



Statement of Qualifications | Contract No 4400034051 US 71: ICG Railroad Overpass Rehab (HBI) US 71: Market St Bridge over ICG RR (HBI)

SUBMITTED BY:

Hardesty & Hanover, LLC

3850 N. Causeway Blvd, Suite 1625

Metairie, LA 70002

T: 504.962.9212

SUB-CONSULTANTS:

Neel-Schaffer, Inc.

Terracon Consultants, Inc.

SJB Group, LLC

March 2026



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Louisiana Department of Transportation and Development
Consultant Contracts Services

March 18, 2025

Re: Contract No. 4400034051; US 71: ICG Railroad Overpass Rehab (HBI); US 71: Market St Bridge over ICG RR (HBI)

Dear Selection Committee Members:

Hardesty & Hanover (H&H) is submitting our qualifications to DOTD to provide engineering design services on the US 71: ICG Railroad Overpass Rehab (HBI) and US 71: Market St Bridge over ICG RR (HBI) project. We are proud of our long history working in Louisiana, dating back to 1896 with the historic Waddell A-Truss Bridge over Cross Bayou in Shreveport. As a leader in engineering, our firm brings a legacy of providing engineering excellence for 139 years. H&H has the full capability, availability, and similar experience to perform all contract services required. We have identified a large pool of qualified bridge, railroad, roadway, geotechnical, and drainage engineers that will meet the project schedule and achieve the project goals.

Proven Leadership with Extensive Experience: Our leadership team is well known to DOTD, with a long history of delivering successful projects for DOTD. Our **Project Manager, Bobby Naghavi, PE**, brings over 40 years of experience working on complex bridge projects, 25 years of which were spent at DOTD. Our **Project Engineer Erik Diaz, PE** has 18 years of experience providing structural engineering design for various bridge types including rail bridges, load rating analysis, and construction management services. Together, the extensive experience of our leadership team ensures that our project team will deliver a successful outcome on schedule, in full compliance with DOTD guidelines, drawing on their understanding gained through years of delivering and managing DOTD projects.

Rail Agency Coordination Experience: Our leadership team is aware that one of the most critical aspects of this project will be coordination with KCS (ICG) Railroad, given that the bridges traverse the active tracks with the potential for future expansion. **H&H has designed over 40 new bridges over active railroads in the past 10 years.** This experience is critical for the US 71 project given its proximity and crossing over KCS (ICG) Railroad. All concepts studied will consider the presence and operations of the railroad. Given this significant importance, we have designated Howard Swanson, PE to serve as our team's railroad coordinator. **As former Assistant Chief Engineer for a major rail system, Howard spent over 30 years managing and leading designs and ensuring that Standard Procedures for Bridge Management complied with Federal Railway Administration requirements.**

Subconsultants: The H&H Team includes subconsultants with extensive experience in their specialty areas. Neel-Schaffer, Inc. will provide traffic engineering services. Terracon Consultants, Inc. will provide geotechnical engineering services and, if necessary, environmental assessment in support of H&H staff. SJB Group, LLC will provide surveying services. We have successfully delivered DOTD projects with each of these subconsultant firms.

DOTD Experience: Our team brings comprehensive experience using DOTD standards and specifications with several team members working at DOTD and/or working on prior DOTD projects. **I, Bobby Naghavi, PE, PH, PhD, will serve as PM, bringing over 25 years working for Louisiana DOTD.** Our thorough familiarity with DOTD procedures and design standards enables us to work accurately and efficiently. Together, we bring proven bridge, rail, and roadway engineering services; successful delivery of similar projects on time and on budget; resources that exceed the MPR requirements; and a roster of qualified professionals in all disciplines with availability to begin work immediately. H&H appreciates the opportunity to work with DOTD on this project. Please do not hesitate to contact us if additional information on our extensive qualifications is needed.

Sincerely,

A handwritten signature in black ink that reads "Bobby Naghavi".

Babak "Bobby" Naghavi, PE, PH, PhD, Project Manager and Point of Contact, 504.605.7940, bnaghavi@hardestyhanover.com

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	US 71: ICG Railroad Overpass Rehab (HBI) US 71: Market St Bridge Over ICG RR (HBI) Route: US 71 Caddo Parish
2. Contract Number(s) as shown in the advertisement	4400034051
3. State Project Number(s), if shown in the advertisement	H.012008.5 and H.012009.5
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)	E.F. 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

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

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



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

March 18, 2026

Date:

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.

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)' %:

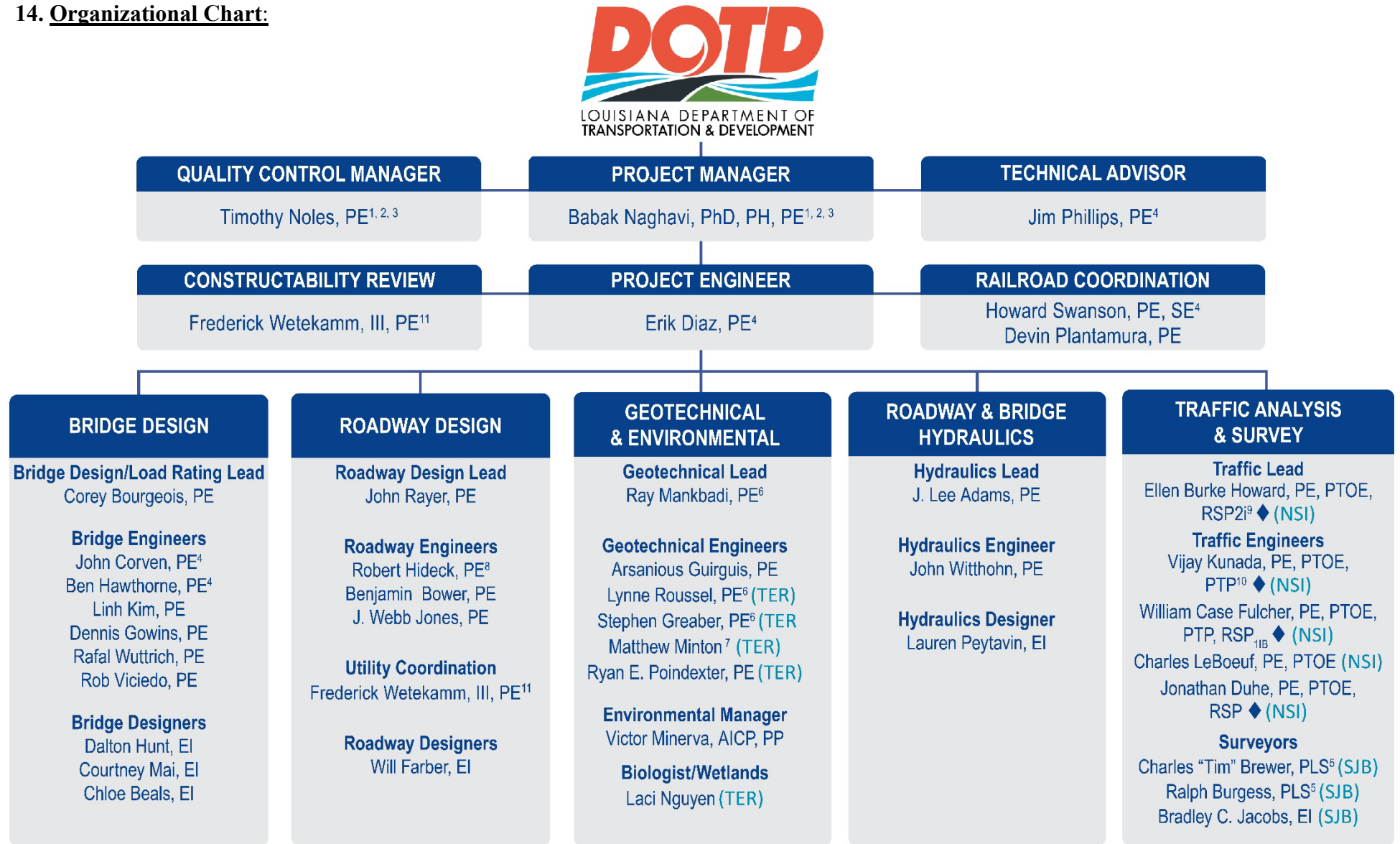
12. Discipline Table:

Discipline(s)	% of Overall Contract	Hardesty & Hanover, LLC	Neel-Schaffer, Inc.	Terracon Consultants, Inc.	SJB Group, LLC	Each Discipline must total to 100%
Bridge	70%	100%				100%
Road	10%	100%				100%
Geotech	7%	15%		85%		100%
Traffic	7%		100%			100%
Survey	5%				100%	100%
Environmental	1%	50%		50%		100%
Identify the percentage of work for the <u>overall contract</u> to be performed by the prime consultant and each sub-consultant.						
Percent of Contract	100%	81.5%	7%	6.5%	5%	

13. Team Size:

Firm name	DOTD Job Classification	Number of personnel <u>committed to this contract</u>	Total number of personnel available in this DOTD Job Classification (if needed)
Hardesty & Hanover, LLC	Principal	3	4
	Supervisor - Eng	6	8
	Engineer	10	12
	Engineer - Other	3	6
	Engineer Intern	5	7
	Environmental Manager	1	1
	Administrative	1	2
Neel-Schaffer, Inc.	Supervisor - Eng	1	2
	Engineer	4	10
Terracon Consultants, Inc.	Principal	2	1
	Engineer	1	2
	Other (Drilling and Laboratory Manager)	2	0
	Supervisor - Eng	1	1
	Engineer Intern	1	3
	Geologist	1	1
	Technician	2	3
	Driller	5	5
SJB Group, LLC	Surveyor	2	4
	Party Chief	2	5
	Instrument Man	2	5

	CADD DRAFTER	1	1
	Rodman	1	1
	Supervisor - Other	1	2
	Senior Technician	2	5
	Project Office Manager	1	1
	CADD Technician	1	2
	CADD Operator	1	2
	Principal	1	1

14. Organizational Chart:**LEGEND**

MPRs	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	◆	Traffic Engineering Analysis Process & Report Modules 1, 2, & 3		
Subconsultants					
NSI	Neel-Schaffer, Inc.	TER	Terracon Consultants, Inc	SJB	SJB Group, LLC

Unless otherwise noted, all staff shown are employees of H&H.

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
4	Jim Phillips, PE	Hardesty & Hanover, LLC	PE #25091 – Civil Engineer	LA	03/31/2027
4	John Corven, PE	Hardesty & Hanover, LLC	PE #38309 – Civil Engineer	LA	03/31/2026
4	Erik Diaz, PE	Hardesty & Hanover, LLC	PE #37712 – Civil Engineer	LA	09/30/2027
4	Howard Swanson, PE	Hardesty & Hanover, LLC	PE #43629 – Civil Engineer, Structural Engineer	LA	09/30/2027
4	Ben Hawthorne, PE	Hardesty & Hanover, LLC	PE #44620 – Structural Engineer	LA	09/30/2026
5	Charles “Tim” Brewer, PLS	SJB Group, LLC	PLS # 0005009	LA	09/30/2027
5	Ralph Burgess, PLS	SJB Group, LLC	PLS # 0005040	LA	09/30/2026
6	Lynne Roussel, PE	Terracon Consultants, Inc.	PE #35152 - Civil Engineer	LA	03/31/2028
6	Stephen Greaber, PE	Terracon Consultants, Inc.	PE #26107 - Civil Engineer	LA	09/30/2027
7	Matthew Minton	Terracon Consultants, Inc.	N/A	N/A	N/A
8	Robert Hideck, PE	Hardesty & Hanover, LLC	PE #41953 – Civil Engineer	LA	03/31/2026
9	Ellen Burke Howard, PE, PTOE, RSP ₁	Neel-Schaffer, Inc.	PE No. 38207 – Civil Engineer; PTOE 3735; RSP ₁ 349	LA, all, all	03/31/2028, 08/1/2026, 12/9/2028
10	Vijay Kunada, PE, PTOE, PTP	Neel-Schaffer, Inc.	PE No. 32145 – Civil Engineer; PTOE 2878; PTP 096	LA, all, all	03/31/2026, 04/14/2028, 11/07/2028
11	Frederick Wetekamm, PE	Hardesty & Hanover, LLC	PE #25369 – Civil Engineer, Environmental Engineer	LA	03/31/2028

16. Staff Experience:

	Firm employed by Hardesty & Hanover		
	Name	Babak Naghavi, PE, PH, PhD	Years of relevant experience with this employer
	Title	Regional Manager	Years of relevant experience with other employer(s)
	Degree(s) / Years / Specialization		Ph.D. / 1993 / Civil Engineering M.S. / 1982 / Civil Engineering B.S. / 1979 / Civil Engineering
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 & Environmental Engineering
Contract role(s) / brief description of responsibilities		Project Manager – Meets MPR 1, 2, & 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 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 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. 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.		
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 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.		
11/24 – Present	SR 33 Bridge Replacements, Franklin County, MS – Mississippi DOT Project Manager 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.		

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 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 for the construction of a three-lane concrete curb and gutter roadway with sidewalks and subsurface drainage on Glen Oaks Dr from Plank Rd to McClelland Dr. Glen Oaks Dr was a one-mi. existing Urban Collector roadway. The project also included improvements to several intersections, full topographic survey, subsurface drainage system and outfalls, and hydrologic and 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.
02/81 – 07/87	Road Design Section, Hydraulics Unit – LADOTD Senior Hydraulics Engineer responsible for the review and design of the numerous roadway and drainage projects including the drainage design of roadway and bridge structures, scour analysis of bridges, and stabilization of stream banks and shorelines. Also developed the Hydraulic Design Manual and all the hydraulics and hydrologic computer programs that were used by the LADOTD, other government agencies, and the consultant community to design the hydrologic and hydraulic structures.

16. Staff Experience:

	Firm Employed by Hardesty & Hanover			
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 Control Manager – Meets MPR 1, 2, & 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.

