed by the State of Louisiana a professional engineer or certified as an engineer intern; however, if the designer is an engineer intern, the design checker must be a professional engineer.

The following will act as Design Checkers for this project:

Jason Biddle, PE; Robert Hideck, PE; Andrew Barthle, PE

Detailers:

- Detailers are directly responsible for the creation of the CAD drawings.
- Responsible for ensuring that the drawings adequately represent the design information
- Must self-check their own work to minimize errors.

The following will act as Detailers for this project:

Will Farber, EI; Courtney Mai, EI

Detailer Checkers:

- The detail checker must ensure the drawings are in accordance with the design information and CAD standards. All dimensions and quantity calculations must be verified.

The following will act as Detailer Checkers for this project:

Linh Kim, PE

Reviewers:

- The reviewer is the engineer responsible for ensuring that the QC process as described above is complete and the design calculations, drawings, special provisions, and cost estimate are in accordance with LADOTD Bridge Design practices, policies, and procedures.
- The reviewer must be licensed by the State of Louisiana as a professional engineer and must have substantial experience in the design of similar structures.
- The H&H reviewer is also known as the Project Quality Assurance Lead or PQAL.

The following will act as Reviewers for this project:

Timothy Noles, PE

5.3 Training

H&H will only employ qualified personnel to execute the scope of work.

The Project Manager is responsible to review the record of each employee and determine if the background and experience of the employee is acceptable for the assigned scope of work.

The Project Manager is responsible to ensure staff assigned to the Project is properly trained in the QMP, Procedures/Instructions, any project-unique technical requirements, availability of technical resources, etc. within the consultant organization as they relate to the Scope of Work, and has valid evidence of fitness (certification, license, etc.) for executing the work for this Project.

Training will consist of in-house education and field experience. H&H staff found that deficient will not be assigned work in their area of deficiency until requirements for the position are met.

6.0 Project Description

This contract is an IDIQ Contract for Bridge Preservation Services Statewide.

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 8
---------------------------	---------------------------	---	----------------------------------	--------

6.1 Scope of Work

Scope of Work

The scope of the project is to perform all necessary professional services in connection with the IDIQ Contracts for Bridge Preservation Services Statewide, H&H Project Number 0006908.00.

The general scope of work associated with this contract includes:

1. Bridge Design Services

1.1 General Bridge Engineering Services

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

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

1.2 Sampling, Instrumentation, and Non-destructive Testing

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

Sampling

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

Instrumentation

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

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 9
---------------------------	---------------------------	---	----------------------------------	--------

Non-destructive Testing

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

2. Geotechnical Services

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

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

3. Road Design and Traffic Services

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

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

4. Surveying and Title Work Services

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

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

5. Bridge Inspection Services

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

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

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 10
---------------------------	---------------------------	---	----------------------------------	---------

6. Environmental and Permitting Services

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

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

All work shall be performed in accordance with all applicable DOTD policies, procedures, and manuals. Design criteria shall be developed and submitted to the Bridge Task Manager for review and approval prior to proceeding with design.

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

Unless waived by the Task Order Project Manager, ProjectWise shall be utilized for all PDF submittals and electronic plan delivery will be required. See the following website for details on electronic plan delivery:

<https://www.dotd.louisiana.gov/media/ip5corrwladotd-software-standards-for-electronic-plans.pdf>

6.2 Deliverables

Document	Hold Point	Witness Point
Quality Assurance / Quality Control Plan (QMP)		X
Schedule		X
Design Criteria Summary		X
TS&L		X
Preliminary Plans (30%)	X	
Preliminary Plans (60%)	X	
Preliminary Plans (90%)	X	
Preliminary Plans (100%)	X	
Final Plans (30%)	X	
Final Plans (60%)	X	
Final Plans (90%)	X	
Final Plans (100%)	X	
Load Rating Report	X	
Final Calculation Book, Plans, Specs & Estimate.	X	

6.3 Audit Schedule

In accordance with Section 6.3 of the Quality Assurance Plan, Quality Audits shall be determined and scheduled by the Chief Technical Officer or Quality Manager.

6.4 Project Specific Procedures

The H&H Quality Control Plan and Quality Assurance Plan shall be followed in their entirety as enclosed and as amended below.

6.5 Quality Control Plan Modifications

The H&H firm standard QC Plan attached in Appendix B shall be supplemented by the requirements of the LADOTD Bridge Design Section Policy for QC/QA as stated in Part I, Chapter 3 of the *LADOTD Bridge Design and Evaluation Manual (BDEM)*, and as set forth in this project specific Quality Management Plan. The requirements of the LADOTD Bridge Design Section Policy for QC/QA as stated in Part I, Chapter 3 of the *LADOTD Bridge Design and Evaluation Manual (BDEM)* shall take precedence over the H&H firm standard QC Plan.

6.6 Quality Assurance Plan Modifications

The H&H firm standard QA Plan attached in Appendix A shall be supplemented by the requirements of the LADOTD Bridge Design Section Policy for QC/QA as stated in Part I, Chapter 3 of the *LADOTD Bridge Design and Evaluation Manual (BDEM)*, and as set forth in this project specific Quality Management Plan. The requirements of the LADOTD Bridge Design Section Policy for QC/QA as stated in Part I, Chapter 3 of the *LADOTD Bridge Design and Evaluation Manual (BDEM)* shall take precedence over the H&H firm standard QA Plan.

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project Bridge Preservation Services 0006908.00	REV.0 - Original Issue: 09/18/25	Page 12
---------------------------	---------------------------	---	----------------------------------	---------



Hardesty & Hanover, LLC Quality Assurance Plan

Table of Contents

Table of Contents	1
1.0 Introduction	2
2.0 Key Definitions and Roles.....	2
2.1 Key Definitions	2
2.2 Key Roles.....	4
2.2.1 Discipline or Task Lead.....	4
2.2.2 Project Engineer	4
2.2.3 Project Quality Assurance Lead.....	5
2.2.4 Project Manager.....	6
2.2.5 Discipline Chief Engineer.....	7
2.2.6 Quality Manager.....	7
2.2.7 Chief Technical Officer.....	8
3.0 General Intent	8
3.1 Schedule & Frequency of QA Activities	8
4.0 Documentation Requirements	9
4.1 Control of Documents	9
4.2 Change Control of Design Documents	9
4.2.1 Change Control of Design Documents during Design	9
4.2.2 Change Control of Documents during Construction	9
4.3 Control of Records	10
5.0 Communication Protocols.....	10
5.1 Pre-Project.....	10
5.2 Project Start-up	11
5.2.1 Project Initiation Technical Meeting	11
5.2.2 Project Staff Kick-off Meeting.....	11
5.3 Project Development.....	12
5.3.1 Project Submission Report	12
6.0 Quality Assurance Verification	13
6.1 Quality Assurance Reviews	13
6.1.1 Phase Submittals	14
6.1.2 Design Build Submittals	14
6.2 Quality Assurance Audits.....	14
6.2.1 Quality Assurance Audit Process.....	14
6.3 Control of Nonconforming Product.....	15
6.3.1 Corrective Action.....	15
7.0 Sub-Consultants	15

1.0 Introduction

Quality Assurance is the systematic review of our design and development processes and our Quality Control activities to confirm that the desired level of quality has been attained and will continue to be obtained. Quality Assurance identifies procedural shortfalls and recommends changes to improve our processes.

Quality Assurance is a company-wide process that confirms that the proper processes are in place to assure that our services and products meet the requisite standard of care.

2.0 Key Definitions and Roles

2.1 Key Definitions

- a) **Back Checker:** The individual who reviews the Checker's comments. The Originator / Producer functions as the Back Checker unless another qualified individual is assigned by the PM.
- b) **Checker:** The individual who through education and/or experience is knowledgeable within an area of technical subject matter, who has been assigned by project leadership to perform an accuracy and correctness check of technical content.
- c) **Check Print:** The copy of the work product to be used in the quality control process. The Check Print may be a hard (paper) copy or a digital file such as a Portable Document File (PDF) that is capable of recording review markups. A Check Print is required at each Hold Point and may be requested by the Client, PM, or HQ at a Witness Point. Refer to the appropriate process by document type / class in section 4 for Check Print contents.
- d) **Director of Engineering:** The Director of Engineering is responsible for overall allocation of staff to projects directly or through coordination with the Office Managers and/or other Staffing Managers, depending on the business unit. For the purposes of this document, the title "Staffing Manager" is used to represent the role of the Office Manager, New York Staffing Manager, or Director of Engineering with respect to assignment of resources.
- e) **Engineer of Record:** A licensed Professional Engineer responsible for signing and sealing design reports, plans, and specifications which they prepared, or which were prepared under their direct supervision.
- f) **Fundamental Project:** Projects that represent core services for existing clients that do not represent significant or unusual risk to the firm or substantial revenue relative to a specific business unit. Refer to Operating Policy OP-06 for further information.
- g) **Hold Point:** A level of design where specific aspects of the project such as design objectives, design criteria, and principal geometry are typically locked in. At a minimum, Concept level plans (10-15% design), Final plans (100% design), and Issued For Construction (IFC) or Released For Construction (RFC) plans are mandatory Hold Points.
- h) **HQ:** Also referred to as Headquarters Engineering. This specifically refers to the authority of the technical directors such as but not limited to the Chief Technical Officer, Director of Engineering, Risk Management Officer, Quality Manager, or respective Practice Leaders and Chief Engineers.
- i) **Independent Check:** Verification of a calculation by performing a separate standalone calculation to confirm results in lieu of performing a detailed check.
- j) **Internal Technical Reviewer:** Reviewer for a project or portion thereof that has not been a principal participant in the development of a work product.
- k) **Key Project:** Any project that does not meet the definition of a Fundamental Project. Refer to Operating Policy OP-06 for further information.

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 2
------------------------------------	----------------------------	------------------------	---	--------

- l) **Originator / Producer:** The individual, qualified by experience in the applicable discipline, who is assigned to prepare documents and/or generate work product.
- m) **Phase Submittal:** A milestone submittal of a preliminary work product to a client (i.e., concept plans, 60% plans, or similar prior to final.)
- n) **Plans:** Drawings and/or CADD files created by H&H for use by the Client as part of the contract or bid documents or, in the case of alternative delivery such as design/build, to construct the project.
- o) **Preliminary:** A document, including reports, plans, specifications, or similar documents, prepared by H&H and submitted to the client prior to the anticipated final submittal of such document. Preliminary documents are 100% complete and validated by QC but represent a lesser level of development than the final work product.
- p) **Principal In Charge:** The Principal in Charge (PIC) is responsible for the overall project and delivery of our services to the client. The PIC leads negotiations for contractual agreements with the client and is responsible for overall client satisfaction. The PIC is to be aware of the project performance, both technical and financial, and ensure the Project Manager is performing his/her duties in accordance with the firm requirements.
- q) **Project Management Plan (PMP):** The plan developed by the Project Manager prior to project initiation to describe "how" and "by whom" a specific project will be performed, including detailed budget, schedule, resources, responsibilities, communications, and quality. The Project Management Plan includes the Operations Plan, Technical Plan and Quality Management Plan.
- r) **Quality Management Plan (QMP):** The plan developed by the Project Manager to describe specific quality requirements for a given project. The QMP typically includes variances or enhancements to the firm standard QMP.
- s) **Quality Control (QC):** Procedures of checking the accuracy and consistency of the work product to minimize errors, discrepancies, and omissions, to ensure adherence to industry standards and to deliver an exceptional product to our clients.
- t) **Quality Assurance (QA):** Procedures of reviewing the design and development processes to ensure the Quality Control procedures are in place, implemented per firm policy and the desired level of quality has been attained and will continue to be obtained. Quality Assurance identifies procedural shortfalls and recommends changes to improve processes where appropriate.
- u) **Quality Auditor:** A person who is an Engineer or Manager that is assigned by HQ to perform a Quality Assurance Audit for a project.
- v) **QC Stamp:** A physical or digital stamp applied to work product to signify that it is the check copy (aka Check Print) and for recording the initials and dates of the individuals who performed the quality control process.
- w) **Verifier:** The individual assigned to verify that the Checker's and Originator / Producer's comments have been implemented. The Verifier may be any individual assigned by the PM but will preferably be the Checker.

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 3
------------------------------------	----------------------------	------------------------	---	--------

2.2 Key Roles

There are several responsible parties involved in the Quality Assurance of a project from inception to completion. Their project and quality specific roles and responsibilities are described below.

Based on the project staffing needs identified, in terms of skill set and level of experience, and the basic project organization structure, the staff related to the key roles of Project Manager, Project Engineer, Project Quality Assurance Lead, and Discipline or Task Lead should be identified. An org chart or responsibility matrix showing these positions should be included in the project files and updated to reflect any staff changes as the project progresses.

2.2.1 Discipline or Task Lead

- a) Project Responsibilities
 - 1) Typically, the engineer in responsible charge of a specific design segment and required to sign/seal as Engineer of Record (EOR) unless client or other requirements exist.
- b) Quality Responsibilities
 - 1) Responsible for ensuring that QC has been completed and that the documents have been provided to the Project Quality Assurance Lead, or the Project Manager if no Project Quality Assurance Lead has been assigned for their specific design segment or portion of a project.
 - 2) Responsible for coordination with the Project Engineer if a Project Submission Report is to be prepared, as described in Section 5

2.2.2 Project Engineer

A project may have more than one Project Engineer (PE) on large multi-disciplinary projects where work is divided into segments or disciplines. The Project Engineer shall be a licensed Professional Engineer in the jurisdiction of the project.

- a) Project Responsibilities
 - 1) The Project Engineer is responsible for project development and delivery according to the requirements communicated by the Project Manager (PM).
 - 2) Based on the organization of the project as determined by the Chief Technical Officer and the PM, the Project Engineer may be the technical lead for key decisions during the project development process. Alternatively, the Project Engineer may lead the project delivery efforts and work closely with the project Technical Lead in defining the technical direction of the project.
 - 3) Provides communication and direction to technical staff.
 - 4) In coordination with each design lead, the Project Engineer is encouraged to prepare a Project Submission Report as described in Section 5
- b) Quality Responsibilities
 - 1) Serves as an intermediary between the Project Quality Assurance Lead and project development activities.
 - 2) In instances where the Project Engineer is the technical lead for the project, the Project Engineer is responsible to document the key decisions including code interpretations, contract nonconformances, and deviations made and document acceptance of these decisions by the PM. Documentation of such instances must be made available to the Project Quality Assurance Lead and Quality Manager.

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 4
------------------------------------	----------------------------	------------------------	---	--------

- 3) In instances where the Project Engineer is the Project Quality Assurance Lead, the Project Engineer is responsible for all responsibilities listed in Section 2.2.3 below including but not limited to:
 - a) Scheduling Quality Assurance Reviews as required in Section 3.1 below.
 - b) Providing necessary information to the Quality Auditor. Necessary information includes write-ups for complex or complicated design documents or computations to facilitate review.