16. Staff Experience:

	Firm Employed by Hardesty & Hanover			
	Name	Jim Phillips, PE	Years of relevant experience with this employer	44
	Title	Principal Associate – Chief Engineer	Years of relevant experience with other employer(s)	11
Degree(s) / Years / Specialization		B.S. / 1982 / Civil Engineering		
Active registration number / state / expiration date		Professional Engineer: 25091 / LA / 3/31/2027		
Year registered	1992	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		Technical Advisor – 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).			
08/15-05/16	Wave Streetcar/SE 3rd Avenue Bridge over the New River, Fort Lauderdale, FL - Florida DOT Chief Engineer responsible for quality control of the bascule span and independent technical review of the machinery. The purpose of the WAVE streetcar project was to install a streetcar system crossing the existing 3rd Avenue double-leaf rolling-lift bascule bridge over the New River. H&H's scope includes modification of the existing pier and replacement of the rolling-lift span and associated mechanical/electrical systems to accommodate the new rail. The new bascule span will be 61 feet long between centers of roll and features a framing system of main girders, floorbeams and stringers supporting an Exodermic deck, and the streetcar rails. This challenging project requires careful coordination of the movable span, roadway, rail, and control systems.			
09/17-04/21	Replacement of the Raritan River Drawbridge, Perth Amboy/South Amboy, NJ - NJ Transit Principal Engineer participating in design of a \$425 million replacement of the Raritan River Drawbridge on North Jersey Coast Line. The project includes an off-line replacement with a dual track, 376-foot-long through-truss, vertical-lift main span providing a minimum 110 feet vertical clearance and a 300-foot navigational channel. Responsibilities included calculations and design of the span guide, counterweight hanger system and counterweight jacking systems. Also performed peer review of the framed steel towers, through-truss lift span, and machinery. Towers consist of closed box sections forming a pair of vertical trusses connected with lateral bracing.			
11/16-04/24	Gateway Expressway Design-Build, Pinellas County, FL - Florida DOT Technical Advisor, Structures. Responsible for technical oversight of design, plans production, and post design services for toll facilities and four minor fixed bridges. The project included construction of four new toll facilities and controlled access connections from the Bayside Bridge on the north, US19 on the west, and the St. Pete Clearwater International Airport to I-275. Toll scope included design of cantilever gantries for Toll Sites 1-1, 2-1, and 2-2, and a non-accessible span gantry for Toll Site 1-2. Structure designs include I-275 SB over Gandy Blvd., bridge widening (Bridge 22), I-275 SB over Roosevelt Blvd., bridge widening (Bridge 23), I-275 NB over Roosevelt Blvd., bridge replacement (Bridge 24), and I-275 over Big Island Gap, bridge modifications (Bridge 29). Design for Bridges 22 and 23 included widening of existing four-span prestressed concrete beam structures. Bridge 24 included the replacement of an existing four-span prestressed concrete beam structure with a new two-span prestressed concrete beam structure on a parallel alignment. Bridge 29 is an existing three-span prestressed concrete beam structure, that included modifying the location of the existing concrete median traffic railing to allow for a new lane configuration and installation of new bridge drainage components for I-275 NB (scuppers and longitudinal conveyance system).			

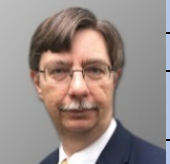
05/11-03/15	CSX Railroad Bridge over the New River, Ft. Lauderdale, FL - CSX Railroad Lead Technical Review responsible for the replacement of single track, single-leaf rolling-lift bascule bridge over the South Fork of the New River. Under contract to CSX, coordinated and performed design and constructability reviews of proposed new bridge and track designed by FDOT. Project included monitoring of existing bridge for settlement due to new, adjacent construction. Designs were reviewed for conformance with CSX and American Railway Engineering and Maintenance-of-Way Association (AREMA) standards. During construction served as technical advisor.
12/10-12/12	Arcelor Mittal Rail Bridge, Gary, IN - Arcelor Mittal Senior Engineer responsible for technical assistance in design, construction oversight, detailed shop inspection, and construction planning for new single-track, single-leaf rolling-lift rail bridge over the Indiana Harbor Canal. Bridge was configured with an overhead counterweight and is 111 feet long from toe to centerline of roll with the bridge in the closed position. Bridge spans a 90-foot-wide navigable channel. Responsible for technical assistance in structural design and detailed oversight of machinery design. Performed shop and field inspection of steel fabrication and alignment. Performed shop inspection of machining of the pinion shaft bore holes and track/track girder assemblies. Prepared detailed erection plan for site erection of movable span and machinery.
06/09-12/10	Haystack Bridge, Petaluma, CA - Sonoma Marin Area Rail Transit (SMART) District Chief Bridge Engineer responsible for developing concepts and design criteria for replacement of an historic existing single-track swing span over the Petaluma River. Project included preparation of designs and Advanced Concept Plans for a new 180-foot-long, through truss, single-leaf rolling-lift bascule to span a 100-foot-wide channel intersected at a sever skew. Responsible for bridge concept development, design, plans preparation, and cost estimating.
01/16--4/23	Beckett Bridge Replacement, Tarpon Springs, FL Pinellas County Government 1/2016-4/2023 Project Manager responsible for the design of a bridge replacement for 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 is 39 feet long from center of roll to tip and 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 bespoke 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.
01/07-01/10	CR 78/Matlacha Bridge Replacement, Matlacha, FL- Lee County Government Project Manager/Chief 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. Project included 360 LF of concrete sheet pile seawall with tiebacks. Responsible for project management, concept development, final design, and construction support services. Also participated in public meetings and preparation of a SIER environmental document.
06/15-07/17	SR 968/SW 1st Street Bridge at Miami River, Miami-Dade County, FL - Florida DOT Chief Engineer responsible for design oversight; peer review of the structural concept; and quality control of the drive machinery, trunnion assemblies, and span locks for the replacement of this nationally registered historic bridge. The 507-foot-long bridge includes a double-leaf bascule span, 240 feet long between trunnions, over a 125-foot-wide navigation channel. 4,000-kip bascule span features an Exodermic concrete deck, simple trunnions with plain journal bearings, and a 150-HP electro-mechanical drive system.

16. Staff Experience:

	Firm employed by Hardesty & Hanover		
	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 and 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 Engineering
Contract role(s) / brief description of responsibilities			Project 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).		
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.

16. Staff Experience:

	Firm employed by Hardesty & Hanover			
	Name	Howard Swanson, PE, SE	Years of relevant experience with this employer	5
	Title	Rail Practice Senior Project Manager	Years of relevant experience with other employer(s)	33
	Degree(s) / Years / Specialization		MBA / 1997/ Business Administration BS / 1986 / Civil Engineering	
Active registration number / state / expiration date			Professional Engineer: 43629 / LA / 09/30/2027	
Year registered	2019	Discipline	Civil Engineering, Structural Engineering	
Contract role(s) / brief description of responsibilities			Railroad Coordination – 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).			
08/21 – 12/23	GCRTA Waterfront Line Bridge Rehabilitation Project, Cleveland, OH – Greater Cleveland Regional Transit Authority Project Manager responsible for coordinating the efforts of three design teams producing contract documents to strengthen a 5-span segmental concrete box bridge, repair the MSE walls approaching the bridge, and replace the track including expansion joints over the bridge. The project includes inspecting and load rating the segmental concrete box bridge. The inspection revealed the need for temporary shoring to support the concrete spans until they are repaired. The bridge carries the GCRTA over Norfolk Southern Railway. The temporary shoring and rehabilitation plans were designed around Norfolk Southern clearance requirements.			
09/21 – 12/23	Tennessee River Bridge Repairs, Decatur, AL – Norfolk Southern Corporation Project Manager for the inspection, load rating, and design repairs for the fixed trusses of this bridge. H&H assessed the condition of the trusses and produced a report recommending standard repairs. Load ratings were provided based on the constructed, current, and repaired states. These ratings were provided for both design and rating stress states. H&H designed repairs to the truss floor system (bottom flange replacement for floor beams, stinger replacement, and bottom lateral system replacement).			
05/21 – Present	Portal North Bridge, Secaucus, NJ – Amtrak Owner’s Engineer responsible for protecting Amtrak’s interests throughout the replacement of the Portal North Bridge. Submittals, Requests for Information (RFIs), and Letters are reviewed and answered with the goal of keeping Amtrak’s existing roadbed and structures safe while the new Portal North Bridge is constructed. The long life of the new structure is ensured through the review and response to the contractor’s submittals.			
08/23 – Present	Ewing Avenue Bridge Rehabilitation, Chicago, IL – Norfolk Southern Railway Project Manager responsible for inspecting and producing repair documents for Norfolk Southern rail bridges over Ewing Avenue and 100th Street in Chicago. The work includes steel repairs and replacement of concrete platforms between the tracks with walkways for railroad personnel.			
08/05 – 02/06	Emergency Response PONO Hurricane Katrina, New Orleans, LA – Norfolk Southern Project Manager as part of Norfolk Southern Hurricane Katrina emergency response inspection team. Inspected Norfolk Southern Lake Pontchartrain Bridge for storm damages. Made cursory inspections of PONO’s Seabrook and Florida Avenue drawbridges after Hurricane Katrina.			

05/17 – 07/18	Bridge Replacement at Milepost B-154.16, Painesville, OH – Norfolk Southern Assistant Chief Engineer responsible for planning the replacement of a 1,300-foot-long and 105-foot-high single-track steel viaduct structure. The new structure consists of 11 welded deck steel plate girders with a precast concrete ballast deck. Concrete columns founded on drilled shafts support the spans. The project required coordination with the Corp of Engineers and the Ohio Department of Natural Resources.
03/16 – 06/18	Bridge Replacement at Milepost SR-361.66, Portageville, NY – Norfolk Southern Assistant Chief Engineer who worked with a multidisciplinary team to obtain the environmental impact statement and record of determination to replace Norfolk Southern bridge over the Genesee River in Letchworth State Park Bridge near Portageville, NY. The new bridge was constructed offline and right of way had to be obtained from New York State Parks. The EIS and ROD required building consensus with several different stakeholders including Native Americans, local community, and various government agencies. The construction required coordination of a complex mix of engineering and construction resources. The new bridge consists of a 483-foot steel arch flanked on each side by three 80-foot welded girders. The bridge was placed in service in December of 2017.
06/06 – 08/07	Ballast Deck Replacement at Milepost PC-29.25, New Brighton, PA – Norfolk Southern Assistant Engineer Structures who managed the replacement of 1,200 feet concrete ballast deck on Norfolk Southern's nine-span double track bridge over the Beaver River. The concrete deck was replaced with a steel deck to increase the bridge's capacity. The bridge is on the mainline between Chicago and New York City. An accelerated construction schedule was used to replace the deck under 1 track in 6 weeks. The adjacent track was kept in operation during construction.
05/13 – 07/15	Bridge Replacement over 51st Street, Chicago, IL – Norfolk Southern Regional Engineer Structures responsible for managing the phased replacement of Norfolk Southern rail bridge over 51st Street in Chicago. The bridge is a quarter mile wide and carries 33 tracks of the 47th Street Intermodal yard. Most of the traffic handled by the intermodal yard is time sensitive. The project phasing allowed the yard to be replaced without delays to rail traffic.
04/11 – 08/13	Bridge Replacement at Milepost N-340.68, Glen Lynn, VA – Norfolk Southern Assistant Division Engineer responsible for managing the replacement of a 130-foot-long, two-span, open deck double-track bridge on a seven-degree curve with a 180-foot-long three-span ballast deck bridge. The new bridge was built on the same alignment as the existing bridge. The abutments were founded on drilled shafts. Temporary spans allowed the drilled shafts to be constructed during available track windows. Crawler cranes for setting the spans had to be delivered by rail due to difficult site access. The spans were set during 80-hour track outages. The adjacent track was kept in service while spans were set.
07/08 – 12/09	Concrete Deck and Span Replacement at Milepost D-252.92, Lafayette, Indiana – Norfolk Southern Assistant Division Engineer who managed the replacement of 594 feet concrete ballast deck and three spans on Norfolk Southern's eight span single track bridge over Wildcat Creek. The concrete deck was replaced with precast concrete deck panels. Six-hour track outages four days a week were used to replace the concrete deck in ten weeks. Three 14-hour outages were used to replace the three spans. Worked with the contractor to develop the construction schedule. The project was completed on time.

16. Staff Experience:

	Firm employed by Hardesty & Hanover		
	Name	Devin Plantamura, PE	Years of relevant experience with this employer
	Title	Senior Track Engineer	Years of relevant experience with other employer(s)
	Degree(s) / Years / Specialization		ME / 2009 / Transportation Systems Engineering BE / 2005 / Civil Engineering
	Active registration number / state / expiration date		Professional Engineer: 90771 / NY / 02/28/2027
Year registered	2012	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			Railroad Coordination
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	Pelham Bay Bridge Replacement Project, Bronx, NY - Amtrak Deputy Project Manager / Track Design Lead for Preliminary Engineering for the replacement of Amtrak’s Pelham Bay Bridge. The existing bridge is a two-track through-truss bascule that carries the Northeast Corridor over the Hutchinson River. The project will construct a new, two-track trunnion bascule bridge offline which will improve speed and reliability. Devin is leading the development of the Preliminary Engineering design for the track alignments and profiles to meet the project goals of increasing the operating speed that supports both Amtrak’s current and projected future needs, as well as the future needs of Metro-North Railroad, whose Penn Station Access (PSA) project will be complete when the new bridge goes to construction. Devin is responsible for coordinating with the PSA project team to ensure that the track and rail systems designs are integrated between projects.		
11/23 – 03/24	I-77 Widening from South Carolina State Line to I-277/NC 16, Charlotte, NC - North Carolina Turnpike Authority Lead Track Design Engineer for the conceptual study to replace two freight railroad bridges in Charlotte, NC, to support the proposed widening of the I-77. One bridge is owned by CSX and carries a single track of the CSX SF-Line. The second bridge is owned by Norfolk Southern (NS) and carries two tracks of the NS Mainline. Devin led the development of track alignment concepts for multiple offline options for new permanent bridges and temporary shooflies. Prepared track horizontal and vertical alignments to meet the proposed design speed and the respective railroads design criteria. Worked closely with structural engineers to coordinate track alignments with bridge constructability considerations. Final deliverables included conceptual plans, profiles, and order of magnitude cost.		
01/25 – Present	Brielle Drawbridge over Manasquan River, Brielle / Point Pleasant, NJ - NJ Transit Rail Systems / Track Design Lead for Preliminary Engineering and Final Design for the replacement of NJ Transit’s Brielle Drawbridge. The existing bridge is a single-track bascule bridge that is nearing the end of its useful life. The replacement bridge will be a two-track bascule. One of the project goals is to raise the top of rail elevation to meet NJ Transit’s resiliency goals. Devin has led the development of the track alignment and profile design to raise the top of rail over 7 feet while meeting NJ Transit design criteria and addressing constructability concerns.		
01/20 – 05/24	Replacement of Saugus Drawbridge (Str. No. S-05-040 (A5E)), Saugus & Lynn, MA - MBTA Project Manager for the final design phase of the \$300 million replacement of the Saugus River Bridge carrying two tracks of the MBTA East Route over the Saugus River. The project includes the design of a new bridge and approach spans adjacent to the existing bridge. Responsible for coordinating the multidisciplinary design effort, which includes track alignment, rail systems, environmental, geotechnical, civil, and structural designs, maintaining project schedule and budget. Devin worked with the design team to develop a sequence of construction that addressed constructability concerns for working adjacent to an active rail line while minimizing impacts to service.		