2.2.3 Project Quality Assurance Lead

The Project Quality Assurance Lead (PQAL) is assigned by the Project Manager and may be a third party not involved in project development but is typically the Project Engineer. The PQAL is responsible for the collection and appropriate filing of all Quality Control and Quality Assurance documentation. If separate from the Project Engineer, the PQAL should be a licensed professional engineer, and responsible for oversight of project specific quality activities.

The PQAL shall report to the Project Manager and the Quality Manager as outlined below.

The PQAL must be familiar with Client Requirements.

- a) Project Responsibilities
 - 1) Communicates with Project Manager and Project Engineer on a regular basis to maintain the QC review schedule for projects.
 - 2) Maintains an auditable record of all QC reporting forms generated during design reviews.
- b) Quality Responsibilities
 - 1) Has 'halt work' authority for nonconformance.
 - 2) Responsible for management of the Quality Control and Quality Assurance process either directly or through delegation.
 - 3) Shall direct QC efforts and verify that the QC activities have been performed and that qualified and competent personnel have undertaken the QC activities in coordination with the Project Engineer. Quality Control shall be done by project level staff directly involved with design activities.
 - 4) Responsible for performing Quality Assurance Reviews. The PQAL shall review the project Quality Control documentation in advance of submission to confirm that design QC activities are complete and comply with the Quality Management Plan.
 - a. Quality Control Documents that are not accompanied by appropriate information or explanation may be rejected by the PQAL and returned to the Project Engineer for completion.
 - b. Documents the results of the QA review activities, verifies incorporation of comments made during QA reviews, and resolves outstanding comments through communication with the Project Manager and Project Engineer.
 - i. Identifies and records nonconformance on the Quality Assurance Report Form.
 - ii. Tracks, monitors, and reports to the Project Manager and Quality Manager on the status of outstanding design-related nonconformance reports as requested.
 - 5) Generates Quality Assurance reports using the Quality Assurance Report Form when requested by the Quality Manager. The report is submitted to HQ and a copy is placed in the project files.

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 5
------------------------------------	----------------------------	------------------------	---	--------

2.2.4 Project Manager

The Project Manager (PM) is responsible for all activities necessary to deliver H&H services in accordance with the contract requirements.

a) Project Responsibilities:

- 1) The Project Manager is responsible for the project financial performance as well as oversight of the technical sufficiency of the services.
- 2) The PM is responsible for developing the Project Technical Approach Plan in accordance with Operating Policy OP-06 and for meeting all project specific goals set forth in the Plan.
- 3) The PM directs the development and delivery process. The PM also directs all communication with the Client.
- 4) The PM coordinates with the Staffing Manager on project staff needs.
- 5) The PM's activities shall include, as a minimum, assessment and evaluation of the following as they are applicable to a given project:
 - a. Design reports
 - b. Analytical approach
 - c. Drawing details for conformity to Contract requirements
 - d. Project Specifications for conformity to Contract requirements
 - e. Design and Work Plans
 - f. Major temporary components' effect on permanent components
 - g. Field design changes
 - h. Design approvals for Materials and procedures
 - i. As-Built Plans for conformity with final design and Contract requirements.
- 6) The PM, and/or staff working under the direct supervision of the PM, shall conduct an assessment and evaluation of design such that the PM can certify to the Chief Technical Officer, the Quality Manager, and to the Client, if required, that the design satisfies the Contract requirements, including the following requirements:
 - a. Accuracy
 - b. Adequacy
 - c. Conformance to standards of practice
 - d. Compliance with codes and standards
 - e. Quality
 - f. Fitness for purpose and/or function as specified and/or implied in the Contract
 - g. Conformance with the standard practices and specifications of the Client.
- 7) Sign the Quality Assurance Report Form.
 - a. The Project Manager, certifies that the noted submittal for the referenced project has completed and met the requirements of the Project Quality Management Plan, is complete for the level of development and meets the requirements of Hardesty & Hanover.

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 6
------------------------------------	----------------------------	------------------------	---	--------

b) Quality Responsibilities

- 1) The Project Manager develops a Quality Management Plan to meet the specific project goals and requirements. The QMP is submitted to the Quality Manager for review.

2.2.5 Discipline Chief Engineer

a) Project Responsibilities

- 1) Does not typically have direct project development responsibilities unless assigned to the project.

b) Quality Responsibilities

- 1) Upon request of the Project Manager, resolves and documents the resolution of any differences of opinion between the Checker and Back Checker during Quality Control and provides this information to the Project Quality Assurance Lead (PQAL) or the Project Manager if no PQAL has been assigned.
- 2) Attends both the Project Initiation Technical Meeting and the Project Staff Kick-off Meeting. Based on the scope and discussions at the Project Initiation Technical Meeting, the CTO and Chief Engineers decide the level of HQ Oversight and Chief Engineer (or delegate) involvement appropriate for the project.

2.2.6 Quality Manager

The Quality Manager (QM) has firm wide responsibility for confirming that Project Managers have developed and adhered to Quality Management Plans for individual projects. The QM is responsible for meeting the quality goals and objectives set by the Chief Technical Officer.

The QM provides oversight of the review and audit process through coordination with the Project Managers and Project Quality Assurance Leads.

a) Project Responsibilities:

- 1) Reviews and approves Quality Management Plans in support of firm goals.

b) Quality Responsibilities:

- 1) Develops a framework for the H&H Quality Control and Assurance Plans. Manages and implements these policy documents.
- 2) Evaluates existing plans to determine if plans are effective.
- 3) Recommends improvements to existing plans.
- 4) Directs the performance of internal audits of the quality process on a project-by-project basis. Prepares nonconformance reports if required.
- 5) Has 'halt work' authority for nonconformance.
- 6) Prepares periodic reports to the Chief Technical Officer identifying:
 - a. QC activities performed by project as directed by the QM
 - b. Submissions-prior completed and future planned
 - c. Projects that may require additional technical oversight
 - d. Contract nonconformance reports
 - e. QC Plan nonconformance reports.

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 7
------------------------------------	----------------------------	------------------------	---	--------

2.2.7 Chief Technical Officer

The Chief Technical Officer (CTO) is responsible for the technical quality of the services of the firm. In this capacity, the CTO defines policies and directives that establish the minimum performance criteria for the technical services of the firm.

- a) Quality Responsibilities:
 - 1) Establishes quality goals and objectives
 - 2) Monitors the performance of the Quality Manager and supporting quality staff
 - 3) Performs independent review of Key Projects
 - 4) Has 'Halt work' authority for project technical services.

3.0 General Intent

All projects require a Quality Management Plan (QMP) as part of the Project Management Plan. Planning for Quality Assurance is an integral part of the QMP to be developed by the Project Manager prior to project inception. The Quality Management Plan shall follow the H&H Quality Management Plan Template, modified as necessary for project and client requirements, to ensure the quality of our services meets the requirements of the client within the requisite standard of care. All Quality Management Plans are subject to the approval of the Quality Manager.

The intent of this Quality Assurance Plan is to provide procedural controls for maintaining the quality of work delivered to the Client through communication and verification. Quality Assurance is not a substitute for appropriate project quality control activities.

Quality Assurance is validation that our services and products meet the requisite standard of care and communication of those standards. It is a company-wide process that confirms that the proper processes are in place and being followed.

Examples of Quality Assurance activities include:

- a) Quality Assurance Review – Review, by the Project Quality Assurance Lead, of documented internal and external comments generated during the internal QC process or external milestone review and confirmation that all comments were addressed, or the reviewer agrees to non-incorporation on the basis of sufficient explanation.
- b) Quality Assurance Audit – Audits consist of a review, by HQ or their designee in conjunction with the Project Manager and the Project Quality Assurance Lead, of Quality Control functions and documentation for conformance with applicable procedures. Quality Assurance Audits are covered in Section 6 of this document.
- c) Project Initiation Meetings – Project Initiation Meetings consist of two meetings held prior to the initiation of services and are discussed further in Section 5.
- d) Project Submission Reports – Optional report, prepared prior to phase or final submission of design plans and calculations and provided with the submission. Further discussion provided in Section 5.

3.1 Schedule & Frequency of QA Activities

QC processes are performed as work products are developed and/or at various stages of project development and need to be accounted for in the project development schedule. Quality Assurance must consider that the work may proceed through several major stages and that at completion of each milestone in the development of a project, major interdisciplinary coordination, or Internal Technical Review, the Quality Control documentation will be developed.

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 8
------------------------------------	----------------------------	------------------------	---	--------

The key to assurance of quality is verification that the quality control procedures and supplementary activities have been implemented and, if not, the Project Manager is informed of the discrepancies. The PM is responsible to plan and execute corrective actions. These actions require documentation by the Quality Manager and review of this documentation by the firm's Chief Technical Officer.

4.0 Documentation Requirements

4.1 Control of Documents

The Project Manager is directly or through delegation responsible for the handling and storage of all project documents. The Project Manager should identify and communicate to all project staff the location of all project documentation. Access to project documentation - including but not limited to filing, letters, memos, records, reports, calculations, computer output, drawings, specifications, and QA/QC documentation - shall be in accordance with the Hardesty & Hanover "Document Control and Retention Guidelines" and the requirements of the Project Information Control System (PICS). Files may be accessed by authorized personnel only.

The Project Quality Assurance Lead is responsible for the proper use, distribution, and approval of quality related documents. The Project Quality Assurance Lead, in implementing these duties, will prepare and distribute a written procedure for use on the project, as well as any checklists of quality related documents considered to be necessary.

Documentation must be kept in order to provide a record that the development and review process was performed as required. This documentation must include records of the important steps which led to the development of final planning documents as well as the final design, such as preliminary concepts, model validation, design calculations, computer code input and any communications, instructions and directives which have a direct bearing on the project.

4.2 Change Control of Design Documents

4.2.1 Change Control of Design Documents during Design

Once a Quality Assurance review has been initiated on a milestone submittal, work shall not continue to be progressed until after the submission has been made. Revisions to Project Design Documents shall not be permitted prior to a milestone submittal after the Verifier has signed off on the Check Print.

4.2.2 Change Control of Documents during Construction

The Project Manager is responsible to provide the interface with the client during the pre-bid, bid, and award stages of the Construction Contract. Supplements or addenda developed during this period shall receive the same level of review as the original document and be reviewed by the Discipline or Task Lead Engineer prior to issue.

As-Built Drawings and Specifications shall be developed per Contract/Agreement requirements. As-Built shall be independently reviewed to assure field marked prints and other sources of as-built information have been correctly translated onto the original document.

Revisions to Project Design Documents shall be controlled. Methods are established with the project Construction Management Team on a project-specific basis to assure revisions are reviewed to the same level as the original documents for the area of change and previous versions of the documents undergoing change have been appropriately controlled to prevent inadvertent use. Prior to submission, the Project Manager and Discipline or Task Lead Engineer shall review the Project Design Documents. Records of these activities shall be maintained by the Discipline or Task Lead Engineer.

4.3 Control of Records

Sufficient documentation and records will be accumulated to provide objective evidence that the design development and review process has been performed in accordance with accepted engineering practice, as well as in

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 9
------------------------------------	----------------------------	------------------------	---	--------

conformance to contractual requirements and client directions, including pertinent quality records of subconsultants, if any.

The documentation will include not only final design documents, such as drawings and specifications, but records of important steps which led to the final design, such as design calculations, communications, instructions and directives which have a direct bearing on the project.

Control of records shall be in accordance with the Hardesty & Hanover "Document Control and Retention Guidelines" and the requirements of the Project Information Control System (PICS). Records will be filed by subject, date, file category, etc. Quality Assurance reviews and audits and corrective action will be stored electronically and filed in the 200-PM\QA folder in the electronic project files along with the approved Project Quality Management Plan.

An Index of Project Records will be part of the File. Responsibility for the accuracy and completeness of the records is assigned to the Project Manager or their designee.

Access to records will be under control of the Project Manager or their designee.

Removal of records to a location other than the immediate area where the file is located will be restricted to authorized persons (Principal and Project Manager). Measures to identify removed files and their current location shall be maintained. Security measures as determined by the Project Manager will be applied to those records dealing with Construction Cost Estimates.

The Project Manager, in accordance with the provisions of the contract, will identify those records to be transmitted to the Client upon completion of the Project and transmit the appropriate records.

5.0 Communication Protocols

Quality should be advocated from the top down and the bottom up through communication between all levels of the project. Quality is achieved through adequate planning, scoping, communications and coordination, supervision, and technical direction; by providing adequate time in the schedule for thorough reviews; by proper definition of job requirements and procedures; by the use of appropriately skilled personnel; and by individuals performing their work functions carefully.

The Project Manager is responsible to ensure the project team understands the necessary steps and has the proper time to execute the necessary activities.

This section sets the minimum requirements for communication during project development.

5.1 Pre-Project

During the period before the initiation of the project, the Project Manager is responsible to develop the QMP as required by Operating Policy OP-06. During this phase, the Project Manager must communicate with the Client, HQ, the Quality Manager, and the Staffing Managers for the various disciplines required by the scope of services to identify resources for delivery and quality activities. Information from the QMP shall be entered into the Vision database, including but not limited to, designation of project category as Key or Fundamental per Operating Policy OP-06, project stage and proposed submission schedule.

In some circumstances the Quality Management Plan may be part of the project pursuit process and proposal. This is particularly true with Design-Build pursuits. For all projects, the QMP is subject to approval of the Quality Manager and/or Chief Technical Officer for use during project execution.

5.2 Project Start-up

Assuring the quality of our services requires each project to begin with the ultimate goals in mind. To this end, the quality process will have several specific and required steps as part of the project start-up procedure. The following identifies the minimum recommended steps to be taken and documented prior to the initiation of any project.

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 10
------------------------------------	----------------------------	------------------------	---	---------

5.2.1 Project Initiation Technical Meeting

Subsequent to review of the Project Technical Plan, the CTO will determine if the project requires a Project Initiation Technical Meeting. If required, a Project Initiation Technical Meeting will be scheduled with the firm technical managers. The purpose of this meeting is to discuss the following:

- a) Scope of services
- b) Client expectations
- c) Project schedule
- d) Anticipated work plan and staffing needs
- e) Specific technical requirements or complexities
- f) Risks associated with the project and the intended mitigation measures
- g) Quality Management Plan

The following individuals, or their appointed representative, should participate in the Project Initiation Technical Meeting:

- a) Chief Technical Officer
- b) Chief Operating Officer/Director of Project Management
- c) Quality Manager
- d) Principal-in-Charge (At their discretion)
- e) Project Manager
- f) Project Engineer

The Project Manager shall be responsible for taking minutes of the meeting and distributing the minutes to all attendees. Approved minutes shall be filed in the Project folder.

Subsequent to the Project Initiation Technical Meeting, the Staffing Manager will assign specific resources for the project based on the needs identified at the meeting. These specific resources should be utilized by the project management team to fulfill the key roles in the project work plan.

The Project Initiation Technical Meeting may serve as the formal initiation of the project.

5.2.2 Project Staff Kick-off Meeting

Once the specific resources are assigned and their roles identified, the Project Management team should schedule a Project Staff Kick-off meeting. The Project Staff Kick-off meeting serves to inform the assigned staff of the following:

- a) Scope of services
- b) Project schedule including document submittals, number, and degree of completion
- c) Key staff roles and associated responsibilities
- d) Quality Management Plan including key staff assigned for Quality Control and Assurance activities
- e) Quality activities shall occur and be documented throughout the project development process.

The following individuals, or their appointed representative, should participate in the Staff Kick-off Meeting:

- a) Project Manager
- b) Project Engineer

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 11
------------------------------------	----------------------------	------------------------	---	---------

- c) Project Quality Assurance Lead
- d) Project Discipline or Task Leads

The Project Manager shall prepare and submit the minutes of the meeting to the attendees of the Project Staff Kick-off meeting and the Project Initiation Technical Meeting.

5.3 Project Development

Phase submissions to the client, and other preliminary document reviews, such as technical policy or constructability, should be identified in the Quality Management Plan. At project inception, the Project Manager will assign dates to each phase submission and provide the schedule in Vision for incorporation into a companywide schedule for quality management activities. The Project Manager shall inform the Quality Manager or a member of the quality management support staff, as appropriate, of changes to the project schedule that impact the milestone dates.

Communication processes during project development at a minimum should include the following:

- a) Providing all information covered during the Project Staff Kick-off Meeting and the minutes from that meeting to any new staff joining the project.
- b) Coordination with the Project Quality Assurance Lead, Discipline or Task Leads, and the Project Engineer to ensure that all documentation is being filed according to the QMP.
- c) Coordination with the Project Quality Assurance Lead, Discipline or Task Leads, and the Project Engineer in advance of phase and/or final submittals for Quality Assurance Verification Processes.

Progress beyond set milestones shall not be permitted without the authority of the Project Manager and communication to the Project Quality Assurance Lead. The PM is responsible for confirming that Quality Control processes have been completed and documented, that the Reviewer has verified that all comments have been correctly incorporated, and that the document review is complete, with any outstanding issues resolved in accordance with the procedures in the Quality Control Plan. The PM shall sign and seal the Quality Assurance Review & Certification Form (Form QAR) for all external submittals or as directed by the QM.

5.3.1 Project Submission Report

To facilitate the Quality Assurance process, Project Managers are strongly encouraged to include a Project Submission Report (PSR) with phase and final submissions where the submission deliverable is not a report. A PSR covers one distinct discipline or task associated with the project, but several disciplines or tasks may be combined in to one report at the discretion of the Project Manager. The PSR is developed in coordination with the Discipline or Task Leads and the Project Engineer.

A PSR typically consists of the following sections:

- a) Introduction – This section contains a brief summary of the project, a description of the design elements covered in the PSR, a statement of purpose for the submission, and a list of any reference documents.
- b) Design and Performance Criteria
- c) Design Approach
- d) Design Changes from Prior Submission (if appropriate)
- e) Detailed Discussion of the PSR Design Elements
- f) Responses to Comments on Prior Submission (if appropriate)
- g) Summary of Design Variations.

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 12
------------------------------------	----------------------------	------------------------	---	---------

5.4 Post Design

5.4.1 Post Design Kickoff Meeting

At the start of the Post Design Phase, the Project Management team should schedule a Project Post Design Kick-off meeting. The Post Design Kick-off meeting serves to inform the assigned staff of the following:

- Approved stamps to be used
- Appropriate use of stamps for Shop Drawings vs Construction procedures, calculations, catalog cuts, etc.
- Correct review and mark -up procedure as per the firm QC Plan
- Logging requirements and maintenance of logs

6.0 Quality Assurance Verification

Documentation is to be kept which provides a record that the design development and review process was performed as required. This documentation is to include records of the important steps which led to the development of final planning documents as well as the final design, such as preliminary concepts, model validation, design calculations, computer code input and any communications, instructions, and directives which have a direct bearing on the project.

Types of documentation to be reviewed for compliance with the procedures set out in the Quality Control Plan:

- a) Design Criteria
- b) Reports – All reports prepared for the project irrespective of type.
- c) Interdisciplinary Coordination – Minutes of meetings and signed attendance lists.
- d) Calculations/Computer Solutions
- e) Drawings
- f) Specifications
- g) External Comment Responses
- h) Prior Audit Documents – All documentation provided by the Quality Auditor including recommendations for improvement, nonconformance reports, and any other check lists.

6.1 Quality Assurance Reviews

Quality Assurance reviews should be implemented in advance of all external submittals for a project. A Quality Assurance Review documents compliance with the QC Plan and identifies areas of nonconformance.

A Quality Assurance Review consists of review, by the Project Quality Assurance Lead, of documented internal and external comments generated during the internal QC process or external milestone review and confirmation that all comments were addressed, or the reviewer agrees to non-incorporation on the basis of sufficient explanation.

The goal of the Quality Assurance Review is to identify areas of weakness in the Quality Control process and develop preventive actions that focus on areas of potential nonconformance to reduce the risk associated with these areas.

The QA Review should identify potential nonconformities, their probable cause, determination of preventive action needed, implementation of preventive action and determining if preventive action was implemented and effective in preventing nonconformity.

The Project Manager is responsible for developing and implementing preventive actions that address the potential areas of nonconformance identified in the Quality Assurance Review and works to reduce or eliminate the risk in

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 13
------------------------------------	----------------------------	------------------------	---	---------

these areas. The Project Quality Assurance Lead shall document the preventive action procedures and lead the discussion with the Project Manager, Project Engineer, and HQ.

Any preventive action procedure shall identify the necessary steps required to reduce the risk of nonconformance. The steps should include, but not be limited to, quality review of the proposed work prior to submission and “lessons learned” from previous or similar types of projects.

6.1.1 Phase Submittals

Phase submittals are required to be checked, back checked, corrected, and verified prior to submittal in accordance with the Quality Control Plan. The level of detail of the review may be varied at the discretion of the PM provided that all critical information, either specifically required by the contract or considered fundamental to the development of the design, is verified to have received a full check and back check as detailed in the Quality Control Plan for the classification of document and as appropriate for the level of development.

At a minimum, the following items shall be verified:

- a) Presence of a completed Quality Control Stamp on a check print of all submittal documents.
- b) Completion of any Internal Technical Reviews
- c) Incorporation and/or response to all comments from both internal reviewers and external milestone reviewers (if applicable). All comments should be responded to on a Comment Response Form (CRF). CRF format to be determined by the PM in consideration of any Client requirements

6.1.2 Design Build Submittals

In general, specific requirements for design build submittals will be addressed in the contract and/or the Project Management Plan. Design Build submittals shall be subject to the same Quality Assurance process as defined herein for design projects. All final design build submittals (i.e., 90% submittals or those marked for construction such as “Issued For Construction” (IFC) or “Released For Construction” (RFC)), whether submitted as a phase submittal or as part of a complete set of final documents, will be subject to a Quality Assurance Review.

6.2 Quality Assurance Audits

Quality Assurance Audits will be performed to confirm conformance with the Quality Management Plan of a given project. The focus of the audit is to verify that each project has sufficiently accomplished all quality goals set forth in the Quality Management Plan, to identify any areas of nonconformance, and determine any corrective actions. Quality Assurance Audits will be scheduled by the Quality Manager and Chief Technical Officer.

The minimum number of Quality Audits shall be once during the life of the Contract/Agreement or a minimum of once a year on multi-year Contracts/Agreements and once per year during post design (CSS) activities. Additional Quality Assurance Audits may be scheduled by HQ during extended periods of project development, after a period of interruption in work, during post design services (construction support services), or during or immediately after inspection operations.

6.2.1 Quality Assurance Audit Process

Audits will be administered and documented by a Quality Auditor assigned by HQ. The Principal-in-Charge, Project Manager, and Project Quality Assurance Lead shall participate in the QA Audit if requested by the Quality Auditor. The Project Quality Assurance Lead is responsible to provide all necessary information for the audit.

Personnel conducting audits are required to be objective and impartial in conducting the audit. Self-audits shall not be allowed.

The evaluation will consist of review of documents, site visits (if applicable), discussions with staff, and nonconformance evaluations. The purpose of the evaluation is to confirm adherence to the QMP.

Prepared By J. Bade C. Leahy	Approved By K. Griesing	Quality Assurance Plan	REV 3: Updated 05/27/2021 REV.4: Updated 02/28/2022 REV. 5 Updated 12/29/2022	Page 14
------------------------------------	----------------------------	------------------------	---	---------

Results of Quality Audits shall be documented in the Quality Audit Log. If issues of nonconformance are identified, recommended corrective and preventative actions shall be generated as a portion of the Nonconformance Report. Where applicable, systemic corrective and preventative actions are communicated companywide to affect a companywide change.

Follow-up Quality Audits are performed as necessary, to ensure implementation of corrective action with the results reported to the Project Engineer, Project Manager, Quality Manager, and Chief Technical Officer.

6.3 Control of Nonconforming Product

A nonconformance in work output occurs when non-trivial errors are discovered in output documents issued as final documents. Final documents are signed and dated documents ready to be issued for construction, bid, or procurement.

Reports of nonconformances discovered by outside sources shall be processed by the Project Manager and Quality Manager.

6.3.1 Corrective Action

If required, any Corrective Action is monitored to ensure closure.

Corrective action will be appropriate to the severity of the nonconformance identified. The Project Manager shall develop and implement any corrective action procedure taken. The corrective action procedure shall be approved by the Chief Technical Officer. The procedure shall identify the nonconformance root cause and the necessary actions required to resolve the nonconformance to the satisfaction of the client. The procedure addresses nonconformity identification (including client complaints), cause determination, action to prevent recurrence, identifying and implementing the corrective action, recording results, and determining if the corrective action was implemented and effective in resolving the nonconformance.

7.0 Sub-Consultants

Subconsultants are responsible for performing their own Quality Control. H&H Project Managers shall require QA/QC Plans from all sub-consultants. Subconsultants that choose not to provide their own QA/QC plans must adopt the H&H QA/QC plans. H&H Project Managers are responsible for the following:

- a) Review of sub-consultant's internal QA/QC Plan for adequacy in meeting client and project requirements. If inadequate, H&H will require further provisions be incorporated into the sub-consultant's QA /QC Plan as necessary to meet project requirements.
- b) If the subconsultant has adopted the H&H QA/QC plan, H&H Project Managers shall provide copies of the plans and review the requirements with the subconsultant's Project Manager at project initiation.
- c) Meet with sub-consultant's Project Manager periodically to ensure that the sub-consultant is adhering to their QA/QC Plan. The H&H Project Manager is responsible for auditing subconsultants in accordance with the subconsultant audit schedule provided in the Project Management Plan.



Hardesty & Hanover, LLC Quality Control Plan

Table of Contents

1.0	Introduction	3
2.0	Key Definitions and Roles.....	3
3.0	General Intent	5
4.0	Process by Document Type / Class.....	5
4.1	Design Plans.....	5
4.1.1	Preparing a Check Print of a Drawing.....	7
4.1.2	Checking Drawings	7
4.1.3	Back Checking Drawings	8
4.1.4	Correcting Drawings	8
4.1.5	Verification of Original Check Print	9
4.1.6	Verification of New Check Print	9
4.1.7	Checking Process for Additional Changes to Drawings.....	9
4.1.8	Checking Process for Multiple Phase Reviews.....	9
4.2	Calculations	10
4.2.1	Preparing Check Copies of Calculations	10
4.2.2	Checking Calculations	11
4.2.3	Back Checking Calculations	12
4.2.4	Correcting Calculations.....	12
4.2.5	Verification of Original Check Copy of a Calculation	12
4.2.6	Checking Process for Additional Changes to Calculations	13
4.2.7	Independent Check in Lieu of Detailed Checking	13
4.3	Reports & Specifications.....	13
4.3.1	Preparing Check Copies of Reports & Specifications.....	14
4.3.2	Checking Reports & Specifications.....	14
4.3.3	Back Checking Reports & Specifications.....	15
4.3.4	Correcting Reports or Specifications	15
4.3.5	Verification of Corrections to Reports & Specifications.....	15
4.3.6	Checking Process for Additional Changes to Reports or Specifications.....	16
4.3.7	Checking Reports or Specifications Electronically.....	16
4.4	Internal Technical Reviews	16
4.4.1	Preparing Work Product for ITR.....	16
4.4.2	Performing Internal Technical Reviews	17
4.4.3	Reconciliation of Internal Technical Review Comments	17
5.0	Checklists.....	17
6.0	Submittals	17

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 1
-------------------------	----------------------------	----------------------	---	--------

6.1	Phase Submittals	17
6.2	Final Submittals	18
6.3	Design Build Submittals	18
6.4	Miscellaneous Submittals	18
7.0	Post Design Submittal Reviews	18
7.1	Shop drawings	19
7.2	Review of Construction Methods and/or Procedures.....	19
8.0	Owner's Engineer or Peer Review Role	20

1.0 Introduction

Quality Control is a series of activities, actions and procedures routinely undertaken to ensure that our services and their representative work products are produced to the requisite standard of care and in accordance with the defined technical philosophy of the firm. This manual defines specific procedures for executing quality control functions in the preparation of engineering studies and designs, including reports, plans, specifications, and other similar documents. This Quality Control Plan (QCP) shall be implemented as an element of the overall project Quality Management Plan (QMP) where either specifically called for in the Contract, Project Management Plan (PMP), or where implied by project or industry standards.

2.0 Key Definitions and Roles

The following definitions are used throughout this manual:

- a) **Back Checker:** The individual who reviews the Checker's comments. The Originator/Producer functions as the Back Checker unless another qualified individual is assigned by the Project Manager (PM).
- b) **Checker:** The individual who through education and/or experience is knowledgeable within an area of technical subject matter, who has been assigned by project leadership to perform an accuracy and correctness check of technical content.
- c) **Check Print:** The copy of the work product to be used in the quality control (QC) process. The Check Print may be a hard (paper) copy or a digital file such as a Portable Document File (PDF) that is capable of recording review markups. A Check Print is required at each Hold Point and may be requested by the Client, PM, or Headquarters Engineering (HQ) at a Witness Point. Refer to the appropriate process by document type/class in Section 4 for Check Print contents.
- d) **Hold Point:** A level of design where specific aspects of the project such as design objectives, design criteria, and principal geometry are typically locked in. Hold Points require completion of all Quality Control procedures and Quality Assurance Review and Certification before a submittal can be made. Once the QC process is initiated, the work product cannot continue to be progressed. The project Hold Points shall be established by the PM in compliance with Client and HQ requirements at the beginning of the project. All external milestone submittals are Hold points.
- e) **HQ:** Also referred to as Headquarters Engineering. This specifically refers to the authority of the technical directors such as but not limited to the Chief Technical Officer, Director of Engineering, Risk Management Officer, Quality Manager, or respective Practice Leaders and Chief Engineers.
- f) **Independent Check:** Verification of a calculation by performing a separate standalone calculation to confirm results in lieu of performing a detailed check.
- g) **Internal Technical Reviewer:** Reviewer, assigned by HQ, for a project or portion thereof that has not been a principal participant in the development of a work product.
- h) **Originator/Producer:** The individual, qualified by experience in the applicable discipline, who is assigned to prepare documents and/or generate work product.
- i) **Phase Submittal:** A milestone submittal of a preliminary work product to a client (i.e., Concept plans, 60% plans, or similar prior to final.)
- j) **Plans:** Drawings and/or CADD files created by Hardesty & Hanover (H&H) for use by the Client as part of the contract or bid documents or, in the case of alternative delivery such as Design/Build, to construct the project.