06/24 – Present	Chicago Hub Improvement Program: Concept Design for Future Treatment of South Branch Bridge over Chicago River, Chicago, IL – Amtrak Project Manager / Track Design Lead for the concept level study to replace or rehabilitate Amtrak's South Branch Bridge over the Chicago River. The study is part of the Chicago Hub Improvement Program (CHIP), which is a series of railroad improvement projects to reduce travel time and increase reliability and capacity into Chicago Union Station. The South Branch Bridge is a vertical lift bridge built in 1914 that has limited vertical clearance when closed, resulting in frequent openings. The bridge is experiencing issues with the mechanical and electrical systems. H&H, as a sub-consultant, performed an analysis of 12 replacement alternatives, including new vertical lift bridges, trunnion bascule, high-level fixed bridge, and tunnel options. For each, H&H prepared track horizontal and vertical geometry designs in accordance with Specification No. 63. For the final submission, H&H is tasked with advancing a preferred option to 10% design. Devin is the Project Manager and Track Design Lead for H&H.
04/22 – Present	Superstructure Replacements of Bridge No. 58.03 over Washington Street and Bridge No. 58.16 over Pennsylvania Avenue, Morrisville, PA – Amtrak Track Design/Rail Systems Task Leader for the preliminary engineering to replace the superstructures of these two bridges. Devin's responsibilities include the design of the new tracks over both bridges and coordination of overhead contact system, communication & signal system modifications to support the bridge replacement. The bridges are located within the limits of MORRIS Interlocking. Amtrak, NJ Transit, and SEPTA operate through this territory and the interlocking is critical to supporting their operations. Devin supported the development of the complex staging plans needed to support the replacement of the bridge superstructures with minimal disruption of service.
06/21 – 05/23	Rehabilitation of Waterfront Line Bridge, Cleveland, OH – GCRTA Track Design Lead for the rehabilitation of the Waterfront Line Bridge, which is a segmental concrete bridge that carries the Greater Cleveland Regional Transit Authority (GCRTA) Waterfront Line light rail over NS. The tracks on the bridge are direct fixation with ballasted track on the approaches. The track geometry includes sharp reverse curvature across the bridge, resulting in large radial forces due to thermal expansion/contraction of the rail. As part of the rehabilitation of the bridge structure, the approach ballasted tracks and the rails across the bridge direct fixation are being replaced. Devin led the design for the new track section that included modification to the bridge rail expansion layout with new back-to-back rail expansion joints installed on the bridge deck. He also developed detailed designs for the rail expansion joint on direct fixation track.
06/20 – 09/20	Structural Rehabilitation of Four Overhead Bridges, New York, NY - Metro North Railroad Senior Track Engineer responsible for reviewing the tie dapping plan for bridge NH 25.93. The bridge is skewed and located on a curved and superelevated section of track. Devin modeled the proposed tie dapping along with the survey data to identify potential defects in the rail profile, cross level, and tie spacing, and developed a plan to remediate these issues. He also helped to identify a potential close clearance and helped MNR to modify the construction schedule to minimize the risk and delays during construction.
02/19 – 12/19	King of Prussia Rail, Montgomery County, PA Southeastern Pennsylvania Transportation Authority Project Integrator with direct oversight of all engineering and architectural tasks for Preliminary Engineering. KOP Rail was a proposed four-mile branch of the Norristown High Speed Line, providing a rail transit link to King of Prussia, a vital component of the regional transportation network. Devin led the design of the track alignment and profile to meet the design criteria while minimizing impact to the numerous project stakeholders. Devin also directed the station siting and development, coordinating between structural and architectural designs and across numerous subconsultants. As part of the project management team, Devin interfaced directly with SEPTA and major project stakeholders.
02/17 – 06/19	PATH Westside Avenue Universal No. 15 Crossover, Jersey City, NJ - Port Authority of New York and New Jersey Trackwork Design Engineer responsible developing special trackwork procurement documents for tangential No.15 crossover for PATH. Devin worked closely with PATH signal/track engineers and vendors to resolve issues encountered by PATH on turnout installations, with particular focus on commonality of switch components and ease of installation and maintenance. The procurement plans served as standard plans for future turnout procurements. In addition to special trackwork design, Devin developed installation plans, which included the removal of the existing double crossover and improvements to the horizontal and vertical geometry to accommodate the new universal crossover.

16. Staff Experience:

	Firm employed by Hardesty & Hanover			
	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)	29
	Degree(s) / Years / Specialization		M.E. / 2018 / Construction Management B.S. / 1984 / Civil Engineering	
	Active registration number / state / expiration date		Professional Engineer: 25369 / LA / 3/31/2028 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, Utility Coordination – Meets MPR 11	
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
01/20 – 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-Build'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.

16. Staff Experience:

	Firm employed by Hardesty & Hanover		
	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 Design/Load Rating Lead
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 roadway 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 with 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. 36-0IDP5067, 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.
3/24 – 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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover		
	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				Bridge Technical Advisor – Meets MPR 4	
Experience dates (mm/yy–mm/yy)		Experience and qualifications relevant to the proposed contract; i.e., “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
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.			
6/20 – 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.
01/97 – 12/98	Cross Florida Greenway Bridge, Ocala, FL - Florida Department of Environmental Protection Principal Designer/Engineer of Record providing design of America's first "Land Bridge" carries the Cross Florida Greenway over Interstate 75 just south of Ocala, Florida. The bridge supports a native Greenway habitat providing an uninterrupted experience for the trail user and crossing for wildlife. The project was also the first use of prestressed concrete prestressed U-beams in Florida.
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 plate 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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover		
	Name		Ben Hawthorne, PE	Years of relevant experience with this employer	21
	Title		Senior Structural Engineer	Years of relevant experience with other employer(s)	0
	Degree(s) / Years / Specialization		BS / 2005 / Civil Engineering		
	Active registration number / state / expiration date		Professional Engineer: 44620 / LA / 09/30/2026		
Year registered		2020	Discipline	Structural Engineering	
Contract role(s) / brief description of responsibilities			Bridge 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).			
06/18 – 09/21		Replacement of Amtrak Bridge over the Connecticut River, Old Saybrook, Middlesex County, CT - Amtrak Project Engineer / Deputy Project Manager 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.			
03/20 – Present		Rehabilitation Middletown Swing Railroad Bridge, Middletown, Middlesex County, CT - Connecticut DOT Project Manager for the rehabilitation of a 300 feet, single-track swing span, 4 200 feet through truss approach spans, and a 60 feet through girder span. The structure is serves Providence & Worcester Railroad customers in Portland, CT. Rehabilitation and repair details are based on results of an in-depth structural, mechanical, and electrical inspection and load rating of the structure. Structural repairs target primary members in poor condition and any elements that do not rate for a 286K carload. Additional work includes safety upgrades to the access system and fender system repairs. Swing span operating system rehabilitation includes replacement of low-torque high-speed mechanical equipment and upgrades to the electrical system.			
01/18 – 12/22		Replacement of Mosher Avenue Bridge over Amtrak, Groton, New London County, CT - Connecticut DOT Project Engineer for the superstructure replacement of the 100-foot-long through-girder Mosher Avenue Bridge over Amtrak railroad. Mosher Avenue Bridge carries 2-lanes of local traffic and a 10-inch water main over two tracks of electrified rail with substandard vertical under-clearance. Mosher Avenue Bridge provides a vital commercial, residential, and utility link to the Noank Village and full closure of the structure presented a significant impact to the region. H&H's design process began with a Bridge Type Study report that emphasized feasibility of accelerated bridge construction (ABC) techniques to minimize local impacts. The final proposed structure is a composite steel and concrete Prefabricated Bridge Unit (PBU) structure. A durable metallized coating is used to reduce future maintenance. Construction activities over the rail envelope are limited to overnight periods of foul time in coordination with Amtrak schedules along the corridor. Existing bridge demolition and construction of the new span are scheduled to be completed with a 12-week closure. Early construction stages in advance of the full closure are utilized to perform necessary approach stabilization and utility relocation work. Water service may not be interrupted for more than 12 hours, and a temporary utility structure and water main have been designed to meet that restriction.			
07/13 – 05/19		Replacement of Sarah M. Long Bridge, Portsmouth, Rockingham County, NH & Kittery, York County, ME - Maine DOT 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. Mr. Hawthorne 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.
10/17 – 12/19	Rehabilitation of Route 202 Bridge over Housatonic River, New Milford, Litchfield County, CT - Connecticut DOT Team Leader/Structural Engineer responsible for condition inspection of the New Milford truss bridge over the Housatonic River. This single-span, steel, through-truss bridge rehabilitation project addressed deficiencies on the steel truss superstructure and post-tensioned concrete deck and included sidewalk repairs and new bridge rail. The project included inspection, load rating, preliminary and final design as well as environmental permitting and public involvement. Mr. Hawthorne provided technical oversight and peer review of the truss load rating procedures as well as the structural repair details developed from the inspection information.
03/07 – 12/07	Pile Substructure Rehabilitation, Bridge No. 90.60 over the East River, Guilford, New Haven County, CT - Amtrak Structural Engineer responsible for the design of the substructure rehabilitation and permit applications for the rehabilitation of the substructure and piles of an existing 2-track, ballasted deck concrete railroad bridge. Designed jacket repair details for existing deteriorated concrete piles.
05/06 – 03/07	Inspection & Conceptual Engineering of Connecticut River Bridge, Old Saybrook, Middlesex County, CT - Amtrak Inspector/Structural Engineer responsible for field inspection, report preparation, and feasibility and economic analysis of conceptual alternatives for the Connecticut River Bridge carrying Amtrak Railroad. This 10-span structure constructed in 1906, consists of 7 thru-truss spans, 2-deck girder spans and one thru-truss bascule lift span over the Connecticut River. The first phase of this project included a field inspection and Condition Inspection Report. The second phase included an Alternatives Study which discussed and compared rehabilitation versus replacement options evaluated in terms of cost, schedule, service life, constructability, and safety.
04/06 – 05/06	Replacement of Willis Avenue Swing Bridge over Harlem River, New York, NY - New York City DOT Structural Engineer responsible for design of the reinforced concrete fender system for the off-line replacement of a major, award-winning new 345-foot-long swing bridge with 3,000 feet of highway approaches. Extensive community participation and agency coordination was required on this project, as was permitting from numerous City, State and Federal agencies, and private corporations, including FHWA, NYSDOT, U.S. Coast Guard, U.S. Army Corps, NYSDEC, NYSDOS, SHPO, CSXT, NYS-Rail Freight, Waste Management, NYC Parks Department.
04/11 – 08/13	Rehabilitation of River Street & Western Avenue Bridges, Cambridge, Middlesex County, MA - Massachusetts DOT Structural Engineer responsible for structural design for the rehabilitation of two historic concrete deck arch structures over the Charles River and two adjacent approach structures. New approach superstructures are composed of precast, prestressed concrete NEXT beams. Primary responsibilities included design of a precast concrete substructure for the approach underpasses suitable for accelerated bridge construction and existing site constraints, and the design of a new cast in place concrete wing wall structure founded on drilled mini piles as part of the arch bridge rehabilitations. Additional responsibilities included production of complete final PS&E including coordination with all design team members and subconsultants.
01/15 – 02/16	Rehabilitation of I-84 Eastbound & Westbound Bridges, Hartford, Hartford County, CT - Connecticut DOT Project Engineer for the Preliminary and Final Design of the rehabilitation of these multiple span structural steel multi-girder bridges. These structures, originally constructed in 1962, are comprised of 6-span and 10-span viaducts using cantilever, hinged, and pin & hanger supported spans. The rehabilitation included deck & deck joint rehabilitation, structural steel rehabilitation, bearing replacement, parapet safety upgrades, illumination, and concrete substructure repairs. Bridge ratings using AASHTOWare bridge rating software have been provided for as-built, as-inspected, and as-repaired sections.

16. Staff Experience:

	Firm employed by Hardesty & Hanover		
	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 Engineering
Contract role(s) / brief description of responsibilities			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 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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover	
	Name	Dennis Gowins, PE	Years of relevant experience with this employer	17
	Title	Senior Principal Bridge 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			Senior 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).			
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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover	
	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			Senior 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 the 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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover		
	Name		Rob Vicedo, PE	Years of relevant experience with this employer	29
	Title		Structural Engineer	Years of relevant experience with other employer(s)	2
	Degree(s) / Years / Specialization		BS / 1995 / Civil Engineering		
	Active registration number / state / expiration date		Professional Engineer: 36533 / LA / 03/31/2028		
Year registered		2011	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Bridge Engineer		
Experience dates (mm/yy–mm/yy)		Experience and qualifications relevant to the proposed contract; <i>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 – 06/21		SFRTA Bridge over Miami River (MR-MICCI) Miami, FL - Florida DOT District 4 Structural Engineer for the design of twin steel through-girder bridges replacing the historic railroad bascule bridge across the Miami River. The twin bridges will provide a vital link of double tracking to the Miami Intermodal Center. The design includes a staggered pier span arrangement to maximize hydraulic conveyance while minimizing construction-related vibrations and the resulting risk to the existing bridge.			
5/20 – 12/16		SFRTA Railroad Bridge over New River, Fort Lauderdale, FL - Florida DOT District 4 Task Leader responsible for the design of rolling-lift bascule span superstructure and also served as project manager of construction support services. Overall scope included preliminary PD&E study and final design for the off-line replacement of a single-leaf heavy rail bridge owned and operated by SFRTA and used by CSX Freight and Tri-Rail as an alternate route. The project included inspection of the structural, mechanical, and electrical systems and the development of rehabilitation and replacement options (swing and bascule span) with conceptual drawings, alignments, and cost estimates. The preferred alternative consisted of three 41-foot prestressed concrete approach spans and a 103-foot rolling-lift-span designed using the AREMA code.			
03/15 – 12/18		Wave Streetcar/SE 3rd Avenue Bridge over New River, Fort Lauderdale, FL - Florida DOT District 4 Structural Engineer responsible for the preliminary design and load rating analysis of the bascule span main girders as part of the engineering design (90% drawings) for SE 3rd Avenue Bridge improvements to accommodate the proposed WAVE Streetcar. H&H's scope included all necessary design modifications to the rolling-lift-span, pier, and associated mechanical/electrical systems and load rating to accommodate the new embedded rail while providing sufficient strength, stiffness, and ride-ability for the new mode of transportation. The goal was to replace the leaf with a new bascule span which is 61-feet-long between centers of roll and features tracks and treads on a 6-foot, 2-inch roll radius, mechanical drive train with enclosed gearing driving the rack pinion, and tail lock mechanism.			
01/10 – 03/19		NW South River Drive Bridge over Tamiami River Canal, Miami, FL - Miami Dade County Public Works Structural Engineer responsible for design and detailing of the main girders and floorbeams and managing the construction support services phase for this \$35 million bridge replacement project. Scope included preliminary design of movable bridge alternatives during the PD&E study, final design, and construction support services to replace the historical Tamiami Canal Swing Bridge with a 123-foot-long simple trunnion single-leaf through-girder bascule span bridge. The project included providing a four-lane-wide bridge with a 6-foot sidewalk, and 12-foot shared use path and a control house within a 50-foot limited right-of-way, combined with a low bridge profile this resulted in the need to use through-basculer girders. The floor system consisted of floor beams and an Exodermic bridge deck with no steel stringers and lateral bracing. Architectural features of the bridge and control house were also included in the detailed design.			