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 3
-------------------------	----------------------------	----------------------	---	--------

- k) **PE:** Project Engineer.
- l) **PM:** Project Manager.
- m) **Preliminary:** A document, including reports, plans, specifications, or similar documents, prepared by H&H and submitted to the client prior to the anticipated final submittal of such document. Preliminary documents are 100% complete and validated by QC but represent a lesser level of development than the final work product.
- n) **Quality Management Plan (QMP):** The plan developed by the Project Manager to describe specific quality requirements for a given project. The QMP typically includes project-specific amendments to the current edition of the H&H Quality Management Plan.
- o) **QC Stamp:** A physical or digital stamp applied to work product to signify that it is the Check Copy (aka Check Print) and for recording the initials and dates of the individuals who performed the quality control process.
- p) **Quality Assurance:** The systematic review of design and development processes, specifically Quality Control activities, to confirm that processes are implemented per policy and the desired level of quality has been attained and will continue to be obtained. Quality Assurance identifies procedural shortfalls and recommends changes to improve our processes.
- q) **Report:** Any document (letter, report, inspection report, etc.) prepared under the terms of a Contract and intended for distribution outside of H&H, which includes statements of professional opinion, condition assessment, calculation, evaluation, design, engineering judgment, cost estimates, etc.
- r) **Specifications:** Custom technical specifications or special provisions prepared by H&H to amend, supplement, or modify the project's standard construction or material specifications.
- s) **Stet:** Let it stand (used as an instruction on a printed proof to indicate that a correction or alteration should be ignored).
- t) **Verifier:** The individual assigned to verify that the Checker's and Originator/Producer's comments have been implemented. The Verifier may be any individual assigned by the PM but will preferably be the Checker.
- u) **Witness Point:** A level of design that has not been identified as a Hold Point by the Client, the PM, or HQ but for which QA activities may be required. Witness Points may include items such as the Quality Management Plan, project schedule, interim phase submittals (30%,60%,90%), field inspection MOT plans, field inspection verification plans, and internal progress sets. All external milestone submittals, whether Witness or Hold Points require Quality Assurance Review and Certification prior to submittal.
- v) **Work Product:** A document or other product produced by H&H for a client under the terms of a contract. Work products may be hard copies, electronic deliverables, or electronic files (e.g., CADD files, spreadsheets or similar.)

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 4
-------------------------	----------------------------	----------------------	---	--------

3.0 General Intent

It is the general intent of this plan to define procedures for quality control which minimize errors, discrepancies, and omissions in H&H's work products. Furthermore, such procedures are intended to produce concise, delineated records of the in-house quality control process.

Although the physical process may vary for detailed checking of the various types of work products prepared under the requirements of this plan, the intent is for each work product to be thoroughly reviewed in detail by someone in addition to the review by the Originator/Producer who prepared that work product for conformity with generally accepted standards of design and engineering practice. Items transmitted purely for informational purposes and coordination of the design development may not need to follow the full QC process but must be reviewed by someone other than the Originator and documented with a QAR form. Frequency and content of required documentation shall be determined by the Quality Manager. Unless otherwise approved by the engineer in responsible charge, at least one of the primary individuals involved in preparing (Originator/Producer) or checking (Checker) a document shall be a Professional Engineer, experienced and qualified in the appropriate engineering discipline. Similar credentials are required in the event the work product is other than an engineering work product.

Comments generated by the quality control process are to be resolved to the satisfaction of both the Originator/Producer and the Checker. The process of Quality Control (QC) is to be documented and recorded in a manner which allows for management of the process and review of the process through Quality Assurance (QA).

Some work products and services may require the use of third-party information and/or materials provided by the client, or the use of data, documents or services provided by subcontractors, subconsultants, and suppliers. As required in their subcontract and approved Quality Management Plan, if one exists, subcontractors, subconsultants, and suppliers are ultimately responsible for the quality of the goods, work products and services they provide. Where H&H has a prime contractual relationship, H&H will review subcontractor, subconsultant, and supplier work products, supplied materials, and services only to verify compliance with contractual requirements and to coordinate the work. This does not preclude project specific reviews of subcontractor, subconsultant, and supplier work product if such reviews are required by contract.

4.0 Process by Document Type / Class

Each type of work product produced will be subjected to a detailed quality control process as defined herein. Prior to initiation of the quality control process the PM/PE shall review and coordinate with the Originator/Producer the appropriate level of detail and information for a given document type or class and level of development. Work products of a type not specifically noted shall be processed by the most appropriate process, as determined by the PM. Except as noted for preliminary documents in Article 6.1, all documents submitted to someone outside the design team (or design build team in the case of a Design/Build project) shall be checked in accordance with the requirements of this section. Specific colors are assigned to each role in the checking process; however, alternate color schemes may be used as long as the role and associated color are clearly identified. The Project Manager or Project Engineer shall modify permissions to the project submittal folders to prevent editing of documents that have completed the QC process.

4.1 Design Plans

All drawings shall be checked for technical content, clarity, style, and conformance with design criteria and Client/H&H standards by someone other than the Originator/Producer. This process shall be executed and documented as noted below and in the flow chart of Figure 1.

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 5
-------------------------	----------------------------	----------------------	---	--------

Design Plan Development

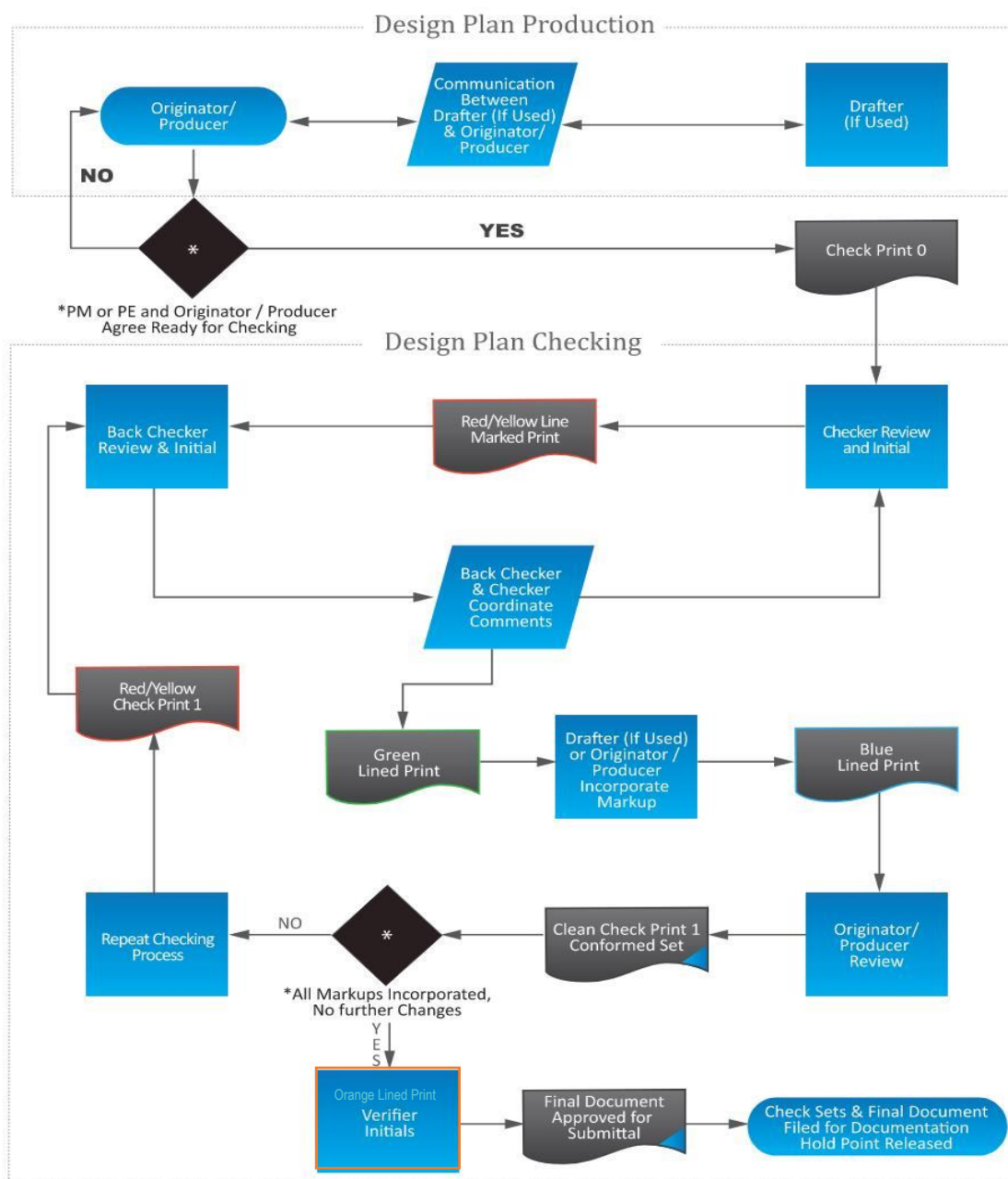


Figure 1

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 6
-------------------------	----------------------------	----------------------	---	--------

4.1.1 Preparing a Check Print of a Drawing

Once the Originator/Producer and PM have agreed that a drawing contains the appropriate level of detail and information required at the phase submission, or is substantially complete and ready for checking, a Check Print will be prepared, and the PM will assign it to the Checker. Each Check Print shall bear a red Quality Control Stamp as shown in Figure 2 with the Originator/Producer's initials and date in the "Ready for Checking" boxes. The Check Print shall be designated as final or for a specific phase submittal. It is preferred that the QC stamp is applied to each sheet.

However, for electronic files only, if one stamp is applicable to all sheets within a discipline, One stamp may be applied to the first sheet and a note added indicating to which sheets the QC stamp applies.

H&H QC DOCUMENT	PHASE ____ or FINAL ____	
PROCESS	INITIALS	DATE
READY FOR CHECKING		
CHECKED CORRECT (YELLOW) CHANGE (RED)		
BACK CHECKED (GREEN)		
CORRECTED (BLUE HIGHLIGHTER)		
VERIFIED (ORANGE HIGHLIGHTER)		

Figure 2

4.1.2 Checking Drawings

The Checker's colors are YELLOW and RED

The Checker will ascertain that the drawing is consistent with the corresponding checked calculations, design reports, and other related project documents. The Checker is required to perform the following:

- Ascertain that the document conforms with reliable engineering judgment and practice and is suitable and sufficient to accomplish the required function; the Checker shall review the Check Print in detail for:
 - Technical sufficiency appropriate for the level of design development
 - Conformance with design calculations
 - Conformance to applicable standards and design criteria
 - Coordination with specifications and other design documents
 - Conformance with established CADD formats and styles. The project CADD Standards and project drawing templates are established by the CADD Manager under direction of the PM. Any questions about conformance with the project CADD Standards should be referred to the CADD Manager.
- Highlight in YELLOW each element or section checked that is found to be correct, and/or with which the Checker agrees on the Check Print. If no corrections are needed, a yellow slash through a sheet or detail or a large yellow check over a sheet or detail signifies that the Checker has reviewed that sheet or detail.
- Mark in RED on the Check Print any corrections, additions, and/or deletions, mark any questions directed to the Originator/Producer in RED.
- The Checker initials and dates the Check Print in the appropriate box ("Checked") of the Quality Control Stamp on the Check Print(s) and forwards the document for back checking, unless no changes are required in which case the QC process is complete.

- e) If the check is limited to a particular discipline, or component, of the drawing this shall be noted on the Check Print or first sheet of a set of Check Prints.

4.1.3 Back Checking Drawings

The Back Checker's color is GREEN

After the Checker has completed review of the Check Print, the Back Checker (either the Originator/Producer or their appropriate designee), reviews the Checker's marks and agrees to or resolves the Checker's proposed corrections. The Back Checker is required to perform the following:

- a) Verifies that the complete drawing has been checked in accordance with the above requirements (i.e., all applicable contents of the drawing are marked in either yellow or red), checkmarks in GREEN each of the Checker's red marked changes to signify agreement with the Checker that the marked changes are to be made or adds in GREEN any additional changes not identified by the Checker. Answers Checker's questions in GREEN and marks up any changes needed to implement the response, also in GREEN.
- b) Returns to Checker if necessary. Every modification, including all comments marked STET, responses, or additional changes made by the Back Checker in GREEN must be highlighted in YELLOW by the Checker to signify agreement.
- c) Resolves significant differences of opinion with the Checker. If an understanding or agreement cannot be reached, the Checker refers the issue to the Project Engineer, Discipline Chief Engineer, or Project Manager before continuing with the checking process. Upon agreement of the solution:
 - 1) The Checker marks their concurrence (YELLOW).
 - 2) Cross out in GREEN each of the Checker's red marked changes that the Originator/Producer and Checker agree should not be changed. The Back Checker rewrites next to the crossed out red marks the original information that is to remain unchanged or indicates "stet".
- d) Confirms that every red marked change made by the Checker now has a GREEN check next to it and that every modification, including all comments marked STET, or additional change made by the Back Checker in GREEN has been highlighted in YELLOW by the Checker to signify agreement.
- e) The Back Checker initials and dates the Check Print stamp ("Back Checked") and forwards the reconciled Check Print to the Originator/Producer (if different from the Back Checker) for correction.
- f) Note: If the Back Checker is also the person correcting the drawing, the Back Checker should still apply the Green check or highlight to show agreement with the change. Documenting that a change was corrected does not eliminate the need for also documenting agreement with the change. This step should not be omitted.

4.1.4 Correcting Drawings

The Corrector's color is BLUE

- a) The Originator/Producer corrects, or supervises the correction of, the original document to implement the changes agreed to by the Checker and Back Checker. As corrections are made the changed item is highlighted in BLUE on the Check Print to document the action.
- b) Upon completion of the corrections, the Corrector makes a new print, initials, and dates the Check Print stamp ("Corrected") on the original Check Print and forwards the original Check Print and corrected new print to the Verifier for verification.
- c) If the changes are so extensive as to make the first Check Print illegible for use by the Checker, the Originator/Producer makes a new Check Print upon completion of the corrections, labels it Check Print #2,

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 8
-------------------------	----------------------------	----------------------	---	--------

places a new QC Stamp on the print, and places it on top of Check Print #1, which is then stamped or marked "revised". The Originator/Producer initials and dates Check Print #2 in the appropriate box of the Quality Control Stamp ("Ready for Checking") and forwards the document to the Checker to repeat the process.