01/05 – 06/10	SR 7/NW 5th Street Bascule Bridge over Miami River, Miami, FL - Florida DOT District 6 Project Engineer responsible for design and load rating and provided 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.
02/14 – 08/19	Camino Real Bridge over ICWW, Boca Raton, FL - Palm Beach County Structural Engineer responsible for the load rating analysis of the main girders and was involved in the detailing of the bascule span rehabilitation plans of a historic double-leaf rolling lift span constructed in 1939. The rehabilitation of this historic double-leaf rolling lift span included designs for rehabilitated machinery, new tender house HVAC units, new plumbing systems, new span locks, and the development of technical special provisions. Structural rehabilitation designs involved new roadway grating, floorbeam brackets for wider sidewalks, stringers, and bridge railing. Aluminum structural components were utilized to minimize weight to counter balance.
03/18 – 06/19	SR-609 Bascule Bridge over Old Fort Bayou Rehabilitation, Ocean Springs, MS - Mississippi DOT Structural Engineer for development of the structural rehabilitation design and 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. All designs were in accordance with AASHTO, FHWA, and MDOT guidelines and specifications.
04/12 – 10/15	SR 969/NW 72nd Avenue/Milam Dairy Road from North of NW 25th St. to NW 74th St. Connector, Miami, FL - Florida DOT District 6 Structural Engineer responsible for providing construction support services for this 2.7-mile urban RRR project in Miami-Dade County. Scope of work included milling, resurfacing, ADA upgrades, signing and marking upgrades, signalization upgrades, bridge railing upgrades, drainage improvements, as well as safety improvements at the intersection of NW 74th Street. This section of Milam Dairy Road carries a significant amount of freight traffic between the Palmetto Expressway and the neighboring Miami International Airport and FEC/Hialeah Rail Yard, which presented numerous design challenges and considerably elevated the public perception of the project.
04/21 – 11/21	Bronx River Parkway – Project Site B, New York, NY - New York Department of Transportation Structural Engineer responsible for the preliminary design of the built-up steel girders for a 5-span continuous bridge. Also responsible for investigating potential launching for such girders.
02/13 – 10/17	Bay Harbor Causeway, Bay Harbor Island, FL - Town of Bay Harbor Islands Structural Engineer responsible for the design and detailing of the movable span sidewalk replacement for the Bay Harbor Bridge rehabilitation which included structural steel superstructure painting, concrete spall and crack repairs to the substructure including cathodic protection, bridge railing repair, structural steel repair, as well as machinery and electrical repairs to the bascule span operating systems.
01/19 – 08/21	SR 3/Christa McAuliffe Bridge over Canaveral Barge Canal, Merritt Island, FL - Florida DOT District 5 Project Manager / Project Engineer in charge of general project coordination and a task for the design, detail of repairs, load rating analysis, 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.

16. Staff Experience:

	Firm employed by Hardesty & Hanover		
	Name	Dalton Hunt, EI	Years of relevant experience with this employer 4
	Title	Civil Designer	Years of relevant experience with other employer(s) 0
	Degree(s) / Years / Specialization		B.S. / 2021 / Civil Engineering
Active registration number / state / expiration date		Engineer in Training: 35118 / LA / 9/30/2026 Certifications: ATSSA Traffic Control Supervisor and Flagger	
Year registered	2022	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		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).		
02/22 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana – Jefferson Parish DPW/LADOTD Structural Designer 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 in accordance with LADOTD Standards and Specifications. Load rating was performed using AASHTOWare BrDR load rating software.		
01/22 – Present	H.014530: Almonaster Ave Railroad Bridge over the Industrial Canal, New Orleans, LA – Port of New Orleans/LADOTD Structural Designer 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 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 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. Project includes 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.		
03/22 – 10/23	H.014363.5 IDIQ Contract for ADA Design Projects Statewide, Slidell, LA – LADOTD Structural Designer 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.		
04/22 – 12/22	SR 605 Bascule Bridge over Industrial Waterway, Harrison County, MS – Mississippi DOT Structural Designer 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 – Present	H.002798.6 Bayou Teche Movable Bridge at Oaklawn, St. Mary Parish, LA – LADOTD Structural Designer 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.		

01/23 – 06/24	I-59 / I-20 Box Girder Bridges Inspection and Load Rating, Meridian, MS – Mississippi DOT Structural Designer 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 were made based on the inspection results and the load rating.
09/22 – Present	I-10 & I-12 College Dr Flyover Ramp Design- Build, Baton Rouge, LA – LADOTD Field Engineer Intern 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 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 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.
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) and a vertical lift bridge (West Fork) have been completed to date.
06/22 – 08/23	SR 609 Movable Bascule Bridge Inspection and Load Rating, Ocean Springs, MS – Mississippi DOT Structural Inspector 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.
03/24 – 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.
04/22 – Present	H.001498.6; LA 24 and LA 16 Company Canal Vertical Lift Bridge, Bourge, LA – LADOTD Field Engineer 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.
12/23 – Present	H.015028.6 Bayou Barataria Movable Bridge Replacement (CE&I), Phase 1, LA 302, Jefferson Parish, LA – LADOTD Structural Designer 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.
07/24 – 12/24	I-110 Bridge over the back Bay of Biloxi, Harrison, MS – Mississippi DOT Structural Inspector for the in-depth routine/fracture critical inspection and load rating of I-110 Bridge over Biloxi Back Bay for Mississippi Department of Transportation. The 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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover	
	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			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-Builder's 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.

16. Staff Experience:

	Firm employed by Hardesty & Hanover			
	Name	Chloe Beals, EI	Years of relevant experience with this employer	1
	Title	Civil Designer	Years of relevant experience with other employer(s)	1
	Degree(s) / Years / Specialization		BS / 2024 / Civil Engineering	
	Active registration number / state / expiration date		Engineer in Training: 35946 / LA / 09/30/2027	
Year registered	2025	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			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).			
10/25 – Present	2017-046A-RBP Lapalco Bridge over Harvey Canal Deck Repairs, Jefferson Parish, LA Louisiana DOTD Engineer Intern assisting in the preparation of construction plans, technical specifications in conformance with current LADOTD requirements. Assisting in the preparation of Bridge Deck Evaluation Report, Bridge Deck Inspection Findings and Recommendations, and generating typical sections for the deck repair. Attended site visit to inspect the deck and deck joints.			
12/25 – Present	H.011962, H.011986, H.012063, H.012734, & H.013818 Five 5 Vertical Lift Bridge Rehabilitation/Replacement, Various Locations, LA - Louisiana DOTD Structural Engineer Intern for the inspection and rehabilitation of Task Order H.013818 Golden Meadow Bridge structure referenced above. Work also includes development of a scope of work, rehabilitation or replacement plans, and specifications for each structure. Project also requires an LRFR Load Rating of H.013818. Work is limited to all portions of the bridge that are above ground or above mean water level.			
07/25 – Present	H.009730.5 LADOTD Movable Bridge Manual, Statewide, LA - LADOTD Structural Engineer Intern assisting in 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).			
04/25 – Present	H.009730.5 SNBI Data Collection, Statewide, LA - Louisiana DOTD 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			
08/25 – Present	Popp's Ferry Bascule Bridge, Biloxi, MS - Mississippi OSARC Civil Engineer Intern assisting in the inspection of Popp's Ferry Bridge deck, assisted generation of the inspection report and reported SNBI items for the bridge. Attended site visit to inspect bridge superstructure.			

16. Staff Experience:

	Firm employed by		Hardesty & Hanover	
	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 Lead	
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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover	
	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			Senior 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 for this project in an urban setting . 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 in an urban setting which carries 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 is in an urban setting and 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 in an urban setting 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 for this project in urban setting. 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.
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 this project in urban setting. 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 this project in urban setting. 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 this project in urban setting. 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 included the milling and resurfacing of the existing roadway, and 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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover	
	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 1 st St corridor from SW 6 th Ave to SW 2 nd 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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover		
	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			Senior 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 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 in lieu of 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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover		
	Name	Will Farber, EI		Years of relevant experience with this employer	1
	Title	Civil Designer		Years of relevant experience with other employer(s)	5
	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.				

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.
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 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.
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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover		
	Name		Raymond Mankbadi, PE	Years of relevant experience with this employer	19
	Title		Director Geotechnical Engineering	Years of relevant experience with other employer(s)	28
	Degree(s) / Years / Specialization		M.S. / 1985 / Civil Engineering B.S. / 1978 / Civil Engineering		
	Active registration number / state / expiration date		Professional Engineer: 41609 / LA / 9/30/2027		
Year registered	2017	Discipline	Civil Engineering		
Contract role(s) / brief description of responsibilities			Geotechnical Design Lead – 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 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 Lead Geotechnical 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.				
01/19 – Present	H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Lead Geotechnical Engineer for 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. The 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.				
04/17 – Present	I-395 Segmental Bridges, Miami, FL – Florida DOT Geotechnical 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.				
06/19 – 09/20	SR-605 Bascule Bridge over Industrial Waterway, Gulf Port, MS – Mississippi DOT Lead Geotechnical Engineer responsible for design, plan review, and quality control 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.				
03/18 – 06/19	SR-609 Bascule Bridge Rehabilitation, IDIQ Master Bridge Design Contract, Ocean Springs, MS – Mississippi DOT Lead Geotechnical Engineer responsible for generator foundation design of SR-609 bascule bridge as a task-order to the IDIQ Master Bridge Contract for standard and special bridge services statewide. The scope of work included inspection and rehabilitation of structural, mechanical, and electrical bridge components, roadway approaches, and development of maintenance and repair plans.				

11/20 – 01/21	Four Tunnel Inspections as per TOMIE Manual, New York, NY – New York City DOT Lead Geotechnical Engineer for the in-depth inspection and condition assessment of the 1st Ave and Park Ave tunnels as part of a broader NYCDOT ESA assignment. These findings were documented in a Routine Inspection Report format developed by H&H in conjunction with NYCDOT, including prioritized recommendations for further maintenance and rehabilitation. In addition to the inspection. Inspection reports were prepared to SNTI and TOMIE specifications.
02/12 – 03/13	Study & Preliminary Design for RFK Bridge to Northbound Harlem River Dr (RK-23), New York, NY - Triborough Bridge and Tunnel Authority Lead Geotechnical Engineer responsible for the feasibility study for a new ramp to provide a direct connection from the RFK Bridge to the northbound Harlem River Dr located in the Borough of Manhattan, New York City. The need for the proposed connector ramp results from vehicular movement experiencing delays, local congestion, and local community pollution. The study evaluated various alignment alternates for a one way, one lane passenger vehicle ramp operation with provision for passing a stalled vehicle by another of the same type for a design speed of 35 mph. The structure is anticipated to carry an ADT over 19,000 vehicles per day. The study identified the most prudent and feasible alternatives to provide a direct connection from the RFK Bridge to northbound Harlem River Dr. Design of the new structure must meet current standards to the extent possible, while also avoiding, lessening, or mitigating impacts and effects to surrounding properties and jurisdictions.
02/14 – 12/16	Rehabilitation of Swing Bridge (BNSF #32.06) over Bayou Des Allemands Des Allemands, Lafourche & St. Charles, LA - BNSF Railway Co. Lead Geotechnical Engineer for a 90-ft. single track swing span, two jump spans, and ten approach spans of prestressed concrete box beam, crosses the Des Allemands Bayou in Des Allemands, LA. The 90-ft. swing span was replaced on the existing substructures which were reinforced by adding micropiles. Two jump spans were rehabilitated as well. H&H provided professional engineering services for the development of final bridge and track designs, permitting, construction contract documents, construction management and construction support for the rehabilitation of the bridge. The estimated construction cost is about \$15 million. The project included the replacement of spans all associated mechanical and electrical components as well as evaluation, rating and improvement of swing span substructure and foundations.
05/12 – 06/13	Design-Build for RFK Bridge Manhattan-Queens Ramp Replacement (RK-73), New York, NY - Triborough Bridge and Tunnel Authority Lead Geotechnical Engineer in charge of preparing subsurface investigation, foundations design, seismic retrofit design of permanent and temporary foundation, and developing geotechnical report. The RK-73 project included the design and construction of Ramp MQ of the Robert F. Kennedy Bridge through a design-build contract on Randall's Island. The ramp replacement included roadway widening and seismic design retrofit.
01/12 – 10/16	Garden State Pkwy SB & NB Bridges over Great Egg Harbor & Drag Channel, Atlantic & Cape May Counties, NJ - NJ Turnpike Authority Lead Geotechnical Engineer responsible for all geotechnical aspects of the design and construction including pile foundation design, soil improvement, sign structures, retaining walls, reinforcement embankment on soft soils and instrumentation for two new bridges crossing Great Egg Harbor and Drag Channel. (\$140M). The project also included cofferdam for deep water and water nose mitigation for protection of the fish. Prestressed Concrete piles were utilized in the foundations and CMC for soil improvement. All work was performed in accordance with AASHTO LRFD Bridge Specifications and FHWA Geotechnical Engineering Manuals and Circulars.
12/11 – 05/17	Flagler Memorial Bascule Bridge Replacement Design/Build, West Palm Beach, FL – Florida DOT Geotechnical Engineer of Record responsible for all geotechnical aspects of the design and construction including subsurface investigation program development, foundation design, cofferdam, geotechnical analysis, and report preparation. This project consisted of complete replacement of the existing bridge with a new four-lane divided bridge. 60-in. diameter drilled shaft embedded in overburden soils with post grouted tip are utilized to support new bridge structure and the approach roadway embankment are supported on 36-in. diameter drilled caissons.
11/19 – Present	Geotechnical Engineering and Engineering Geology Staff Augmentation, Statewide, NJ – New Jersey DOT Project Manager responsible for maintaining the team's budget, schedule, and scope of work and for the quality management of all work efforts – analyses, reports, and design plans and specifications. The work performed under this agreement includes the development of an Asset Management Database for retaining walls constructed within NJDOT ROW, as well as rock slope stability analysis and condition surveys of all previously installed mechanical rockfall mitigation and developing remaining service life estimates. Efforts under this task order agreement include Geotechnical Data Management System (GDMS) Review, and Quality Control and Quality Assurance Services on as-needed basis for the Engineering Geology Unit.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover		
	Name		Arsanious Guirguis, PE	Years of relevant experience with this employer	14
	Title		Geotechnical Engineer	Years of relevant experience with other employer(s)	0
	Degree(s) / Years / Specialization		MS / 2014 / Geotechnical Engineering BS / 2011 / Civil Engineering		
Active registration number / state / expiration date			Professional Engineer: 41969 / LA / 03/31/2028		
Year registered		2017	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Geotechnical 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).			
01/19 – 06/19		H.004396 Lapalco Blvd Movable Bridge over Harvey Canal, Jefferson Parish, Louisiana - Jefferson Parish DPW/LADOTD Geotechnical Engineer for 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. The 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.			
01/23 – Present		Replacement of the Park Avenue Viaduct Design-Build, New York, NY – Metropolitan Transit Authority Lead Geotechnical Engineer providing design-build services for the full replacement of the Park Avenue Viaduct between the north side of East 115th Street and the south side of East 123rd Street along Park Avenue. The section of the Viaduct to be replaced within the scope of this project is an elevated steel structure, between Bent 21 and Bent 53, carrying four, third rail powered tracks. Approximately 750 trains per day travel the Harlem, Hudson, and New Haven lines on the Viaduct to enter Grand Central Terminal servicing hundreds of thousands of customers per day. Mr. Guirguis is responsible for the foundation design that comprised of 16-inch diameter micropiles socketed into bedrock constructed below the existing Park Avenue Viaduct structure while in service in low overhead room conditions. Also responsible for the subsurface exploration program, load testing program, preparation of foundation design reports, and CSS submittals and field work falling under the geotechnical discipline.			
05/22 – 12/22		New Bridge Superstructure Replacement, Woolwich-Wiscasset, Maine – Maine DOT Geotechnical Engineer providing all geotechnical engineering design and construction services required for the rehabilitation of this 33-foot single-span bridge. The existing bridge carries two lanes, with a timber deck and timber railing on steel stringers. The existing integral abutments are comprised of concrete caps on steel piles and are to remain. The proposed is a single span multi-steel girder bridge with cast-in-place deck. Mr. Guirguis is responsible for analyzing the existing substructure, integral abutments, and pile foundation design.			
08/12 – 10/18		Harlem River Drive Viaduct over East 127th Street, New York, NY – New York City DOT Geotechnical Bridge Engineer responsible for providing field inspection of borings as well as rock corings and overseeing crosshole seismic testing. Assisted in preparing subsurface (boring) investigation, created final bore logs and subsurface profile, and developed geotechnical report. Geotechnical Engineer in charge of preliminary design and final design of pier foundations (drilled shafts). Also, responsible on all responses related to geotechnical Request for Information and submittals. Engineer in charge of reviewing and inspecting all drilled shaft load tests (O-Cell's), video inspection of rock socket and drilled shaft remediation. Provided field engineering support as required to resolve technical and construction issues. The Harlem River Drive project included the full replacement of the ten-span Harlem River Drive Viaduct over the entrance ramp at East 127th Street in the Borough of Manhattan.			

03/18 – 03/20	Promenade over FDR Drive from East 81st Street to East 90th Street, New York, NY – New York City DOT Lead Bridge Geotechnical Engineer for a project involving the rehabilitation or replacement of superstructure and substructure elements. The scope also includes protection or replacement/relocation of all utilities on the structure as well as protection or replacement/relocation of all electrical and mechanical systems within the project limits; landscape design; ADA compliance; and new pedestrian. Reconstruction and repair of structural elements required work from the top of the promenade deck within the park and from the southbound FDR Drive roadway level located beneath the promenade. Maintenance of vehicular, pedestrian, and bicycle traffic throughout construction was a critical concern. Constructability and staging guided the overall approach to the project.
04/22 – Present	Tuttle Road Bridge, Cumberland, Maine – Maine DOT Geotechnical Engineer providing all geotechnical engineering services required for the design of the replacement of this two-lane, nine span structure carrying Tuttle Road over I-295, Route 1, and a railroad track. Project scope includes a Preliminary Design Report, preliminary design, final design, and construction support services. Mr. Guirguis is responsible for embankment design with lightweight fill, pile foundation design, and inspection of borings.
08/21 – Present	Northfield Bridge Replacement, Northfield, VT – Vermont Agency of Transportation Lead Geotechnical Engineer for this three-span bridge replacement project. The proposed structure is a single span multi-girder integral abutment bridge located in downtown Northfield. The bridge replacement will take place during a 12-week traffic closure and utilizes ABC methods to accelerate construction. Mr. Guirguis was responsible for administering the subsurface exploration program, preparing the lab assignment, developing the geotechnical design report that included characterizing the subsurface conditions, evaluating proposed foundation alternatives, presenting a foundation recommendation and discussing construction considerations. The foundation evaluation for the proposed integral abutments comprised of a single pile analysis using L-Pile following VTrans design guidelines and axial geotechnical pile capacity analysis.
10/19 – 10/21	Design-Build for Access Improvements to the Hunts Point Interstate, Contract 1, Bronx, NY – New York State DOT Geotechnical Engineer involved in reviewing Geotechnical related design and CSS submittals. This is a \$1.7 billion, 3-phase design-build project to improve access between the Hunts Point Peninsula and the Sheridan and Bruckner Expressways for vehicular traffic and to address structural and operations deficiencies related to the existing infrastructure. The project includes 12 bridges and viaduct structures, and the site covers more than 1.5 miles of existing infrastructure including highways, expressways, services roads and city streets, parkland, and pedestrian accessways.
04/15 – 10/18	Structural Rehabilitation of Four Overhead Bridges, Mount Vernon, NY – Metro-North Railroad Geotechnical Engineer for a project involving the superstructure replacement and substructure rehabilitation of the following four overhead vehicular bridges spanning the Metro-North tracks in the City of Mount Vernon, New York: 6th Avenue Bridge (NH 13.51): a 61-foot span steel through girder bridge; 10th Avenue Bridge (NH 13.31): a 106-foot span steel deck truss bridge; 14th Avenue Bridge (NH 13.10): a 92-foot span steel pony truss bridge; Fulton Avenue Bridge (NH 14.07): a 159-foot span through truss bridge. Mr. Guirguis is responsible for the subsurface (boring) investigation and developing a geotechnical report for each bridge. He is in charge for designing rock anchors to resist current seismic loads and provided an assessment of the existing foundation's ability to support new bridge loads.

16. Staff Experience:

	Firm employed by Hardesty & Hanover			
	Name	Victor Minerva, AICP, PP	Years of relevant experience with this employer	6
	Title	Environmental Manager	Years of relevant experience with other employer(s)	28
	Degree(s) / Years / Specialization		MS / 2000 / Urban Planning BS / 1988 / Geography	
Active registration number / state / expiration date			33LI00580100 / NJ / 5/31/2026	
Year registered	2004	Discipline	Environmental	
Contract role(s) / brief description of responsibilities			Environmental 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).			
04/21 – 01/23	Bronx River Parkway Bridge Replacement, Site B, Bronx, NY – New York State DOT Principal Planner responsible revising the 2008 FDR report, ensuring conformance with new NYSDOT design report standards as well as NEPA/SEQRA requirements for a project to replace three bridges on the Bronx River Parkway, and create a new shared use path. Updated the environmental sections, which included traffic, air quality, noise, Section 106, endangered and threatened species, and Section 4(f). Developed a public engagement plan for environmental justice communities.			
12/21 – Present	Cross Bronx Expressway Corridor Improvements, Bronx, NY – New York State DOT Principal Planner responsible for preparing the DDR/FDR report documenting the environmental impacts (including an environmental assessment in accordance with NEPA/SEQRA standard) for the replacement/rehabilitation of five bridges, construction of a new ramp and the development of a new multi modal connector roadway. Specific responsibilities include preparation of the preliminary and final design reports, updating the environmental assessment which involves sections on endangered and threatened species, Section 106, Section 4(f), and Section 6(f), as well as consultant coordination, and leading the public involvement process which involves an EJ assessment and targeted outreach to the EJ community.			
10/20 – 10/23	Highway Safety Investigations, Various Locations, Nassau, and Suffolk Counties – New York State DOT Principal Planner responsible for preparing the DDR/FDR report documenting the environmental impacts (including an environmental assessment in accordance with NEPA/SEQRA standards) at two locations within Nassau and Suffolk Counties. The project involves improving traffic safety by introducing intersection improvements at the two locations. Specific responsibilities included preparation of the preliminary and final design reports as well as overseeing the development of a Public Involvement Plan and presentation materials that was used for an EDPL meeting (which was conducted in-person as well as virtually).			
03/20 – 06/23	Hempstead Hub Review, Hempstead, NY - Town of Hempstead, NY Project Manager responsible for overseeing the review of an expanded environmental assessment related to the development of a conceptual master plan for the Nassau Hub Innovation District. Work includes reviewing all the chapters of the master plan with a focus on traffic, parking, and zoning requirements, and the preparation of a negative declaration.			
06/20 – 04/22	Storm Drainage Improvement Project, Various Locations, Suffolk County – New York State DOT Principal Planner responsible for preparing the DDR/FDR report documenting the environmental impacts (including an environmental assessment in accord with NEPA/SEQRA standards) at six locations within Suffolk County. The project involved improving debilitated drainage systems at the six locations to eliminate periodic localized flooding. Specific responsibilities included preparation of the scoping, preliminary, and final reports, as well as consultant coordination, and leading the public involvement process.			

10/23 – Present	NYSDOT Misc, Term Agreement for Railroad Design Services, Statewide, New York – NYSDOT Capital Rail Projects Group Project Manager. As a first assignment, reviewed existing Categorical Exclusion (CE) and Section 106 documentation that was developed by NYSDOT/Amtrak for the Rhinecliff Station Platform and Interlocking Project, and comments from the Federal Railroad Administration (FRA) on both documents. Reviewed 60% plan set and all related technical studies (drainage, noise and vibration analysis, hazardous materials, wetlands, Section 7 ESA, and floodplain mapping.) and then updated the CE and Section 106 documentation for resubmittal to FRA. Attended weekly/biweekly coordination meetings with NYSDOT, Amtrak, and FRA. Assisted NYSDOT with developing an updated schedule to advance the project to final design.
11/18 – 12/19	East Norwalk TOD Study, Norwalk, CT – Harriman Associates Senior Transportation Planner responsible for analyzing existing transportation conditions (including traffic, transit, and bicycle/pedestrian activity) around the East Norwalk Train Station and then developing recommendations to improve mobility in support of a range of TOD alternatives. Subconsultant to Harriman Associates.
02/19 – 12/19	Mamaroneck Comprehensive Plan Update, Mamaroneck, NY – Village of Mamaroneck, NY Project Director responsible for overseeing an update of the Village's 2012 Comprehensive Plan. The focus of the update was on sustainability, residential zoning, and any resulting changes to SEQRA. The plan included recent planning initiatives, an update of demographic data, and an increased focus on sustainability and resiliency.
05/14 – 02/16	W.A.T.E.R. NEPA, Waterbury, CT – City of Waterbury, CT Deputy Project Manager responsible for overseeing the preparation of a Categorical Exclusion with Documentation for the Waterbury Active Transportation Resurgence Project, as part of the NEPA process which was required so that the project could move into final design. The project which was funded through a Federal Tiger Grant involved constructing an integrated system of “active transportation” improvements including a reconstructed and expanded network of local streets, and a comprehensive array of pedestrian/bicycle safety improvements and linkages, all of which was designed to better connect downtown to the historic McKim, Mead & White designed train station and riverfront. NV5's environmental analyses included identifying existing conditions, potential impacts, and mitigation strategies related to archeological resources, air quality, noise, hazardous materials, traffic, etc.
11/07 – 01/09	Expansion of the Southeast Parking Lot, Southeast, NY – Metro-North Railroad Project Manager responsible for developing a conceptual parking plan for Southeast Station in Westchester County, NY. The plan involved a site assessment, the development of conceptual alternatives including a parking garage, and capital cost estimates.
03/17 – 05/19	Downtown Hicksville Complete Streets, Hicksville, NY – New York State DOT Principal Planner responsible for assisting in improving the accessibility and safety for all modes of transportation, including motorists, pedestrians, transit riders, and cyclists in downtown Hicksville including the area around the Hicksville LIRR train station. With respect to public outreach responsibilities included lead the development of a project website to keep local residents, commuters, businesses, and other stakeholders informed about the project and facilitating public workshops that included an open house format as well as a more formal public presentation. The website featured “Wikimapping,” through which the public identified precarious intersections and site-specific opportunities to improve safety.
01/21 – 8/22	On-Call Planning Advisory Services, Lynbrook, NY – Village of Lynbrook, NY Project Manager responsible for providing on-call planning advisory services to the Village of Lynbrook, NY. Specific services include reviewing development applications with respect to zoning, landscape, traffic circulation, and lighting, as well as more formal traffic impact analyses.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover		
	Name		J. Lee Adams, PE	Years of relevant experience with this employer	17
	Title		Water Resources 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 Lead		
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, in accordance with NJDOT and NJDEP requirements. Multistage construction and extensive utility relocation was 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 in accordance with 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 in accordance 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 in excess of the WQ event. Developed Storm Water Management Plan per the Storm Water Management Regulations. Work required experience in NJDEP Flood Hazard Control Act and Storm Water Management Regulations.			

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.

16. Staff Experience:

	Firm employed by		Hardesty & Hanover		
	Name		John Witthohn, PE	Years of relevant experience with this employer	9
	Title		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, in accordance with 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.

16. Staff Experience:

	Firm employed by Hardesty & Hanover		
	Name	Lauren Peytavin, EI	Years of relevant experience with this employer
	Title	Water Resources Designer	Years of relevant experience with other employer(s)
	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 - U.S. Army Corps of Engineers 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.

16. Staff Experience:

	Firm employed by	Terracon Consultants, Inc.		
	Name	Lynne Roussel, PE	Years of relevant experience with this employer	21
	Title	Principal Contract Manager	Years of relevant experience with other employer(s)	0
	Degree(s) / Years / Specialization	MS / 2005 / Geotechnical Engineering BS / 2003 / Civil Engineering		
Active registration number / state / expiration date		PE 0035152 / Louisiana / 03/31/2028		
Year registered	2009	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		Geotechnical 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 years of experience specified in the applicable MPR(s).			
12/20 – Present	IDIQ Contracts for Professional Geotechnical Services Statewide Contract No. 4400019014, Statewide, LA. DOTD. Contract Manager and Project Reviewer. Managed the retainer contract for services to perform geotechnical exploration and engineering. The contract value is \$2.5 Million.			
03/25-Present	H.012059 - LA19 - Bridges near Zachary – Zachary, LADOTD. Project Reviewer. The project involves replacing existing bridge structures along LA Highway 19 near Zachary, Louisiana, with new slab-span bridges and/or box culverts to improve the crossing. Terracon is providing geotechnical engineering services, including subsurface soil exploration, laboratory testing, engineering analysis, and preparation of geotechnical recommendations addressing soil conditions, groundwater, and seismic site classification. Lynne is performing quality review on engineering analyses and reporting.			
01/24-Present	H.015447 – IJA Off-System Bridge Program – Simmesport, LA. DOTD. Project Reviewer and Contract Manager. Terracon is conducting the geotechnical investigation. The scope includes a 122-foot soil boring using flight auger and mud rotary drilling, with soil samples being collected at regular intervals. Laboratory tests will assess moisture content, Atterberg limits, dry unit weight, grain size, and undrained unconsolidated compression. The site was classified as Seismic Site Class D, with surface geology identified as Holocene and Pleistocene alluvial deposits. Terracon will provide recommendations for earthwork, foundations, floor slabs, and pavements based on the findings.			
07/23-Present	H.012048 - Castor Creek and Relief Bridges – Tullos, LA. DOTD. Project Reviewer and Contract Manager. Terracon is providing geotechnical services focusing on subsurface soil and groundwater conditions and seismic site classification per IBC standards. The scope included 16 soil borings to depths of 60–110 feet using rotary drilling, with samples collected via Shelby tubes and SPT methods. Groundwater levels were monitored during drilling. Laboratory testing assessed moisture content, plasticity, particle-size distribution, density, and shear strength, following ASTM standards and USCS classification. Results were documented in detailed boring logs and graphs.			
10/22-02/25	H.003931.5-2 - I-10 - Calcasieu River Bridge Additional Borings – Lake Charles, LA. DOTD. Project Reviewer and Contract Manager. Terracon conducted subsurface exploration and laboratory testing to support the replacement of the I-10 Calcasieu River bridge in Lake Charles, LA. Their work included 37 deep bridge borings—some over water and within a navigable channel—and 39 shallow roadway borings. They later advanced 17 additional borings using marsh buggy and ATV-mounted drill rigs along various segments of the I-10 corridor. Soil samples were collected using standard methods, and groundwater levels were monitored during drilling. In the lab, Terracon performed tests for moisture content, plasticity, particle-size distribution, density, and triaxial compression strength, all in accordance with ASTM and LDOTD standards.			