4.1.5 Verification of Original Check Print

The Verifier's color is ORANGE

The Verifier compares each of the Back Checker's marked changes on the previous version of the Check Print(s) (Original or Check Print #2), with the revised part of the updated document. If the Verifier concurs that the changes have been properly implemented, the Verifier marks over the changes with ORANGE on the Check Print. The Verifier will also make certain that no inadvertent changes, not noted on the Check Print, have been made.

4.1.6 Verification of New Check Print

When the Verifier is processing a new Check Print (#2, #3, etc.), the Verifier must compare each part of the new Check Print with the corresponding part of the previous Check Print. If the changes have been made accurately on the updated Check Print, the Verifier:

- a) Checks that each correction, addition, and/or deletion as well as each new section that has been redrawn, rewritten, retyped, or recalculated has been correctly transferred to the original from the Check Print(s).
- b) On the most recent Check Print of the corrected document, marks over all the corrections that were made in ORANGE.
- c) Verifies that no inadvertent changes, not noted on the Check Print, have been made to any parts of the drawing and signifies so by striking a YELLOW mark across the drawing.
- d) Marks in RED on the new Check Print any corrections, additions, and/or deletions that were overlooked on the backchecked Check Print.
- e) Returns the Check Prints to the Back Checker, who checks in GREEN the red marks, if found to be correct, on the new print marked by the Verifier, and sends the Check Prints for correction. When all changes in the most recent Check Print have been marked over in ORANGE, the checking process is complete.
- f) The Verifier initials and dates the Check Print stamp on the line designated for the Verifier and signs off in the drawing or calculation sheets as specified and forwards the Check Print to the Originator of the document.

4.1.7 Checking Process for Additional Changes to Drawings

If additional changes or revisions become necessary, following review by the client, for example, they are processed on a new Check Print in the same manner as described previously. Although only the new changes need to be checked, the Originator/Producer and Checker are still responsible for assuring that correct interfacing with the affected changes is checked completely. The Originator/Producer and Checker must verify that any changes or revisions are coordinated throughout the project documents, including calculations, plans, and specifications. They must also ensure changes or revisions are made on CADD files, computer printouts, and contract reports.

4.1.8 Checking Process for Multiple Phase Reviews

Phase Reviews, where required (refer to Section 6.1 Phase Submittals), are processed in the same manner as described previously except as noted herein. Although only the changes, updates and new content not verified on previous Check Prints need to be checked, the Originator/Producer and Checker are still responsible for assuring that the document is checked completely. A yellow slash through a sheet should be used if previously checked and no changes were made since the prior phase submission. If there have been no changes to the entire set or to a discipline specific set, a copy of the prior check set, with a note on the cover sheet indicating no changes from prior check set,

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 9
-------------------------	----------------------------	----------------------	---	--------

should be placed in the folder for this phase. The Originator/Producer and Checker must verify that any changes or revisions, including changes implemented in prior checking, are coordinated throughout the project documents, including calculations, plans, and specifications. Unless prior Check Prints are affixed to the current Check Print, the Checker shall note the source (e.g., prior phase Check Print) for items that are accepted based on a previously checked set.

4.2 Calculations

Calculations that support final work product shall be checked for technical content, clarity, style, and conformance with design criteria and standards by someone other than the Originator. This process shall be executed and documented as noted below and in the flow chart of Figure 3.

Design Calculation Development

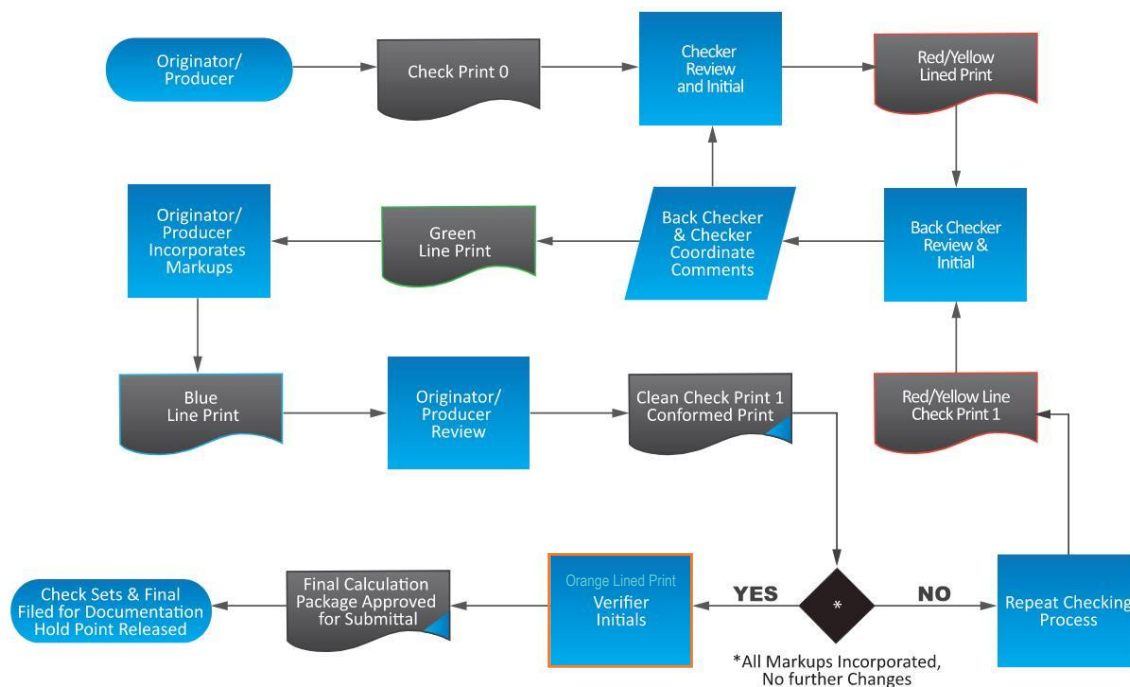


Figure 3

4.2.1 Preparing Check Copies of Calculations

Once the Originator/Producer and PM or PE have agreed that a calculation is substantially complete and ready for checking, a Check Copy will be prepared, and the PM or PE will assign it to the Checker. The Checker will be provided with the design criteria. It is strongly encouraged that a brief narrative for the design element be included as part of the design criteria write up. The first sheet of the calculation must be a Calculation Cover Sheet. Each Check Copy shall

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 10
-------------------------	----------------------------	----------------------	---	------------

bear a red Quality Control Stamp as shown in Figure 2 on the cover sheet with the Originator/Producer's initials and date in the "Ready for Checking" boxes. In lieu of placing the QC stamp on the cover sheet, a standalone sheet with the QC stamp may follow the cover sheet. The Check Copy shall be designated as final or for a specific phase submittal. Each sheet of the calculation or each cover page of computer analysis output will include the initials of the Originator/Producer and all pages will be numbered.

4.2.2 Checking Calculations¹

The Checker's colors are YELLOW and RED

The Checker will ascertain that the calculation is consistent with the design reports, design criteria, and other related project documents. The Checker is required to perform the following:

- a) Ascertain that the calculation conforms with reliable engineering judgment and practice and is suitable and sufficient to accomplish the required function; the Checker shall review the calculation in detail for:
 - Technical sufficiency appropriate for the level of design development
 - Conformance with related design calculations
 - Mathematical accuracy
 - Conformance to applicable standards and design criteria
 - Coordination with specifications and other design documents.
- b) Highlight in YELLOW each element, or section checked, that is found to be correct and/or with which the Checker agrees, on the Check Copy. For software programs which use a color highlighting scheme to designate different types of input, a yellow checkmark or yellow slash down left side of the page may be used in lieu of highlighting each element.
- c) Mark in RED on the Check Copy any corrections, additions, and/or deletions.
- d) Prepare and attach any independent calculations made by the Checker.
- e) Resolve significant differences of opinion with the Originator. If an understanding or agreement cannot be reached, the Checker refers the issue to the Project Engineer, Discipline Chief Engineer, or Project Manager before continuing with the checking process.
- f) The Checker initials and dates the cover sheet in the appropriate box of the Quality Control Stamp on the Check Copy and forwards the document for back checking.

¹ The process outlined in this section is intended for calculations that can be checked without generating significant paper waste such as hand calculations, simple Mathcad output, simple Spreadsheets, etc. For computer programs generating voluminous output files the output should not be printed hard copy. The process should be followed electronically on a PDF. Alternately, a summary sheet of the output from the computer program can be prepared and a list of files checked can be appended to the summary sheet with the following information included: file directory / name, timestamp, and list of inputs checked. If the appropriate checked information can be summarized on one screen or input box, screen shots may be appended as appropriate.

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 11
-------------------------	----------------------------	----------------------	---	------------

4.2.3 Back Checking Calculations

The Back Checker's color is GREEN

After the Checker has completed review of the Check Copy, the Originator/Producer, acting as Back Checker, reviews the Checker's marks and supervises or personally makes the changes required. The Back Checker is required to perform the following:

- a) Verifies that the complete calculation has been checked in accordance with the above requirements (i.e., all appropriate contents of the calculation are marked in either yellow or red), checkmarks in GREEN each of the Checker's red marked changes to signify agreement with the Checker that the changes marked are to be made, or adds in GREEN any additional changes not identified by the Checker.
- b) Resolves significant differences of opinion with the Checker, if an understanding or agreement cannot be reached, the Checker refers the issue to the Project Engineer, Discipline Chief Engineer, or Project Manager, for resolution.
- c) Confirms that every red marked change made by the Checker now has a GREEN check next to it and that every additional change made in GREEN has been highlighted in YELLOW by the Checker to signify agreement. For software programs which use a color highlighting scheme to designate different types of input, a yellow checkmark may be used in lieu of highlighting.
- d) Crosses out in GREEN each of the Checker's red marked changes that the Back Checker and the Checker agree should not be changed. The Back Checker rewrites next to the crossed out red marks the original information that is to remain unchanged or indicates "stet". The Checker must mark all such green marks in YELLOW.
- e) The Back Checker initials and dates the Check Copy cover sheet in the appropriate box ("Back Checked") of the Quality Control Stamp and forwards the document for correction.
- f) Note: If the Back Checker is also the person correcting the calculation, the Back Checker should still apply the Green check or highlight to show agreement with the change. Documenting that a change was corrected does not eliminate the need for also documenting agreement with the change. This step should not be omitted.

4.2.4 Correcting Calculations

The Corrector's color is BLUE

- a) The Originator/Producer corrects the original document, or supervises correction of the calculation, to implement the reconciled changes. As corrections are made the changed item is highlighted in BLUE on the Check Print to document the action.
- b) The Originator/Producer initials and dates the cover sheet in the appropriate box of the Quality Control Stamp ("Corrected") and forwards the Check Copy and corrected original (or copy) to the Checker for verification.

4.2.5 Verification of Original Check Copy of a Calculation

The Verifier's color is ORANGE

- a) The Verifier compares each of the Back Checker's marked changes on the Check Copy, with the revised part of the corrected calculation. If the Verifier concurs that the changes have been properly implemented, the Verifier marks over the changes in ORANGE on the Check Copy. The Verifier will also make certain that no inadvertent changes, not noted on the Check Copy, have been made. For software programs which use a color highlighting scheme to designate different types of input, an orange checkmark may be used in lieu of highlighting.

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 12
-------------------------	----------------------------	----------------------	---	------------

4.2.6 Checking Process for Additional Changes to Calculations

If additional changes or revisions become necessary, following review by the Client or significant changes during detailing, for example, they are processed on a new Check Copy in the same manner as described previously. Although only the new changes or revisions need to be checked, the Originator/Producer and Checker are still responsible for assuring that correct interfacing with the affected changes is checked completely. The Originator/Producer and Checker must verify that any changes or revisions are coordinated throughout the project documents, including calculations, plans, and specifications.

4.2.7 Independent Check in Lieu of Detailed Checking

With approval of the PM, or if required by the Contract, the Checker may perform an Independent Check in lieu of following the detailed checking procedure outlined above. The Independent Check shall consist of a standalone set of calculations that produce results similar enough to the original calculation to confirm its accuracy and adequacy. An Independent Check is most commonly used to check the results of analysis produced using proprietary software or in-house computer applications. An Independent Check may be done by hand calculations or using a software application other than the original calculation.

To implement an Independent Check, apply the QC Stamp to the cover sheet of the calculations and write "Independent Check" across the Checked box in GREEN pen.

As part of an Independent Check, the Checker is required to perform the following:

- a) Ascertain that the calculation conforms with reliable engineering judgment and practice and is suitable and sufficient to accomplish the required function.
- b) Review the original calculation for:
 - Technical sufficiency
 - Conformance to applicable standards and design criteria
 - Conformance with related design calculations
 - Coordination with specifications and other design documents.
- c) Prepare independent check calculations to confirm the results of the original calculation.
- d) Mark any review comments regarding the original calculations and/or the independent verification on the cover sheet of the original calculations, initial and date the QC stamp.
- e) Provide the original and independent calculations to the Originator/Producer for Back Checking.

As part of an Independent Check, the Back Checker is required to perform the following:

- a) Respond to all comments made by the Checker, either agreeing to or resolving the comments.
- b) If corrections are necessary, correct the original calculation and provide to the Checker for additional review.
- c) Once all review comments are reconciled, or if no corrections are necessary initial and date the QC stamp.
- d) Forward to the Checker for verification.

4.3 Reports & Specifications

Similar to drawings and calculations, all reports and specifications will pass through a quality control process prior to submittal. This process will verify that the document's technical contents are accurate, that the spelling and grammar

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 13
-------------------------	----------------------------	----------------------	---	------------

contained in the document are correct, that the format and style of the document are in conformance with project standards, and that the appropriate disclaimers and assumptions are conspicuously defined.

4.3.1 Preparing Check Copies of Reports & Specifications

Once the Originator/Producer and PM have agreed that a report or specification is substantially complete and ready for checking, a Check Copy will be prepared, and the PM will assign it to the Checker. The first sheet of the Check Copy shall bear a red Quality Control Stamp as shown in Figure 2 with the Originator/Producer's initials and date in the "Ready for Checking" boxes. The Check Copy shall be designated as final or for a specific phase submittal. If not included on the first sheet, the Originator/Producer will write "prepared by" and sign his/her initials on the sheet.

4.3.2 Checking Reports & Specifications

The Checker's colors are YELLOW and RED

The Checker will ascertain that the report or specification is consistent with the supporting calculations, plans, and related project documents. The Checker's colors are RED and YELLOW. The Checker is required to perform the following:

- a) Ascertain that the report or specification contents are technically and grammatically correct; the Checker shall review the Check Copy in detail for:
 - Technical sufficiency
 - Conformance to applicable standards and design criteria
 - Correct grammar
 - Correct spelling
 - Appropriate disclaimers and assumptions
 - Conformance with supporting design calculations
- b) Coordination with other design documents
- c) For specifications, the Checker shall ascertain that the format of the specification is consistent with the format of the remaining project documents and project standards for specifications, including the following:
 - Proper titles, headers, footers, date formats, etc.
 - Correct article, section, and paragraph identification and sequence
 - Proper format and sequence of contents (i.e., materials, construction, submittals, payment, etc.)
- d) Each word does not need to be highlighted in YELLOW. One YELLOW slash shall be applied across or down the page to indicate the page was checked. The exception is all numerical values including referenced specification numbers, e.g., ASTM, shall be verified and fully marked in YELLOW if correct.
- e) Mark in RED on the Check Copy, any corrections, additions, and/or deletions, mark any questions directed to the Originator/Producer in RED.
- f) Resolve significant differences of opinion with the Originator. If an understanding or agreement cannot be reached, the Checker refers the issue to the Project Engineer, Discipline Chief Engineer, or Project Manager before continuing with the checking process.