09/22-10/25	H.002868 I-49 Frontage Road Bridges PDA Testing – Lafayette, LA, DOTD Project Reviewer and Contract Manager. Terracon provided geotechnical design of the substructure of two bridges and global stability and settlement analysis for several MSE walls to be constructed as part of this design build project. Terracon developed nominal capacity and resistance factors for pile foundations for the bridge substructures and developed driving criteria using WEAP analysis for the proposed pile driving equipment. Dynamic Pile Testing was performed during construction to verify pile capacities.
06/19 – 3/20	H.004100 I-10 Widening, Baton Rouge, LADOTD Senior Engineer. Supervised the subsurface evaluation and lab testing. All testing was performed in accordance with LADOTD sampling and guidelines. The team worked safely around traffic and lane closures on the interstate near College Drive.
05/18–Present	H.011235.5: I-49 South @ Verot School Road US 90, Lafayette, LADOTD Project Manager. Overseeing the design of the substructure of two bridges and global stability and settlement for several MSE walls to be constructed as part of this design build project. Terracon developed nominal capacity and resistance factors for pile foundations for the bridge substructures and developed driving criteria using WEAP analysis for the proposed pile driving equipment.
05/18 – 11/20	H.005967: Nelson Road Extension and Bridge, Lake Charles, LADOTD Project Manager. Managed the subsurface evaluation and geotechnical engineering design for the Nelson Road Extension and Bridge Project. Terracon completed the subsurface exploration including water borings in Contraband Bayou and provided 90% design of the substructure for the bridge over Contraband Bayou. Terracon performed settlement analysis for the planned embankment approaches. The scope also included design support for impact dolphins to be constructed in front of the bridge in the Bayou to protect the bridge superstructure from impact of possible runaway ocean-going ships from the nearby Port of Lake Charles facility.
07/16 – 07/21	Louisiana Department of Transportation Geotechnical Retainer Contract No. 4400006191, LADOTD Contract Manager and Project Reviewer. Managed the retainer contract for services to perform geotechnical exploration and engineering. The contract value is \$4 Million.
10/16 – 01/18	H.002238 Robinson Canal Bridge, Terrebonne Parish, LADOTD Project Manager. Provided geotechnical engineering services for the project that included field exploration, laboratory testing and geotechnical engineering for the bridge. Pile capacities were developed for the bridge bents.
01/12 – 01/13	H.009187.5 – 23rd Street Bridge over Canal No. 17, Jefferson Parish, LADOTD Project Engineer. Provided geotechnical engineering for the subsurface evaluation and engineering design of this DOTD Off System Bridge project. The bridge at 23rd Street over Canal No. 17 was replaced. DOTD boring logs and LRFD Pile Calculations were provided to the design engineer.
01/10 – 03/12	H.0051.21 - LA-1 to I-10 Connector, Port Allen, LADOTD Project Manager. Managed the design of a new connector between LA 1 and I-10 near the Intracoastal Canal in West Baton Rouge Parish, Louisiana. The project consisted of a bridge over the Intracoastal Canal, a flyover connector to LA 1 and associated roadway. Soil borings and Cone Penetrometer Test (CPT) probes associated with the bridges and roadway were completed. All calculations were consistent with DOTD pavement design standards. Settlement analysis was performed for the approach embankments. Pile capacities were also provided for the elevated structure.
09/08 – 11/08	Interstate 12 Widening - East Baton Rouge and Livingston Parishes, LA Project Manager. Managed the interstate highway improvement. Terracon performed drilling and laboratory activities for the project. The project consisted of the widening of Interstate 12 to six lanes from O'Neal Lane eastward in both East Baton Rouge and Livingston Parishes. The project needed to be performed under a compressed time schedule of 30 days for DOTD to release a Design-Build procurement package. She worked with the Terracon team to make sure the schedule was met by using multiple drill rigs to complete the field work. The work completed by Terracon has received high marks from the design-build team.

16. Staff Experience:

	Firm employed by		Terracon Consultants, Inc.	
	Name		Stephen E. Greaber, PE	Years of relevant experience with this employer
	Title		Principal Quality Control	Years of relevant experience with other employer(s)
	Degree(s) / Years / Specialization		BS / 1989 / Civil Engineering	
Active registration number / state / expiration date			PE 0026107 / Louisiana / 09/30/2027	
Year registered	1995	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Geotechnical 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 years of experience specified in the applicable MPR(s).			
07/23-Present	H.012048 - Castor Creek and Relief Bridges – Tullos, LA. DOTD. Project Reviewer and Contract Manager. Terracon is providing geotechnical services focusing on subsurface soil and groundwater conditions and seismic site classification per IBC standards. The scope included 16 soil borings to depths of 60–110 feet using rotary drilling, with samples collected via Shelby tubes and SPT methods. Groundwater levels were monitored during drilling. Laboratory testing assessed moisture content, plasticity, particle-size distribution, density, and shear strength, following ASTM standards and USCS classification. Results were documented in detailed boring logs and graphs.			
10/22-02/25	H.003931.5-2 - I-10 - Calcasieu River Bridge Additional Borings – Lake Charles, LA. DOTD. Senior Geotechnical Engineer. Terracon conducted subsurface exploration and laboratory testing to support the replacement of the I-10 Calcasieu River bridge in Lake Charles, LA. Their work included 37 deep bridge borings—some over water and within a navigable channel—and 39 shallow roadway borings. They later advanced 17 additional borings using marsh buggy and ATV-mounted drill rigs along various segments of the I-10 corridor. Soil samples were collected using standard methods, and groundwater levels were monitored during drilling. In the lab, Terracon performed tests for moisture content, plasticity, particle-size distribution, density, and triaxial compression strength, all in accordance with ASTM and LDOTD standards.			
07/18 – 10/21	H.011235.5 - I-49 South @ Verot School Road US 90 - Lafayette, LA. DOTD. Lead Design Engineer for the subsurface evaluation and geotechnical engineering design for the US 90 (I-49 South) Design Build Project. Terracon provided the design of the substructure of two bridges and global stability and settlement for several MSE walls to be constructed as part of this design build project. Terracon developed nominal capacity and resistance factors for pile foundations for the bridge substructures and developed driving criteria using WEAP analysis for the proposed pile driving equipment. Dynamic Pile Testing was performed during construction to verify pile capacities. Terracon reviewed the CAPWAP results and provided recommendations for adjustment of the resistance factors to accommodate slight variations in nominal capacity obtained at each bent.			
05/18 – 01/21	H.005967: Nelson Road Extension and Bridge - Lake Charles, LA. DOTD. Senior Geotechnical Engineer. Reviewed the subsurface evaluation and geotechnical engineering design for the Nelson Road Extension and Bridge Project. Terracon completed the subsurface exploration that included water borings in Contraband Bayou and has provided 90% design of the substructure for the bridge over Contraband Bayou and performed settlement analysis for the planned embankment approaches. The scope also included design support for impact dolphins to be constructed in front of the bridge in the Bayou to protect the bridge superstructure from impact of possible runaway ocean-going ships from the nearby Port of Lake Charles facility.			

06/17 – 10/18	H.010006: Bayou Petit Caillou Bridge Improvements - Chauvin, LA. DOTD. Senior Geotechnical Engineer. Provided senior review the subsurface evaluation and substructure design for upgrades to the existing bridge. The services were performed for Huval and Associates through their Bridge Preservation Contract and included providing pile recommendations for support of a new bridge lift operators building and supports for traffic barriers and fender replacements.
02/14 – 02/17	H.010620: US 90 (I-49 South) Design Build - Lafayette Parish, LA. C.H. Fenstermaker. Senior Geotechnical Engineer. Provided senior review for the subsurface evaluation and geotechnical engineering design for the US 90 (I-49 South) Design Build Project. Terracon provided the design of the substructure of two bridges and global stability and settlement for several MSE walls to be constructed as part of this design build project. Terracon developed nominal capacity and resistance factors for pile foundations for the bridge substructures and developed driving criteria using WEAP analysis for the proposed pile driving equipment. Dynamic Pile Testing was performed during construction to verify pile capacities. Terracon reviewed the CAPWAP results and provided recommendations for adjustment of the resistance factors to accommodate slight variations in nominal capacity obtained at each bent.
01/15 – 02/16	H.010719: US 90 Ramp Improvement, Orleans Parish, LA. DOTD. Senior Geotechnical Engineer. Provided senior review of the subsurface evaluation and substructure design of this new bridge and ramp improvement project at US 90 and South Claiborne Ave. The entrance ramp to US 90 was elevated to improve traffic flow. DOTD boring logs and LRFD Pile Resistance Calculations were provided to the design engineer.
2010 - 2013	SP No. 450-10-0159 - Interstate 10 Widening, Siegen to Highland - Baton Rouge, LA. DOTD. Project Manager. Managed the widening of I-10 from two lanes in each direction to three lanes in each direction. Dual existing bridges over Wards Creek Diversion will be widened, and the existing 850-foot-long dual bridges over the Kansas City Railroad and La Crete Drive were completely replaced with new three-lane bridges with 12-foot shoulders and increased clearances to allow the railroad to add a parallel track in the future.
11/10 – 08/12	LA-1 to I-10 Connector 30% Design - Port Allen, LA. Volkert/DOTD. Supervising Geotechnical Engineer. Supervised 30% design plans for a proposed new connector between I-10 and LA-1 in West Baton Rouge Parish. The extension included two bridges and two miles of new roadway. Bridges over an existing railroad and the Intracoastal Canal were included. An evaluation of a possible retained earth embankment was included.
09/08 – 11/08	Interstate 12 Widening - East Baton Rouge and Livingston Parishes, LA Senior Engineer. Provided senior oversight for this major Interstate highway improvement. Terracon performed drilling and laboratory activities for the project. The project consisted of the widening of Interstate 12 to six lanes from O'Neal Lane eastward in both East Baton Rouge and Livingston Parishes. The project needed to be performed under a compressed time schedule of 30 days for DOTD to release a Design-Build procurement package. He worked with Terracon team to make sure the schedule was met by using multiple drill rigs to complete the field work. The work completed by Terracon has received high marks from the design-build team.
12/07 – 07/12	Louisiana DOTD Off-System Bridge Program - Statewide in LA Engineering Support. Provided engineering support for multiple off-system bridge projects. Terracon provided geotechnical drilling, laboratory testing, and engineering support for several bridges designated for replacement under the Louisiana Department of Transportation and Development Off-System Bridge Program. For each bridge, Terracon served as a sub-consultant for a civil engineering firm selected by Louisiana DOTD to design the new bridge. In each case, the project civil engineer provided all additional engineering and land surveying required to perform topographic surveys and hydraulic studies and prepared the preliminary and final roadway and bridge plans. Terracon completed geotechnical investigations for bridges throughout Louisiana and in a variety of geologic settings.

16. Staff Experience:

	Firm employed by	Terracon Consultants, Inc.		
	Name	Ryan E. Poindexter, PE	Years of relevant experience with this employer	9
	Title	Geotechnical Project Engineer	Years of relevant experience with other employer(s)	0
	Degree(s) / Years / Specialization	BS / 2013 / Civil Engineering		
Active registration number/state / expiration date		PE 0046285 / LA / 03/31/2026		
Year registered	2021	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		Geotechnical 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).			
03/25-Present	H.012059 - LA19 - Bridges near Zachary – Zachary, LADOTD. Project Manager for this project. The project involves replacing existing bridge structures along LA Highway 19 near Zachary, Louisiana, with new slab-span bridges and/or box culverts to improve the crossing. Terracon is providing geotechnical engineering services, including subsurface soil exploration, laboratory testing, engineering analysis, and preparation of geotechnical recommendations addressing soil conditions, groundwater, and seismic site classification.			
02/25-Present	H.014990 - S. Tiger Bend Road & E. Achord Road – Baton Rouge, LA. DOTD. Project Manager for this project. Terracon is providing geotechnical engineering services that include subsurface exploration, laboratory testing, and engineering analysis to support the design and construction for the proposed bridge replacement.			
07/24-Present	H.014984 - Libuse Cutoff Road over Flagon Bayou – Pineville, LA. DOTD. Project Manager for this project. Terracon is providing subsurface exploration, laboratory testing, and geotechnical data analysis to support the design of a replacement bridge. Scope includes soil and groundwater testing, along with seismic site classification, based on two borings advanced to depths of 85 and 70 feet.			
07/23-Present	H.015338 - Off-System Bridge Replacement – Cameron, LA. DOTD. Project Manager for this project. Terracon is providing geotechnical engineering services, including site exploration, analysis, and recommendations for earthwork, foundation design, and construction for infrastructure projects.			
07/23-Present	H.012537 - LA154, LA157 - Red Chute BYU & Flat RVR BRS – Elm Grove, LA. DOTD. Project Manager for this project. Terracon is providing geotechnical engineering services that include field exploration, laboratory testing, and engineering analysis to evaluate subsurface conditions and develop design recommendations for foundations, pavements, and earthwork.			
07/23-Present	H.012048 - Castor Creek and Relief Bridges – Tullos, LA. DOTD. Project Manager for this project. Ryan is responsible for overseeing all geotechnical investigation activities. This includes coordinating the advancement of 16 soil borings to depths of 60 to 110 feet using rotary drilling methods, ensuring proper sampling techniques such as Shelby tubes and Standard Penetration Tests (SPT), and monitoring groundwater levels during drilling. Ryan also managed laboratory testing to evaluate soil properties—moisture content, plasticity, particle-size distribution, density, and shear strength—ensuring compliance with ASTM standards and LDOTD protocols. Additionally, Ryan ensured accurate classification of soils using the Unified Soil Classification System (USCS) and the preparation of detailed documentation, including boring logs and graphs, while maintaining alignment with project goals and regulatory requirements.			