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 14
-------------------------	----------------------------	----------------------	---	------------

- g) The Checker initials and dates the first sheet of the copy in the appropriate box of the Quality Control Stamp and forwards the document for back checking and correction unless no changes are required in which case the QC process is complete.
- h) If a check is limited to a particular discipline, or component of the report or specification, this shall be noted on the first sheet of the Check Copy.

4.3.3 Back Checking Reports & Specifications

The Back Checker's color is GREEN

After the Checker has completed review of the Check Copy, the Originator/Producer, acting as Back Checker, reviews the Checker's marks and supervises or personally makes the changes required. In addition, the Back Checker:

- a) Verifies that the complete report or specification has been checked in accordance with the above requirements (i.e., all contents of the report or specification are marked in either yellow or red), checkmarks in GREEN each of the Checker's red marked changes to signify agreement with the Checker that the changes marked are to be made, and adds in GREEN any additional changes not identified by the Checker.
- b) Resolves significant differences of opinion with the Checker, if an understanding or agreement cannot be reached, the Checker refers the issue to the Project Engineer, Discipline Chief Engineer, or Project Manager, for resolution.
- c) Crosses out in GREEN each of the Checker's red marked changes that the Back Checker and the Checker agree should not be changed. The Back Checker rewrites next to the crossed out red marks the original information that is to remain unchanged or indicates "stet". The Checker must mark all such green marks in YELLOW.
- d) The Back Checker supervises or personally corrects the original document. If the Back Checker is also the person correcting the document, the Back Checker should still apply the Green check or highlight to show agreement with the change. Documenting that a change was corrected does not eliminate the need for also documenting agreement with the change. This step should not be omitted.
- e) The Originator/Producer initials and dates the cover sheet in the appropriate box of the Quality Control Stamp and forwards the Check Copy (preferably a redlined print) and a new clean copy of the revised document to the Checker for verification.

4.3.4 Correcting Reports or Specifications

The Corrector's color is BLUE

- f) The Originator/Producer corrects the original document, or supervises correction of the document, to implement the reconciled changes. As corrections are made the changed item is highlighted in BLUE on the Check Print to document the action.
- g) The Originator/Producer initials and dates the cover sheet in the appropriate box of the Quality Control Stamp ("Corrected") and forwards the Check Copy and corrected original (or copy) to the Checker for verification.

4.3.5 Verification of Corrections to Reports & Specifications

The Verifier's color is ORANGE

The Verifier compares each of the Back Checker's marked changes on the Check Copy, with the revised part of the corrected report or specification. If the Verifier concurs that the changes have been properly implemented, the Verifier marks over the changes in ORANGE on the Check Copy. The Verifier will also make certain that no inadvertent changes, not noted on the Check Copy, have been made.

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 15
-------------------------	----------------------------	----------------------	---	------------

4.3.6 Checking Process for Additional Changes to Reports or Specifications

If additional changes or revisions become necessary, following review by the client or significant changes to content, for example, they are processed on a new Check Copy in the same manner as described previously. Although only the new changes need to be checked, the Originator/Producer and Checker are still responsible for assuring that correct interfacing with the affected changes is checked completely. The Originator/Producer and Checker must verify that any changes or revisions are coordinated throughout the project documents, including calculations, plans, and specifications.

4.3.7 Checking Reports or Specifications Electronically

Checking / Back Checking / Verifying reports or specifications electronically can be accomplished using the Track Changes feature within Microsoft Word (unique colors will be assigned by Word). Each reviewer should have their name set in the program options so that they are shown as the reviewer. The Originator shall also function as Back Checker and Corrector. Electronic checking using Track Changes shall follow this procedure:

- a) Checker uses Track Changes to make corrections and saves file as both a Word Doc and as a PDF file which becomes the QC check set
- b) The QC Stamp is applied to the PDF QC check set which contains the tracked changes as red markups. The QC stamp is initialed and dated by Originator as Ready for Checking and by the Checker as checked.
- c) Originator/Back Checker first agrees with the changes in the QC PDF check set and applies a green check or highlight mark to the QC PDF check set to show agreement
- d) Originator/Corrector accepts agreed upon changes with Track Changes in the original Word document and applies blue check or highlight mark to the QC PDF check set to confirm changes were made
- e) Checker compares revised Word document, in which tracked changes were accepted, to the QC PDF check set and applies orange check or highlight to the QC PDF check set to verify that all corrections were made
- f) QC PDF check set shall be locked to restrict editing and saved in the 400-Delivery\QC folder for that submittal
- g) One copy of the Final Word doc shall be saved to the 400-Delivery\Deliverables folder for that submission

4.4 Internal Technical Reviews

Internal Technical Reviews (ITR) are specific purpose reviews of work product performed by an individual that was not involved in the production of the work product. Unlike quality control reviews, ITRs are not a detailed check, but rather a general review of work product for applicability of criteria, assumptions, methodology, concept, compliance with project requirements, constructability, biddability or other specific objectives. ITRs are performed by staff with technical experience related to the specific purpose.

ITRs may be performed at any stage or phase of a project, from design criteria to final biddability. However, ITRs are not a substitute for the quality control review process. Instead, ITRs are intended to supplement the quality control process through additional review of project elements deemed by HQ (or in some cases contractual requirements) worthy of supplementary scrutiny.

4.4.1 Preparing Work Product for ITR

Once the Originator/Producer and PM have agreed that a work product is ready for ITR, a review copy will be prepared. The PM will prepare an ITR Form and submit the request to HQ. The ITR Form will designate the work product to be reviewed and the detailed scope of the ITR. Upon receiving notification from HQ that a reviewer has been assigned, the PM will attach the ITR form to the review copy and pass it to the Internal Technical Reviewer assigned by HQ.

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 16
-------------------------	----------------------------	----------------------	---	------------

4.4.2 Performing Internal Technical Reviews

The Internal Technical Reviewer's color is RED

The Internal Technical Reviewer is required to perform the following:

- a) Review the work product for the specific objective requested.
- b) Indicate on the ITR Form if review comments are noted on the ITR Form, marked on the work product, or a combination.
- c) Mark in RED any comments that are to be indicated on the work product; and/or type onto the ITR Form any comments.
- d) Sign and date the ITR Form and provide it to the PM and PE for review and distribution to the Back Checker.

4.4.3 Reconciliation of Internal Technical Review Comments

The Back Checker is required to perform the following:

- a) Respond to all comments made by the Internal Technical Reviewer on the ITR Form, either agreeing to or resolving the comments.
- b) If corrections are necessary, correct the work product and provide to the Internal Technical Reviewer for additional review.
- c) Once all review comments are reconciled, or if no corrections are necessary, the PM shall sign and date the ITR Form.
- d) Return the ITR Form to the Internal Technical Reviewer to sign and date acknowledging that all responses are accepted.

5.0 Checklists

Use of checklists is encouraged in the quality control process. Checklists, containing typical items expected to be included in designs, reports, drawings, specifications, or other documents, may be standard in-house checklists, checklists prepared by the client, checklists included in standard plans preparation manuals, or checklists developed specifically for a project.

Checklists which are used in the quality control process shall be completed and initialed by the Checker and attached to the Check Print or copy. The Checker is responsible for verifying that the checklist used is appropriate for the application.

6.0 Submittals

Document submittals, number, degree of development, and schedule, will be defined for each project either by the client or within the client's standards. In addition to these defined submittals, any work product transmitted to a non H&H entity shall be considered a submittal for purposes of QC and QA and documented with a QAR form. The following procedures for checking of various submittals will be implemented for ALL submittals irrespective of their quantity, degree of completion, and schedule.

6.1 Phase Submittals

Phase submittals are required to be checked, back checked, corrected, and verified prior to submittal. The level of detail of the process may be varied at the discretion of the PM for Witness Points provided that all critical information, either specifically required by the contract or considered fundamental to the development of the design, receives the

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 17
-------------------------	----------------------------	----------------------	---	------------

full check and back check detailed above for the classification of document and as appropriate for the level of development. Information presented in preliminary documents which is clearly under development, not completed, or subject to change must be reviewed by the Checker but need not be checked as required for final documents or at Hold Points, provided that the document is clearly marked as preliminary and subject to change. For example, in checking of concrete detail drawings to be submitted at the 60% level and required to define the general dimensions of the concrete, the concrete outlines and dimensions must be completely checked, but any rebar details need only be reviewed at this Witness Point.

6.2 Final Submittals

Final submittals are required to be completely checked, back checked, corrected, and verified in accordance with the appropriate procedure defined herein for the type of document. Final submittals are mandatory Hold Points.

6.3 Design Build Submittals

In general, specific requirements for design build submittals will be addressed in the contract and/or the Project Management Plan. Design Build submittals shall be subject the same quality control process as defined herein for design projects. All Issued For Construction (IFC) or Released For Construction (RFC) submittals are mandatory Hold Points and subject to Quality Assurance Review and Certification prior to submittal.

6.4 Miscellaneous Submittals

Any work product transmitted to a non-H&H entity shall be considered a submittal for purposes of QC and QA and documented with a QAR form. This includes but is not limited to work products categorized as progress sets, draft, preliminary or Over-the-Shoulder. The full QC process may not be required but every work product must be reviewed by someone other than the Originator/Producer prior to leaving H&H.

7.0 Post Design Submittal Reviews²

Post design submittals include documents prepared by or for the contractor and submitted to the Engineer for review. Typical documents included in the classification are shop drawings, working drawings, falsework drawings, falsework calculations, erection, etc.

In many cases the processing of submittals is defined in the contract or prescribed in the owner's standard procedures. In such cases those procedures will be followed. If procedures are not so prescribed, the procedures below shall be followed or used as a guide in implementing the owner's procedures.

All submittals from the contractor must be numbered and logged prior to review. The numbering and logging process will be established and coordinated by the PM or their designee. All logs shall be maintained throughout the Post Design Phase. Separate logs should be kept for RFIs, Shop Drawings and Submittals.

² Electronic review of submissions is encouraged and may be required by the Client. Electronic review shall conform to the appropriate document controls specified in the proceeding sections. All comments shall be made in RED, all checked details shall either be highlighted or boxed over with YELLOW (use transparency so that the details are not obscured). All comments shall be tabulated as required by the appropriate document controls.

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 18
-------------------------	----------------------------	----------------------	---	------------

Prior to return of the Contractor Submittal, the PM or PE should review the comments and disposition of the submission with the reviewer(s). Upon concurrence between reviewers and the PM or PE, the PM or PE shall return the submittal in accordance with the owner's standard procedures.

7.1 Shop drawings

All shop drawing submittals from the contractor, including drawings and catalog cut sheets, must bear the contractor's stamp of approval. This is necessary to assure that the contractor has noted his or her responsibility to coordinate the submittal with the project requirements and other submittals. Any submittals containing details of construction methods and/or procedures will not be processed as a shop drawing. Such submittals will be reviewed as noted in Article 7.2 below. Once the shop drawings are logged, one copy shall be designated as the "Office Copy" and forwarded to a designated Reviewer.

The Reviewer shall apply a shop drawing review stamp to each drawing, catalog cut, or table of contents of packaged submittals. The stamp will indicate that the Reviewer has "reviewed the contents of the submittal in accordance with appropriate industry standards for general conformance with the design concept of the project and general compliance with the information given in the contract documents." On the Office Copy, the Reviewer will mark in YELLOW information which is acceptable and in RED information which is not acceptable. Once the review is complete the Reviewer will determine a disposition and mark the appropriate box on the shop drawing review stamp. Dispositions will be selected from the following unless Client specific dispositions are required:

Approved	This signifies that the Reviewer has determined that the submittal meets the stated requirements as is and that revision and resubmission is not required
Approved as Noted	This signifies that the Reviewer has determined that the submittal meets the stated requirements if minor corrections are made as noted on the submittal in red and that revision and resubmission is not required
Revise and Resubmit	This signifies that the Reviewer has determined that the submittal is lacking on one or more areas and must be revised and resubmitted for further review
Not Approved	This signifies that the Reviewer has determined that the submittal is not in general conformance with the design concept and that a different concept must be prepared and submitted for review

The Reviewer's comments will be checked for conformance to design criteria and standards by the PM or their designee. Approved comments shall be transcribed in RED onto the copy to be returned to the contractor by the Reviewer or their designee. The Reviewer will verify the transcribing, mark the disposition, initial, and date the copy prior to return of the submittal to the contractor.

7.2 Review of Construction Methods and/or Procedures

Submittals containing details of construction methods and/or procedures will be reviewed as noted herein. Any submittals requiring design calculations performed by the Contractor's engineer shall be rejected if they do not contain the signature and seal of such registered professional engineer in the appropriate jurisdiction.

The Reviewer will review the construction methods and/or procedures submittal and note in RED any exceptions taken to the information provided. The Reviewer's comments will be checked for conformance to design criteria and standards by the PM or their designee. The Reviewer will apply a "Reviewed" stamp containing the following notation to each:

"This submittal contains information regarding construction methods and/or procedures which are solely the responsibility of the Contractor. Review is only for the general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor retains

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 19
-------------------------	----------------------------	----------------------	---	------------

sole responsibility for dimensions which shall be confirmed and corrected at the job site; fabrication means, methods, techniques, processes, procedures, and sequences of construction; coordination of his work with that of all other trades; and the satisfactory performance of his work.

If the exceptions taken require extensive description, a letter containing the comments shall be prepared by the Reviewer, and the submittal shall be marked with a note to see the transmittal letter for additional comments.

8.0 Owner's Engineer or Peer Review Role

Hardesty & Hanover is not responsible for Quality Control of work produced by others. Review of design documents prepared by a firm other than Hardesty & Hanover, when acting in the role of Owner's Engineer or providing Peer Review, shall be in accordance with the contract requirements.

Check Prints shall be initialed and dated by the reviewer. The reviewer shall verify incorporation of all prior comments for each submittal. For digital files, each reviewer shall save an independent copy of the file in the project working directory with their initials and the date in the file name. All comments shall be recorded on a Comment Response Form which shall be submitted to the PM or PE for quality assurance review prior to submittal. The PM or PE must review all comments to confirm technical appropriateness and adherence to standards prior to submittal. Copies of comments and responses should be saved in the project files. Reviews done within a Bluebeam session shall have comments and responses exported to an Excel form. Calculations performed as part of the review shall be checked in accordance with the standard H&H QC plan and a QC check copy shall be saved in the project files.

All Peer Review submittals shall be documented with a Quality Assurance Review (QAR) Form.

Owner's Engineer submittals shall be documented with QAR forms at a schedule or frequency agreed upon by the Project Manager and Quality Manager for the specific project.

Prepared By C. Leahy	Approved By K. Griesing	Quality Control Plan	REV. 3 – Updated 05/27/2021 REV. 4 – Updated 02/28/2022 REV. 5 – Updated 12/29/2022	Page 20
-------------------------	----------------------------	----------------------	---	------------



Hardesty & Hanover, LLC

QA/QC Forms & Checklists



QUALITY ASSURANCE REVIEW & CERTIFICATION FORM

Form QAR

Project Name		Project Manager	
Project Location		Client Name	
H&H Project Number		Client Project Number	
1 - DOCUMENT INFORMATION	(TO BE FILLED OUT BY THE PROJECT MANAGER)		
	Level of Development (Check all that apply) ☐ Concept ☐ Preliminary ☐ Phase: _____ ☐ Final ☐ Release For Construction ☐ Other: _____		
2 - SUMMARY OF FINDINGS	Documentation reviewed (attach complete list of all items / files reviewed): ☐ Design Criteria ☐ Design Plans ☐ Calculations / Computer Solutions ☐ Reports ☐ Specifications ☐ Interdisciplinary Coordination Documentation ☐ Prior Audit Documentation ☐ External Comment Responses ☐ Other, Specify: _____		
	I have reviewed the above documentation for conformance with Hardesty & Hanover Quality Control Standards. My Conclusions are as follows (if more space required attach additional sheet, indicate format and location of any additional comments):		
3-RECOMMENDED ACTIONS	In consideration of the findings above I recommend the following actions be taken for the continued conformance of future work with the Hardesty & Hanover Standards (if more space required attach additional sheet, indicate format and location of any additional comments):		
	Developed by: _____ Project Quality Assurance Lead Date		
4 APPROVED FOR SUBMISSION	<i>The recommended actions as noted above are in conformance with Hardesty & Hanover Standards and have been completed. The undersigned, as Project Manager, certifies that the noted submittal for the referenced project meets the requirements of the project Quality Management Plan, is complete for the level of development, meets the requirements of Hardesty & Hanover and is ready for submittal</i> _____ _____ Project Manager Date		
Prepared By J. Bade C. Leahy	Approved By K. Griesing	REV.0 - Original Issue Date: 2/7/2017 REV. 1 – Updated: 03/31/2020 REV.2 – Updated: 05/29/2020	
		Page 1 of 1	



INTERNAL QA AUDIT

QA AUDIT CHECKLIST (Design Phase)

Project Name & H&H Job #: Click or tap here to enter text.		Auditor: Click or tap here to enter text.			
Phase/Submission Details: Click or tap here to enter text.		Date(s) of Audit: Click or tap here to enter text.			
Project Manager (PM):Click or tap here to enter text.		Project Quality Assurance Lead (PQAL): Click or tap here to enter text.			
Item Number	Item Audited	Notes	Conforms (check box)		
			Yes	No	N/A
1.0	Project has an approved Quality Management Plan				N/A
1.1	QMP is filed in Projects\200-PM\QA or Work Plan folder.	Click or tap here to enter text.	☐	☐	☐
1.2	QMP has additional project QA or QC requirements.	Click or tap here to enter text.	☐	☐	☐
1.3	Subconsultants Quality Management Plans were reviewed.	Click or tap here to enter text.	☐	☐	☐
1.4	The Quality Management tab in Vision is complete and accurate.	Click or tap here to enter text.	☐	☐	☐
2.0	If submission included plans:	Choose one plan sheet for audit.			
2.1	There is a QC check print with correct markups (yellow, red, green, blue, orange) for all plan sheets. Note missing steps.	Click or tap here to enter text.	☐	☐	☐
2.2	Plan sheets are stamped with the H&H QC Stamp or project specific stamp. Note if stamp applies to multiple sheets.	Click or tap here to enter text.	☐	☐	☐
2.3	QC stamp is initialed and dated for all required roles: ready for checking, checked, back checked, corrected, verified.	Click or tap here to enter text.	☐	☐	☐
3.0	If submission included calculations:	Choose one calculation packed for audit.			
3.1	There is a QC check copy with markups for all calculation sheets. Note missing steps.	Click or tap here to enter text.	☐	☐	☐
3.2	There is a calculation cover sheet with QC Stamp and note to what items are covered with the stamp.	Click or tap here to enter text.	☐	☐	☐
3.3	QC stamp is initialed and dated for all required roles: ready for checking, checked, back checked, corrected, verified.	Click or tap here to enter text.	☐	☐	☒



INTERNAL QA AUDIT

3.4	Each calculation sheet header has <i>Made By</i> and <i>Checked By</i> initialed & dated.	Click or tap here to enter text.	☐	☐	☐
3.5	Input and Output files for software have been checked and software program has been verified for use.	Click or tap here to enter text.	☐	☐	☐
4.0	If submission included reports:	Choose one report for audit			
4.1	There is a QC check copy with markups (yellow, red, green, blue, orange) for all reports. Note any missing steps.	Click or tap here to enter text.	☐	☐	☐
4.2	The report cover sheet has a QC Stamp.	Click or tap here to enter text.	☐	☐	☐
4.3	QC stamp is initialed and dated for all required roles: ready for checking, checked, back checked, corrected, verified.	Click or tap here to enter text.	☐	☐	☐
5.0	If submission included specifications:	Choose one specification item for audit			
5.1	There is a QC check copy with markups (yellow, red, green, blue, orange) for all specifications. Note any missing steps.	Click or tap here to enter text.	☐	☐	☐
5.2	The specification cover sheet has a QC Stamp.	Click or tap here to enter text.	☐	☐	☐
5.3	QC stamp is initialed and dated for all required roles: ready for checking, checked, back checked, corrected, verified.	Click or tap here to enter text.	☐	☐	☐
6.0	If submission included a cost estimate:				
6.1	There is a QC check copy with markups (yellow, red, green, blue, orange) for all cost estimate sheets. Note missing steps.	Click or tap here to enter text.	☐	☐	☐
6.2	The cost estimate cover sheet has a QC Stamp.	Click or tap here to enter text.	☐	☐	☐
6.3	QC stamp is initialed and dated for all required roles: ready for checking, checked, back checked, corrected, verified.	Click or tap here to enter text.	☐	☐	☐
7.0	If submission included quantities:	Choose one random quantity calculation for audit			
7.1	There is a QC check copy with markups (yellow, red, green, blue, orange) for all quantity calculation sheets. Note missing steps.	Click or tap here to enter text.	☐	☐	☐
7.2	The quantity cover sheet has a QC Stamp.	Click or tap here to enter text.	☐	☐	☐
7.3	QC stamp is initialed and dated for all required roles: ready for checking, checked, back checked, corrected, verified.	Click or tap here to enter text.	☐	☐	☐
8.0	If an internal technical review (ITR) was performed:				



INTERNAL QA AUDIT

8.1	Review comments were documented in Section 3 of the ITR form, in the Comment Response Form (CRF) or other.	Click or tap here to enter text.			
8.2	Responses to ITR comments are marked directly on the review document or on the CRF. Note any other procedure.	Click or tap here to enter text.			
8.3	All ITR comments were addressed and self-checked by the originator. PM has verified and signed Section 4 of ITR form.	Click or tap here to enter text.			
8.4	Any revised models, calculations, drawings, reports, etc. have been re-reviewed and accepted by ITR reviewer.	Click or tap here to enter text.			
8.5	ITR reviewer has approved changes and signed Section 5 of ITR form.	Click or tap here to enter text.			
9.0	There is a completed QAR form for this submission:				
9.1	The QAR form is filed in project 200-PM\QA folder.	Click or tap here to enter text.			
10.0	Any additional information or comments.				
Comments					
Click or tap here to enter text.					



INTERNAL QA AUDIT

QA AUDIT CHECKLIST (Construction Phase)

Project Name & H&H Job #: Click or tap here to enter text.		Auditor: Click or tap here to enter text.	
Phase/Submission Details: Click or tap here to enter text.		Date(s) of Audit: Click or tap here to enter text.	
Project Manager (PM): Click or tap here to enter text.		Project Quality Assurance Lead (PQAL): Click or tap here to enter text.	
Item Number	Item Audited	Notes	Conforms (check box)
			Yes No N/A
1.0	Project has a Completed Quality Management Plan:		N/A
1.1	QMP is filed in Projects\200-PM\QA or Work Plan folder.	Click or tap here to enter text.	☐
1.2	QMP has additional project QA or QC requirements.	Click or tap here to enter text.	☐
1.3	Subconsultants Quality Management Plans were reviewed.	Click or tap here to enter text.	☐
1.4	The Quality Management tab in Vision is complete and accurate.	Click or tap here to enter text.	☐
2.0	General:		
2.1	The post design documents are in Projects\600-Post Design Services. If not, specify where located.	Click or tap here to enter text.	☐
2.2	Tracking logs of RFI, Submittals and Shop Drawings have been created and are being maintained.	Click or tap here to enter text.	☐
2.3	The conformed Contract Documents (standards, specifications, plans, etc) are available for checking the submittals against.	Click or tap here to enter text.	☐
3.0	If shop drawings are reviewed:	Choose one random submittal for audit	
3.1	The "office copy" submittal is identified with unique project number/code and has "Received On" date.	Click or tap here to enter text.	☐
3.2	Shop Drawing utilize H&H or project shop drawing review stamp as indicated in Section 7.1 of the QC Plan.	Click or tap here to enter text.	☐
3.3	Reviewer marked in yellow information which are acceptable and in red information which are not acceptable. Review comments are discussed with qualified staff before returning.	Click or tap here to enter text.	☐



INTERNAL QA AUDIT

3.4	Stamp is completed and appropriately marked: Approved, Approved as Noted, Revise & Resubmit or Not Approved.	Click or tap here to enter text.	☐	☐	☐
4.0	If construction methods and/or procedures are reviewed:	Choose one random procedure for audit			
4.1	Submittal is signed & sealed by a Professional Engineer in the project jurisdiction.	Click or tap here to enter text.	☐	☐	☐
4.2	Submittal was review for general conformance with project requirements and reasonableness for use.	Click or tap here to enter text.	☐	☐	☐
4.3	Any review comments/exceptions have been marked in red on the submission.	Click or tap here to enter text.	☐	☐	☐
4.4	"Reviewed" stamp and general review note as specified in H&H QC Plan Section 7.2 has been applied.	Click or tap here to enter text.	☐	☐	☐
5.0	If construction support services require revised design plans:	Choose one random Plan sheet for audit			
5.1	There is a QC check print with markups for all plan sheets, specifications, etc. that were updated.	Click or tap here to enter text.	☐	☐	☐
5.2	Documents are prepared and issued in accordance with Client or project standards for changes during construction.	Click or tap here to enter text.	☐	☐	☐
5.3	QC stamp is initialed and dated for all roles: ready for checking, checked, back checked, corrected, verified.	Click or tap here to enter text.	☐	☐	☐
6.0	If plan revisions required revised calculations or quantities:	Choose one random calculation packet for audit			
6.1	There is a QC check print with markups for all calculations, quantities, cost estimate, etc. that were updated.	Click or tap here to enter text.	☐	☐	☐
6.2	Documents are prepared and issued in accordance with Client or project standards for changes during construction.	Click or tap here to enter text.	☐	☐	☐
6.3	QC stamp is initialed and dated for all roles: ready for checking, checked, back checked, corrected, verified	Click or tap here to enter text.	☐	☐	☐
6.4	Each calculation sheet is initialed & dated by Originator/Producer and initialed & dated by Checker.	Click or tap here to enter text.	☐	☐	☐
6.5	There is a QAR form for all Design Revision Submittals.	Click or tap here to enter text.	☐	☐	☐
7.0	Any additional information or comments				
	Click or tap here to enter text.				

INTERNAL TECHNICAL REVIEW FORM

Page 235 of 262

Form ITR

Project Name			Project Manager		
H&H Project Number			Client Name		
1 - DOCUMENT INFORMATION	(TO BE FILLED OUT BY THE PROJECT MANAGER)				
	Level of Development (Check all that apply) ☐ Concept ☐ Preliminary ☐ Phase: _____ ☐ Other: _____ ☐ Final ☐ Release For Construction		Discipline Reviewed (Check all that apply) ☐ Overall / Policy ☐ Structural ☐ Geotechnical ☐ Mechanical ☐ Electrical ☐ Highway/Civil ☐ Constructability ☐ Other, Specify: _____		
	Document type reviewed: ☐ Design Plans ☐ Calculations ☐ Report ☐ Specification ☐ Other, Specify: _____				
	Prepared by: _____ Document Date / Version: _____				
QC STAMP	☐ Document contains Incomplete QC stamp, specify completed steps: _____ ☐ Document contains Completed QC stamp				
2 - DETAILED ITR SCOPE					
	Submitted by: _____ Project ManagerDate				
3 - REVIEWER COMMENTS	(TO BE FILLED OUT BY THE INDEPENDENT REVIEWER) I have reviewed the above referenced document in accordance with Hardesty & Hanover and Industry Standards. My Conclusions are as follows (if more space required attach additional sheet, indicate format and location of any comments): 				
	Reviewed by: _____ Internal ReviewerDate				
4 - VERIFIED	All Reviewer comments have been addressed, either satisfactorily resolved or incorporated into the document. This document is complete. Submitted by: _____ Project ManagerDate				
5 - APPROVAL	This review is complete. Submitted by: _____ Internal ReviewerDate				



Hardesty & Hanover
 [Project]
 [Type of Review]
Comment / Response Form (CRF)

DOCUMENT NAME:										
REVIEWER:				RECEIVED DATE:						
REVIEW DATE:				REVIEW STATUS:						
RESPONSE CODES: A - Team Member agrees and will take action; D - Team Member does not agree and will pursue resolution, comment has not been resolved; F - Follow up required										
No	Page	Section	Comment	Comment By	Response	Response By	Response Code	Comment	Comment By	Change Incorporated
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										

Distribution:



SUBCONSULTANT QUALITY CERTIFICATION FORM

Project Name:	
Project / Contract Number:	
Subconsultant Firm:	
Description of Submission & Stage:	
Subconsultant's Submission Scope:	

H&H requests all Subconsultants to certify that they have performed and completed the quality assurance and quality control tasks necessary to certify that the submission is complete, to the indicated level of development, and meets the requirements of the project's Quality Management Plan and Contract documents.

Documentation of quality checking is provided to H&H: Yes ☐ No ☐ N/A ☐

Signature: _____

Subconsultant's Project Manager (typed) Date

I have reviewed the subconsultant's submission and certify that the submission is complete to the indicated level of development and meets the requirements of the project's Quality Management Plan and Contract documents.