01/24 - Present	H.015447 – IJJA Off-System Bridge Program – Simmesport, LA. DOTD. Project Manager for this project. Ryan is responsible for overseeing all aspects of the geotechnical investigation. This includes coordinating the drilling of a 122-foot soil boring using flight auger and mud rotary techniques, ensuring proper sample collection at regular intervals, and managing laboratory testing for moisture content, Atterberg limits, dry unit weight, grain size analysis, and undrained unconsolidated compression. He will also ensure accurate geological characterization and seismic site classification, and guide the development of engineering recommendations for earthwork, foundations, floor slabs, and pavements, all while maintaining compliance with project specifications and regulatory standards.
10/22-02/25	H.003931.5-2 - I-10- Calcasieu River Bridge Additional Borings – Lake Charles, LA. DOTD. Project Manager. Ryan coordinated all phases of subsurface exploration and laboratory testing. This includes managing the execution of 37 deep bridge borings—some over water and within a navigable channel—and 39 shallow roadway borings, as well as an additional 17 test borings using specialized drill rigs along various segments of the I-10 corridor. Ryan also ensured proper sampling methods were used, such as thin-walled tube and split-barrel techniques, and that groundwater levels are accurately recorded. In the lab, Ryan oversaw testing for moisture content, plasticity, particle-size distribution, density, and triaxial compression strength, ensuring all procedures comply with ASTM standards and LDOTD protocols.
09/22-10/25	H.002868 - I-49 Frontage Road Bridges PDA Testing – Lafayette, LA. DOTD. Project Manager. Ryan oversaw this design-build project and was responsible for coordinating geotechnical engineering efforts related to bridge substructures and MSE (mechanically stabilized earth) walls. This included managing the development of pile foundation designs, such as determining nominal capacities and resistance factors, and overseeing WEAP (Wave Equation Analysis of Piles) analysis to establish driving criteria for the proposed pile driving equipment. During construction, Ryan ensured that dynamic pile testing was conducted and that CAPWAP (Case Pile Wave Analysis Program) results were reviewed to adjust resistance factors or pile lengths as needed. Additionally, Ryan supported DOTD during construction by evaluating settlement monitoring data for MSE walls, ensuring compliance with contract requirements, facilitating pile bent acceptance, and resolving non-conformance reports (NCRs).
05/20–01/21	H.005121 - LA-1 and LA-415 Connector – Port Allen, LA. DOTD. Project Manager for this project. Coordinated field work, access, and initial lab testing prior to project being suspended.
05/18–Present	H.011235.5 - I-49 South @ Verot School Road US 90 - Lafayette, LA. DOTD. Staff Engineer. Reviewing field logs, samples, and data. Assisted in coordinating lab testing.
06/18 – 06/21	H.005967.5: - Nelson Rd. Extension and Bridges - Calcasieu Parish, LA. DOTD. Assistant to project manager. The project consisted of providing a site characterization report for the new road and bridge, pile design, and pavement design recommendation. The geotechnical field exploration consisted of soil borings adjacent to the existing roadway, borings in undeveloped land adjacent to the Port of Lake Charles, and borings in Bayou Contraband. Field exploration was completed safely over the course of multiple weeks with up to four land and water drill crews on site at once. Laboratory testing included consolidation testing, compressive strength testing, and testing for classifying of soil samples collected in accordance with LADOTD standards. Terracon provided recommendations for precast concrete piles, pavement design, and site preparation.

16. Staff Experience:

	Firm employed by	Terracon Consultants, Inc.		
	Name	Matthew Minton	Years of relevant experience with this employer	24
	Title	Supervisor – Other (Laboratory Manager)	Years of relevant experience with other employer(s)	0
	Degree(s) / Years / Specialization	BS / 2001 / Industrial Technology		
Active registration number / state / expiration date		N/A		
Year registered	N/A	Discipline	N/A	
Contract role(s) / brief description of responsibilities		Geotechnical Laboratory Manager – 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).			
03/25-Present	H.012059 - LA19 - Bridges near Zachary – Zachary, LADOTD. Serving as lab manager for geotechnical laboratory testing for this project.			
11/24-Present	H.014988 - Carey Road over Blackwater Bayou – Baker, LA. DOTD. Serving as lab manager for geotechnical laboratory testing for this project.			
07/24-Present	H.014984 - Libuse Cutoff Road over Flagon Bayou – Pineville, LA. DOTD. Serving as lab manager for geotechnical laboratory testing for this project.			
07/23-Present	H.015338 - Off-System Bridge Replacement – Cameron, LA. DOTD. Serving as lab manager for geotechnical laboratory testing for this project.			
07/23-Present	H.012537 - LA154, LA157 - Red Chute BYU & Flat RVR BRS – Elm Grove, LA. DOTD. Serving as lab manager for geotechnical laboratory testing for this project.			
07/23-Present	H.012048 - Castor Creek and Relief Bridges – Tullos, LA. DOTD. Serving as lab manager for geotechnical laboratory testing for this project.			
01/24-Present	H.015447 – IJA Off-System Bridge Program – Simmesport, LA. DOTD. Serving as lab manager for geotechnical laboratory testing for this project.			
10/22-02/25	H.003931.5-2 - I-10 - Calcasieu River Bridge Additional Borings – Lake Charles, LA. DOTD. Served as lab manager for geotechnical laboratory testing for this project.			
07/21-04/22	H.003931 - I-10 Lake Charles – Lake Charles, LA. DOTD. Served as lab manager for geotechnical laboratory testing for this project.			
12/21-11/23	H.012033 - Cross Bayou and Caney Bayou – Ouachita Parish, LA. DOTD. Served as lab manager for geotechnical laboratory testing for this project.			
09/20-04/24	H.000385.5 - US 190- LA 415 & RR OVERPASS REPL – Port Allen, LA. DOTD. Served as lab manager for geotechnical laboratory testing for this project.			
05/20-03/24	H.005121 - LA-1 and LA-415 Connector – Port Allen, LA. DOTD. Served as lab manager for geotechnical laboratory testing for this project.			

16. Staff Experience:

	Firm employed by		Terracon Consultants, Inc.	
	Name		Laci Nguyen	Years of relevant experience with this employer
	Title		Biologist/Wetlands	Years of relevant experience with other employer(s)
	Degree(s) / Years / Specialization		BS / 2017 / Renewable Natural Resources and Management, Concentration in Wildlife Ecology	
Active registration number / state / expiration date			N/A	
Year registered	N/A	Discipline	N/A	
Contract role(s) / brief description of responsibilities			Biologist/Wetlands	
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).			
10/25 - Present	Wetland Delineation, Permit Matrix, and T&E Assessment - Richland Parish, LA Staff Scientist. Responsibilities include the collection of data points involving soil, vegetation, and hydrological characterization, the demarking and GPS tracking of wetland and stream boundaries, identification of Waters of the United States on site, and Jurisdictional Determination Requests (JDRs) on a confidential 30-acre project site.			
12/25 - Present	Proposed Solar Farm, Wetland Delineation, Permit Matrix, and T&E Assessment - Stockton, AL Staff Scientist. Responsibilities include the collection of data points involving soil, vegetation, and hydrological characterization, the demarking and GPS tracking of wetland and stream boundaries, identification of Waters of the United States on site, and Jurisdictional Determination Requests (JDRs) for a proposed 4,500-acre solar farm.			
02/17 – 12/22	The Nature Conservancy (TNC) – Lake Calcasieu Oyster Reef & Shoreline Protection, Phases I–III - Cameron Parish, LA Biologist. Primary field and operational lead for a multi-phase marine habitat restoration project within the Sabine National Wildlife Refuge focused on restoring oyster reef habitat and stabilizing coastal marsh systems along Lake Calcasieu. Ms. Nguyen led a field crew of up to 12 personnel during the construction, assembly, and deployment of more than 2,000 limestone-filled gabion baskets, coordinating vessel operations, material staging, reef alignment, and construction sequencing. Laci maintained authority over daily site safety decisions, including weather limits, water conditions, and operational controls. She conducted daily safety meetings and ensured all airboat captains clearly understood assignments, navigation routes, loading responsibilities, and communication protocols prior to deployment. Ms. Nguyen applied ecological knowledge of oyster recruitment, settlement, growth stages, and habitat requirements to guide reef placement strategy. She studied and documented oyster life-cycle dynamics to support long-term restoration success and adaptive management. Ms. Nguyen prepared technical documentation, supported reporting, and served as a primary client communication liaison throughout project execution.			
02/23 – 12/23	Fort Sill Biological Assessment – Threatened, Endangered & Proposed Species - Fort Sill, OK Biologist. Authored a biological assessment evaluating threatened, endangered, and proposed species. Ms. Nguyen conducted species-specific research, habitat evaluations, and field observations for the tri-colored bat and monarch butterfly. She assessed critical habitat features, food sources, and potential project impacts. She documented invasive species and evaluated habitat quality. Ms. Nguyen prepared the complete biological assessment report and coordinated findings with clients.			

04/21 – 10/23	HWA / USACE Vicksburg District – Wetland Delineation - Vicksburg National Military Park, MS Biologist. Conducted wetland and waters delineations in accordance with USACE and NPS protocols. Ms. Nguyen identified hydric soils, hydrophytic vegetation, hydrology indicators, wetland boundaries, and ordinary high-water marks (OHWM). She prepared defensible delineation documentation and technical reporting.
06/21 – 08/24	USCAE Savannah District - Fort Gordon, Augusta, GA Biologist. Performed silvicultural and vegetation management in support of endangered red-cockaded woodpecker (<i>Leuconotopicus borealis</i>) habitat restoration. Ms. Nguyen applied species-specific habitat criteria to identify and protect cavity trees while timber marking and thinning competing longleaf pines to improve stand structure and ecosystem health. She prepared technical documentation and coordinated findings with USACE.
02/21 – 10/21	USACE Louisville District – American Chestnut Experimental Plot Survey - Blue Grass Army Depot, Richmond, KY Biologist. Evaluated endangered American chestnut (<i>Castanea dentata</i>) experimental plot plantings in support of species recovery and INRMP objectives. Ms. Nguyen assessed tree survival, height, diameter, leaf area, soil conditions, compaction, and competition from invasive and native species. She identified high-performing and disease-resistant individuals and collected fruits and seeds for transfer to the University of Kentucky for propagation and germination research, supporting conservation genetics and restoration programs. Ms. Nguyen interpreted ecological and silvicultural data, evaluated restoration success, and prepared the technical report with management recommendations for long-term species recovery. She coordinated findings with USACE project managers and installation personnel.

16. Staff Experience:

	Firm employed by Neel-Schaffer, Inc.				
	Name		Ellen Burke Howard, PE, PTOE, RSP ₁	Years of relevant experience with this employer	12
	Title		Project Manager	Years of relevant experience with other employer(s)	5
Degree(s) / Years / Specialization			BS / 2009 / Civil Engineering		
Active registration number / state / expiration date			Professional Engineer: 38207 / LA / 03/31/2028, PTOE 3735 / 08/01/2026, RSP No. 349 / 12-9-28 Traffic Engineering Analysis Process & Report Module 1, 2, & 3		
Year registered		2013	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			Traffic Lead – 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).			
03/23 – Present		LA 621: Realignment @ LA 73 (Ascension) (SPN. H.014366): Traffic Lead. This contract includes three separate Task Order projects which include traffic services, road design, preliminary and final plan development. As part of an IDIQ for road design projects, this project will widen LA 73 and realign LA 621 to near its existing intersection with LA 73 to relieve congestion and improve safety. This project includes the design of a multilane roundabout to provide connectivity for local roadways, traffic analysis, Transportation Management Plan, and 1 mile of mill and overlay for LA 621. Project engineer for Vissim modeling and traffic capacity analysis.			
04/23 - Present		Jimmie Davis Design Build: Project Engineer for traffic analysis, TMP, traffic signal design and safety analysis. This project will construct a new 4-lane bridge over the Red River, convert LA 511 from a five-lane roadway to a 4-lane median divided roadway with turn lanes, and construct full-access interchange connections with LA 511 at both Arthur Ray Teague Parkway and Clyde Fant Memorial Parkway and provide associated roadway drainage systems.			
09/25 - Present		LADOTD US 190: Wooddale to Livingston Parish P/L Study (H.016437.5): Traffic Lead. This project includes a corridor safety and operational study to establish an integrated, systematic, and performance-based approach to evaluate potential safety and operational improvements. The objective of this study is to analyze existing and future conditions along the corridor and identify potential treatments to improve safety, access management, and traffic operations. Tasks include collecting traffic and VRU data along the US 190 corridor. A detailed safety and traffic analysis will also be conducted to assist with determining potential improvements in the study area.			
09-25 - Present		US 61: Cardinal to Bert Corridor Study (H.014035.1): Traffic Lead. Comprehensive safety and operational analysis of approximately two miles of Airline Highway (US 61) in LaPlace to identify corridor deficiencies and evaluate feasible multimodal improvements, with a strong emphasis on pedestrian safety. Neel-Schaffer's scope includes detailed data collection, crash and traffic analysis, development and evaluation of improvement alternatives, conceptual design, benefit-cost analysis, and a phased implementation plan to guide future project development.			
02/23 - Present		US 61 at Victoria Drive Pedestrian Crossing, Baton Rouge, LA: Traffic Lead. Safety and Traffic study to identify pedestrian safety countermeasures at a high need location on US 61 in East Baton Rouge Parish. This study identified and analyzed a pedestrian crossing location with a high number of predicted pedestrian crashes and expected use consistent with planned regional multiuse paths along Airline Highway in North Baton Rouge.			
01/14 – 05/15		Safety Study, LA 49 (Williams Blvd.,) Kenner, LA – Stage 0 / Safety Study (S.P. No. 4400001583, T.O. No. H.010570): Traffic Engineer responsible for data collection, intersection operational signal analyses (Synchro), and Vissim modeling.			
07/21 – Present		US 190 Access Management Stage 0 and Traffic Study: Traffic Engineer responsible for initial and final data collection, existing safety analysis and existing and no-build traffic analysis, and the final traffic report.			
03/21 – Present		MOVEBR N. Sherwood Forest Extension (C-P Proj. No. 20-CP-HC-0014): Traffic Engineer responsible for initial and final data collection, existing safety analysis, existing and no build HCS analysis, alternatives HCS analysis, and final traffic report.			