Signature: _____

H&H Project Manager (typed) Date

Prepared By J. Fitzhenry	Approved By R. Jarrett	Subconsultant Quality Certification Form	Rev.0 - Original Issue: 22 May 2024	Page 1
-----------------------------	---------------------------	---	-------------------------------------	--------



Subconsultant Quality Assurance Checklist Design Projects

Project Name:

Sub-consultant Name:

Project Status/Phase:

Date:

YES	NO*	N/A*	* = ATTACH EXPLANATION
☐	☐	☐	1. Design calculations have been checked and back checked
☐	☐	☐	2. Geometry calculations have been checked and back checked
☐	☐	☐	3. Computer program input has been checked and results have been determined to be reasonable
☐	☐	☐	4. Quantity estimates have been checked
☐	☐	☐	5. Engineer's estimate has been checked
☐	☐	☐	6. Pay items have been reviewed to ensure that all work is included
☐	☐	☐	7. Specifications have been reviewed
☐	☐	☐	8. Designers have checked plan sheets
☐	☐	☐	9. Plan details and specifications have been checked for conformance with client standard details and specifications
☐	☐	☐	10. Plan details and specifications have been coordinated with design calculations
☐	☐	☐	11. Drawing layout, preparation, and CADD standards meet current client specifications
☐	☐	☐	12. Designers have checked interdisciplinary interfaces
☐	☐	☐	13. Discipline Leaders, Project Engineer, and Project Manager have verified design coordination
☐	☐	☐	14. Utility coordination is complete and details comply with standards
☐	☐	☐	15. Constructability review has been made
☐	☐	☐	16. Design has been coordinated with adjacent construction or abutting facilities
☐	☐	☐	17. Technical Policy review has been made
☐	☐	☐	18. Permit and Agency Sign offs have been obtained (as applicable)
☐	☐	☐	19. Client's comments have been addressed
☐	☐	☐	20. Client and H&H QA/QC requirements have been satisfied

Project Manager

Signature

Date

Project Quality Lead/QA Reviewer

Signature

Date

Louisiana Department of Transportation and Development
Bridge Design Section Pre-Approved Software List
Updated: February 21, 2024

Developer	Website	Software Name	Production Version
AASHTO, Inc.	https://www.aashtoware.org/	AASHTOWare Bridge Design	7.4.1
AASHTO, Inc.	https://www.aashtoware.org/	AASHTOWare Bridge Rating	7.4.1
AASHTO, Inc.	https://www.aashtoware.org/	AASHTOWare PS Design Tool	7.4.1
AASHTO, Inc.	https://www.aashtoware.org/	AASHTOWare Steel Design Tool	7.4.1
Acuity Brands Lighting, Inc.	https://www.visual-3d.com/	Visual	2020 R2
AutoDesk	https://www.autodesk.com/	AutoCAD LT	AutoCAD LT 2024
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	LEAP Bridge Concrete	22.0.4.24
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	LEAP Bridge Steel	22.0.4.24
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	Microstation Connect Edition	10.16.00.080
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	Microstation v8i	08.11.09.883
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	Open Roads Designer	10.10.13
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	OpenBridge Designer	10.10.1.73
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	OpenBridge Modeler	10.12.183
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	RM Bridge	11.16.031
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	STAAD	22.12.00.142
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	STAAD Beava	22.12.00.142
Bentley Systems, Inc.	https://softwaredownloads.bentley.com/en/	STAAD Section Wizard	22.12.00.142
Bridge Software Institute	http://bsi-web.ce.ufl.edu	FB-Pier	v5.8.31
Computers and Structures, Inc.	https://www.csiamerica.com/	CSiBridge	CSiBridge 2016 v1820
Computers and Structures, Inc.	https://www.csiamerica.com/	CSiCOL	CSiCOL 9 v901
Computers and Structures, Inc.	https://www.csiamerica.com/	SAP 2000	SAP 2000 v1820
CSI, Ltd.	https://www.csi-europe.com/	DDM	DDM 2023
Elite Software	https://www.elitesoft.com/	CHVAC 8	CHVAC 8
Ensoft, Inc.	https://www.ensoftinc.com/	L-Pile	2022-09
Finite Element Analysis, Ltd.	https://www.lusas.com/	LUSAS	LUSAS 19.1-3
Informer Technologies, Inc.	https://powergear.software.informer.com/	Power Gear	4.0.64
LARSA, Inc.	https://www.larsa4d.com/	LARSA 4D Bridge Plus	LARSA 4D_8.00.9016
Lighting Analysts, Inc.	https://www.lightinganalysts.com/catalog/login.php	AGi32	AGI32-20.11.0.12
MIDASoft		Midas Civil	Civil 2023(v1.1)
Operating Technology, Inc.	https://www.etap.com/	ETAP	ETAP 2023 (22.5.0)
PTC, Inc.	https://www.ptc.com/en/support	MathCAD Prime	Prime 9.0
Smart Bridge Technology	http://www.smartbridgetech.com/	Smart Bridge Suites	4.0
SolidWorks Corporation	https://www.solidworks.com/	SOLIDWORKS	2023 SP02.1
Structure Point, LLC	https://structurepoint.org/	spColumn	spColumn 10.00
University of Maryland	https://best.umd.edu/sabre/	Sabre	6.2

Note:

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



Design Criteria Checklist

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

— **Cover sheet**

The following information must be included on the cover sheet:

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

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

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

— **Design Assumptions and Design Exceptions**

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

— **General Information**

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

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

— **Hydraulic Design Criteria**

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

— **Design Factors**

The ductility factor Γ_D , redundancy factor Γ_R , and operational importance factor Γ_I shall be listed in this section.



Design Loads

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

Limit States

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

Bridge Barrier

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

Guardrail

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

Approach Slab

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

Deck and Deck Drainage

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

Bearing

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

Joint

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

Superstructure

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

Substructure

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



Appendix C Design Criteria Checklist

Piles and Drilled Shafts

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

Geotechnical Design

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

Mechanical Design

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

Electrical/Lighting Design

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

As-Designed Bridge Rating Criteria

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

Software

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



Final Calculation Book Checklist

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

— **Cover Sheet**

The following information must be included on the cover sheet:

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

— **Final Calculation Book Check List**

— **QC/QA Certifications**

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

— **Design Criteria**

— **Final Hydraulic Analysis Report from Hydraulic Engineer**

— **Final Geotechnical Analysis Report from Geotechnical Engineer**

— **Superstructure Design Calculations**

— **Substructure Design Calculations**

— **Quantity Calculations**

— **Special Provisions/NS-Items**

— **Construction Cost Estimate**

— **As-Designed Rating Report**

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

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

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

— **All Electronic Design Files**

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

The final calculation book for in-house projects shall include the same files listed above for consultant projects. The final calculation book and other final design documents for all projects including in-house and consultant projects shall be uploaded to the archiving location designated in the record retention policy within 30 calendar days after the stamped final plans are delivered.



**Appendix C
QA Information
Package Checklist**

QA Information Package Checklist

Project No.:

Project Description:

- _____ Calculation Book
- _____ Plans
- _____ Special Provisions
- _____ Cost Estimate
- _____ Other Documents _____

**Appendix C
QC/QA Certification**

Project No.:

Project Name:

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

Team Members	Name	PE Registration No.	Responsible Plan Sheets	Responsible Special Provisions	Construction Cost Estimate	Signature
Designers						
Design Checkers						
Detailers						
Detail Checkers						
Reviewers						
Peer Reviewer						
Geotechnical Engineer						
Hydraulic Engineer						
EOR						



**Appendix C
Peer Review
Resolution Agreement**

Peer Review Resolution Agreement

Project No.:

Project Name:

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

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

**Appendix C
QC/QC Certification****Consultant Submittal QC/QA Certification**

Project No.:

Project Name:

I, the undersigned Supervisor or Team Leader for this project, certify that the information included in this submittal has been prepared in accordance with the QC/QA plan documents and LADOTD Bridge Design Section policy on QC/QA and the information presented is accurate and meets the requirements of this submittal. All CAD drawings meet LADOTD CAD standards.

Submittal Description

Supervisor or Team Leader Name

Signature

Date

Appendix D

LADOTD QA/QC Forms & Checklists

LADOTD
BDEM Chapter 3, Part I, Appendix D
QC/QA Certification

Project No.:

Project Name:

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

Team Members	Name	PE Registration No.	Responsible Plan Sheets	Responsible Special Provisions	Construction Cost Estimate	Signature
Designers						
Design Checkers						
Detailers						
Detail Checkers						
Reviewers						
Peer Reviewer						
Geotechnical Engineer						
Hydraulic Engineer						
EOR						

LADOTD**BDEM Chapter 3, Part I, Appendix I****Consultant Submittal QC/QA Certification**

Project No.:

Project Name:

I, the undersigned Supervisor or Team Leader for this project, certify that the information included in this submittal has been prepared in accordance with the QC/QA plan documents and LADOTD Bridge Design Section policy on QC/QA and the information presented is accurate and meets the requirements of this submittal. All CAD drawings meet LADOTD CAD standards.

Submittal Description

Supervisor or Team Leader Name

Signature

Date

LADOTD**BDEM Chapter 3, Part I, Appendix A****Design Criteria Checklist**

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

— *Cover sheet*

The following information must be included on the cover sheet:

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

— *Governing Design and Construction Specifications and Other References*

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

— *Design Assumptions and Design Exceptions*

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

— *General Information*

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

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

— *Hydraulic Design Criteria*

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

— *Design Factors*

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

— *Design Loads*

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

— *Limit States*

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

— *Bridge Barrier*

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

— *Guardrail*

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

— *Approach Slab*

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

— *Deck and Deck Drainage*

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

— *Bearing*

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

— *Joint*

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

— *Superstructure*

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

— *Substructure*

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

— *Piles and Drilled Shafts*

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

— *Geotechnical Design*

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

— *Mechanical Design*

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

— *Electrical/Lighting Design*

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

— *As-Designed Bridge Rating Criteria*

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

— *Software*

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

LADOTD
BDEM Chapter 3, Part I, Appendix B
Final Calculation Book Checklist

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

___ *Cover Sheet*

The following information must be included on the cover sheet:

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

___ *Final Calculation Book Check List*

___ *QC/QA Certifications*

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

___ *Design Criteria*

___ *Final Hydraulic Analysis Report from Hydraulic Engineer*

___ *Final Geotechnical Analysis Report from Geotechnical Engineer*

___ *Superstructure Design Calculations*

___ *Substructure Design Calculations*

___ *Quantity Calculations*

___ *Special Provisions/NS-Items*

___ *Construction Cost Estimate*

___ *As-Designed Rating Report*

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

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

___ *A PDF File of the Calculation Book*

___ *All Electronic Design Files*

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

The final calculation book for in-house projects shall include the same files listed above for consultant projects. The final calculation book and other final design documents for all projects including in-house and consultant projects shall be uploaded to the archiving location designated in the record retention policy within 30 calendar days after the stamped final plans are delivered.

LADOTD**BDEM Chapter 3, Part I, Appendix C****QA Information Package Checklist**

Project No.:

Project Description:

☐	<i>Calculation Book</i>
☐	<i>Plans</i>
☐	<i>Special Provisions</i>
☐	<i>Cost Estimate</i>
☐	<i>Other Documents</i> _____

Consultant Quality Management Plan

LADOTD

BDEM Chapter 3, Part I, Appendix K CONSULTANT SUBMITTAL REVIEW CHECKLIST

Items	Submittals												
	Design Criteria	TS&L	30'7r PP	60'7r PP	90'7c PP	100'7c PP	30'7r FP	60'7c FP	90'7c FP	100'7c FP	Final Calculation Book	Plan Revisions	Change Orders
Consultant Submittal QC/QA Certification			R	R	R	R	R	R	R	R	R	R	R
Design Criteria	C												
TS&L		C											
Bridge Index			D	D	D	D	D	D	C	S			
General Notes			D	D	D	D	D	D	C	S			
Summary of Estimated Quantities			D	D	C	C	D	D	C	S			
General Plans			D	D	C	C	C	C	C	S			
Typical Sections			D	D	C	C							
Superelevation Diagram				D	D	C	C	C	C	S			
Construction Phasing Details				D	D	C	C	C	C	S			
Traffic Controls Details				D	D	C	C	C	C	S			
Foundation/Pile Layout				D	D	C	C	C	C	S			
Pile Loads/Details					D	D	D	C	C	S			
Pile Data Tables							D	D	C	S			
Bent Details							D	D	C	S			
Fender Details							D	D	C	S			
Girder Details							D	D	C	S			
Span Details							D	D	C	S			
Joint Details								D	C	S			
Bearing Details								D	C	S			
Approach Slab								D	C	S			
Guardrail Details								D	C	S			

Consultant Quality Management Plan

Bridge Barrier/Mailing Details								D	C	S			
Bridge Drainage Details								D	C	S			
Detour Bridge Details								D	C	S			
Revetment Details								D	C	S			
Signing/Lighting Details								D	C	S			
Year Plate								D	C	S			
Rebar Support								D	C	S			
Misc. Details								D	C	S			
Project Specific Standard Plans and Special Details								D	C	S			
Electrical/Lighting Details								D	C	S			
Mechanical Details								D	C	S			
As-Built Plans								D	C	C			
Special Provisions/NS-Items							D	D	C	C			
Cost Estimate					D	D	D	D	C	C			
Final Calculations											S		
Revised Plans/Calculations												S	S

Legends:

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

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

“D” = The item shall be in development and shall be included in the submittal. “S” = The item is stamped by the EOR and shall be included in the submittal.

21. QA/QC Plan:

The Hardesty & Hanover, LLC QA/QC Plan is included as an Appendix following Section 23.

22. Sub-consultant information:

Firm Name (Name must match <u>exactly</u> as registered with Louisiana's Secretary of State (SOS): <u>including punctuation, include screenshot(s) from SOS at the end of Section 20</u>)	Address	Point of Contact and email address	Phone Number
APS Engineering and Testing, LLC	5261 Highland Road, PMB 320 Baton Rouge, LA 70808	Sergio Aviles, P.E. sergio@aps-testing.com	225-281-1917
Bridge Diagnostics, Inc.	4300 S I-10 Service Rd W Suite 210, Metairie, LA 70001	Steven Fall, PE stevenf@bditest.com	504-874-1042
Chustz Surveying, L.L.C.	211 Richey St, New Roads, LA, 70760	James H. Chustz, Jr. PLS jchustz@chustz.com	225-718-7103
KTA-TATOR, INC.	145 Enterprise Drive, Pittsburgh, PA 15275	Robert S. Lanterman rlanterman@kta.com	412-303-9407
Moffatt & Nichol Inc.	301 Main Street, Suite 800 Baton Rouge, LA 70801	Chace Hulon, P.E. chulon@moffattnichol.com	225-610-1932
Providence Engineering and Environmental Group LLC	1201 Main Street, Baton Rouge, LA 70802	Chad Turner chadturner@providenceeng.com	225-766-7400
Urban Systems Associates, Inc.	2000 Tulane Ave. Suite 200 New Orleans, LA 70112	Alison Catarella Michel acmichel@urbansystems.com	504-569-3958

23. Location:

Not Applicable



3850 N. Causeway Blvd, Suite 1625
Metairie, LA 70002
T: 504.962.9212
la@hardestyhanover.com