09/20 – Present	MOVEBR College Drive Enhancements (C-P Proj. No. 19-EN-HC-0033): Traffic Engineer responsible for calibrated Vissim model, existing and no build traffic analysis and alternatives analysis.
09/21 – 07/22	MOVEBR Harding Boulevard at Interstate I-110 (C-P Proj. No. 20-CP-HC-0016): Traffic Engineer responsible for initial and final data collection, existing safety analysis and existing and no-build traffic analysis, Tier 1 alternative analysis, and final traffic report. The project involved a traffic study along Harding Boulevard between Rosewood Street and Merle Gustafson Drive including the I-110 Ramps in an effort to improve capacity.
08/20 – 10/21	I-10 & I-12 College Dr. Flyover Ramp Design-Build Project (S.P. H.013897.1): Traffic Engineer responsible for calibrated Vissim model and traffic analysis, and Interchange Modification Report
12/19 – 03/20	US 80: Intersection @ Bellevue Rd (S.P. No. 4400010504, T.O. No. H.014044.1): Traffic Engineer responsible for Initial and final data Collection, existing safety analysis, and Chapter 1 of Final Report and signalized intersection analysis.
02/15 – 12/17	US 51 (W University to I-55) Corridor Study (Contract No. 4400004064, T.O. No. H.011401.1): Traffic Engineer assisted with Corridor Operational Analyses. Includes analysis of eight roundabout geometry intersections.
10/17 – 01/18	Move Ascension - 6 Intersection Improvement Studies for Ascension Parish: Traffic Engineer responsible for data collection, intersection traffic operational analyses (Synchro, Vistro, and Sidra), safety analyses, warrant analysis, signal analysis, benefit/cost analyses, and traffic report preparation.
02/16 – 04/18	LA 22 (Rou Mar Nei Drive to 1st Street) (Contract No. 4400004064, T.O. No. H.011618.1): Traffic Engineer assisted with corridor traffic operational analyses including traffic signal analysis.
8/16 – 01/17	LA 433 at Carroll Road, Stage 0 Study considering construction of modern roundabout (St. Tammany P.O. S109476): Traffic Engineer responsible for intersection operational analyses (Synchro and Sidra), warrant analysis.
9/15 – 05/16	LA 19 Widening (LA 64 to Sunset Blvd.) - Stage 0 Study (S.P. No. 4400004012, T.O. No. H.011695.1): Traffic Engineer responsible for data collection, warrant analysis, intersection operational analyses (Synchro), and traffic report preparation.
01/15 – 06/15	LA 3002, 16 & 1034 Corridor Study Phase 2 (Contract No. 4400004064, T.O. No. H.011645.1): Traffic Engineer responsible for data collection and traffic signal analysis.
01/14 – 12/16	LA 30 Stage 0, Gonzales, LA – Traffic & Safety Study (S.P. No. 44-1862, T.O. H.010572.1): Traffic Engineer responsible for data collection, corridor traffic operational analysis (Synchro and Sidra), calibrated Vissim modeling, and the Stage 0 Traffic Report.
01/14 – 03/16	LA 73 Corridor Study (LA 74 to LA 621) Stage 0 Feasibility Study (Contract No. 4400003362, T.O. No. H.011160.1): Traffic Engineer responsible for data collection, warrant analysis, corridor operational analyses (Synchro and Sidra), and Stage 0 traffic report preparation.
01/14 – 06/14	Stage 0 Study, considering the extension of Edenborne Parkway to South St. Landry Road (approximately 1 mile) for Ascension Parish: Traffic Engineer responsible for intersection operational analyses (Sidra).
Career History	Mrs. Howard joined Neel-Schaffer, Inc., in January 2014. Before joining Neel-Schaffer, Mrs. Howard worked as a Traffic Engineer for DOTD District 62. She also worked as a Traffic Engineer Intern for DOTD's Traffic Engineering Management Section in Headquarters. She worked on a variety of projects involving Traffic Engineering Studies, Signal Timing and Coordination, Corridor Studies, traffic modeling using VISSIM and Transportation Management Studies. Since joining NS, she has completed numerous Corridor Studies, Intersection Studies, Safety Studies, Traffic Impact Studies, and Temporary Traffic Control Plans. She has been responsible for simulation modeling using Vissim as well as traffic operation / capacity analysis using HCS, Synchro and Sidra. She is proficient in Traffic Engineering software such as HCS, Synchro, SIDRA, SimTraffic, VISSIM as well as DOTD's CAT Scan safety tool. She also attended Highway Safety Manual (HSM) workshop, Highway Capacity Analysis Seminar, Roundabout Design Workshop, Traffic Signal Workshop, Synchro Training, Vissim Training, Access Management Location and Design Course, Alternative Intersections / Interchanges Workshop, and Crash Reconstruction for Traffic Engineers Course. With Neel-Schaffer, Mrs. Howard has served as a project engineer for the noted traffic-related DOTD projects. Mrs. Howard is a certified Professional Traffic Operations Engineer (PTOE), a certified Road Safety Professional Level 1, and has completed DOTD's Traffic Engineering Process and Report (TEPR) training.

16. Staff Experience:

	Firm employed by Neel-Schaffer, Inc.			
	Name	Vijay Kunada, PE, PTOE, PTP	Years of relevant experience with this employer	20
	Title	Senior Vice President	Years of relevant experience with other employer(s)	5
	Degree(s) / Years / Specialization		BS / 1999 / Civil Engineering; MS / 2001 / Civil Engineering; MS / 2002 / Computer Science	
Active registration number / state / expiration date		Professional Engineer: 32145 / LA / 03/31/2026, PTOE 2868 / 04/14/2028, PTP 096 / all / 11/07/2028 Traffic Engineering Analysis Process & Report Module 1, 2, & 3		
Year registered	2008	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		Travel Demand Modeler (Mesoscopic) – Meets MPR 10		
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).			
02/25 – Present	H.016168.1: Baton Rouge Northern Bypass Expressway, East Baton Rouge and West Baton Rouge Parishes, LA (Owner Reference: LADOTD, Melissa LeBas, Melissa.LeBas@la.gov, 225-379-1039): As Project Manager and Mesoscopic Modeling Lead , Vijay led the development of a regional mesoscopic traffic model using Dynameq software to evaluate the proposed Baton Rouge Northern Bypass as part of the Baton Rouge Urban Renewal and Mobility Plan (BUMP). The mesoscopic model covered a five-parish region and included calibration and validation of the 2024 base-year model, as well as development of the 2046 No-Build scenario and multiple 2046 Build scenarios for both non-tolled and tolled alternatives. Ongoing work includes testing “what-if” alternatives and evaluating measures of effectiveness to compare performance, support refinement of the preferred Build alternatives, and document results in formal traffic analysis reports.			
07/20 – Present	H.013284: MRB South GBR: LA 1 to LA 30 Connector, Ascension, East Baton Rouge, Iberville, and West Baton Rouge Parishes, LA (Owner Reference: LADOTD, Christina Brignac, Christina.Brignac@la.gov, 225-379-1394): As Mesoscopic Modeling Lead , Vijay led the development of a regional mesoscopic traffic model using Dynameq software to evaluate proposed Mississippi River Bridge concepts under both tolled and non-tolled scenarios. The effort included calibration and validation of the 2019 base-year mesoscopic model, development of the 2042 No-Build scenario, and development of 2042 Build scenarios for 20 bridge alternatives, all of which were reviewed and approved by LADOTD. Model results served as a key evaluation criterion in screening alternatives and selecting the final three concepts advanced into the environmental planning process. Phase 2 of the study, which includes detailed traffic analysis, is currently ongoing.			
02/21 – 03/25	H.013897: I-10 & I-12 College Drive Flyover Ramp Design-Build, Baton Rouge, LA (Owner Reference: LADOTD, Catherine Mastin, PE, catherine.mastin@la.gov, 225-379-1652): As Mesoscopic Modeling Lead , Vijay led the evaluation of the Transportation Management Plan (TMP) for the proposed College Drive flyover ramp improvements through development of mesoscopic traffic models for each maintenance of traffic (MOT) phase. Using Dynameq-based mesoscopic modeling, he evaluated and compared multiple MOT strategies to assess construction-phase traffic operations. The completed analyses supported identification of effective traffic management strategies to minimize congestion and operational impacts throughout construction.			
10/21 – 12/22	College Drive Enhancement Project, Baton Rouge, LA (Owner Reference: City of Baton Rouge, Cyndi Pennington, cpennington@brla.gov, 225-389-3246): As Mesoscopic Modeling Lead , Mr. Kunada led the evaluation of multiple on- and off-corridor improvement concepts along and adjacent to College Drive between Perkins Road and I 10. Mesoscopic traffic models were developed and applied to assess individual and combined concepts, enabling comparison of network-level performance across the study area. The analysis identified the concepts, or combinations of concepts, that produced the greatest operational benefits, including reductions in vehicle delay and strategic shifts in traffic volumes to improve overall corridor performance.			
01/04 – 12/04	Lafayette Parish Mesoscopic Model, Lafayette, LA (Owner Reference: Acadiana Planning Commission, Sara Gary, sgary@planacadiana.org, 337-806-9378): As Engineer II , Mr. Kunada, working for the Lafayette MPO, developed a comprehensive mesoscopic traffic model for the entire Lafayette Parish using TransModeler software. The model was developed for both AM and PM peak periods and incorporated traffic signal timing plans			

	for signalized intersections derived from Synchro models. Intersection control types and geometric characteristics were coded for all remaining intersections throughout the network. The model was calibrated and validated to base year (2000) conditions and future 2030 model was developed. The primary purpose of the model was to identify existing and future bottlenecks within the study area to support the development of a data-driven congestion mitigation strategy. In addition, the model was intended to serve as a centralized traffic data repository to support ongoing planning, operational analyses, and future scenario testing.
07/25 - Present	Shreveport-Bossier (LA) MPO 2050 Metropolitan Transportation Plan and Travel Demand Model Update: As Project Manager , Mr. Kunada is leading the development of a performance-based, multimodal long-range transportation plan, including a comprehensive regional freight component. Responsibilities include overseeing travel demand model development in TransCAD leveraging big data sources, conducting demographic and socioeconomic forecasting, and performing detailed multimodal operational and safety needs analyses. The effort also features a robust public, agency, and stakeholder engagement program to support data-driven decision-making and regional consensus.
08/16 – 10/18	I-10 Mobile River Bridge and Bayway Widening, Mobile, AL: As IMR Lead , oversaw development of IMR from data collection phase through the approval. Tasks included traffic forecast for toll and non-toll options, analysis of the proposed Mobile River Bridge and the widening of the Bayway using Synchro/HCS, as well as the proposed modifications to the interchanges within the study area including Diverging Diamond Interchange (DDI) configurations at three locations, VISSIM modeling for analyzing complex weave conditions and the development of IMR in accordance with ALDOT guidelines and FHWA Policy Points.
12/18 – 02/19	I-635 LBJ East Alternative Technical Concepts, Dallas, TX: Traffic Lead for the traffic analysis and refinement of the Alternative Technical Concepts (ATC) proposed for three interchanges associated the I-635 LBJ East Project in Dallas, TX. Freeway elements, ramp terminals and frontage roads were analyzed for the original build concept and the proposed ATCs and demonstrated the effectiveness of the proposed ATCs over the original build concept.
03/17 – 12/17	I-210 Bridge Traffic Impact Study, Calcasieu Parish, LA: Traffic Engineer who managed a traffic study to develop a preferred alternative by analyzing the impacts of various I-210 bridge closure alternatives, and to develop recommendations to manage the expected congestion related to the planned rehabilitation of I-210 bridge over Prien Lake in Lake Charles, Louisiana. Developed project specific travel demand model to model and understand the impacts of bridge closure scenarios.
11/15 – 03/19	I-49 Interchange Improvement at US 190 and LA 31, St. Landry Parish, LA: Traffic Engineer. Tasks included the development of existing and future traffic projections and development of corridor concepts using Access Management strategies, road diet options and innovative intersection configurations such as R-Cuts, J-turns and Roundabouts.
04/18 – 04/20	LA 328 (Rees Street) Corridor Study and Plan: Project Manager. Managed the feasibility study of improving La. Hwy. 328/Rees Street within the corporate limits of the City of Breaux Bridge, Louisiana from Latiolais Road to E Bridge Street including the intersection of E Mills Ave at LA 328
09/20 – 12/21	Lafayette (LA) MPO 2050 Metropolitan Transportation Plan: As Project Manager , Mr. Kunada assisted the MPO with the development of performance based multi-modal long range transportation plan. Tasks also included travel demand model (TransCAD) development using big data sources, demographic forecasting, financial analysis, detailed modeling task and project prioritization process to develop the staged improvement plan.
Career History	Vijay Kunada serves as a Project Manager for a wide range of local and regional transportation planning and traffic engineering studies, supporting both public agencies and private development projects. His experience includes management and technical oversight of metropolitan and regional transportation plans, traffic impact studies, travel demand model development, safety studies, signal warrant analyses, traffic signal timing plans, corridor and interchange studies, and traffic simulation modeling at both mesoscopic and microscopic levels. Mr. Kunada has extensive expertise in traffic and travel demand modeling, including census and socioeconomic data analysis, regional travel demand model development using TransCAD and CUBE, and mesoscopic modeling using Dynameq and TransModeler. His technical skillset further includes regional safety data analysis, external travel surveys, and the application of industry-standard traffic analysis and simulation tools such as HCS, Synchro, SimTraffic, ISATe, VISSIM, TransModeler, Dynameq, CORSIM, and DynaSmart P, as well as ITE Trip Generation methodologies. His project experience also includes traffic studies prepared in support of Environmental Impact Statement (EIS) projects, intersection capacity analyses, and corridor-level operational evaluations. Mr. Kunada has also completed the Louisiana DOTD Traffic Engineering Process and Report (TEPR) training.

16. Staff Experience:

	Firm employed by Neel-Schaffer, Inc.			
	Name	William Case Fulcher, PE, PTOE, PTP, RSP _{1IB}	Years of relevant experience with this employer	9
	Title	Project Engineer	Years of relevant experience with other employer(s)	5
Degree(s) / Years / Specialization		BS / 2012 / Civil Engineering; MS / 2015 / Civil Engineering		
Active registration number / state / expiration date		Professional Engineer: PE No. 45329 / LA / 09/30/2027, PTOE No. 5158 / all / 11-20-2027, PTP No. 786, RSP ₁ No. 351, RSP ₁ No. 147, RSP _B No. 33 Traffic Engineering Analysis Process & Report Module 1, 2, & 3		
Year registered	2021	Discipline	Civil	
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).			
06/22 – Present	District 03 Safety Investment Plan, LADOTD: Engineer for this study evaluating crashes at 119 locations on the state and local highway networks using variations in crash statistics to identify possible roadway issues and potential low-cost safety improvements.			
05/20 – 06/21	District 05 Safety Investment Plan, LADOTD: Project Manager, Traffic Engineer, Safety Analyst. Performed area wide safety screening to identify areas with high potential for safety improvements. Identified potential safety improvements to 81 locations including segments and intersections within LADOTD District 05. Prepared a ranked priority list of projects. Coordinated and led project meetings.			
02/19 – 3/20	District 07 Safety Investment Plan, LADOTD: Project Engineer for this study evaluating crashes at 63 locations on the state and local highway networks using variations in crash statistics to identify possible roadway issues and potential low-cost safety improvements.			
02/18 - 02/19	District 08 Safety Investment Plan, LADOTD: Engineer Intern, Safety Analyst. Identified potential safety improvements to 68 locations including both segments and intersections within LADOTD District 08. Developed an Excel based tool to perform benefit/cost comparisons of safety countermeasures. Prepared a ranked priority list of projects.			
9/21 - 04/24	Retainer Contract for Safety Studies, District 61 Safety Study, LA (S.P. No. 44-10504, T.O. No. H.014684.1): Safety Analyst. Design of Safety Projects. Performed area wide safety screening, crash and data analysis to identify areas with high potential for safety improvements. Identified potential safety improvements to 9 intersections within LaDOTD District 61.			
11/19 - Present	US 80: Intersection @ Bellevue Rd Stage 0/Feasibility Study (S.P. No. H.014044.1): Engineer Intern: Performed traffic data collection, safety analysis, and traffic operational analysis.			
02/18 - 02/19	LA 385 Ryan Street Feasibility Study, Lake Charles, LA (S.P. No. 44-4402, T.O. No. H.012685.1): Engineer Intern. Performed data collection, traffic engineering, and transportation planning services for a feasibility study to determine safety and operational improvements for approximately 1.8 miles of LA 365 in Lake Charles, LA. Services included traffic volume forecasts, intersection and segment analysis, alternative development, and identifying potential safety countermeasures.			

02/17 - 10/17	Runway 13-31 RSA & RPZ Improvement Project Traffic Study (S.P. No. H.011279.1): Engineer Intern: Provided traffic analysis and transportation planning services for the proposed relocation of LA 67 to provide an extended runway safety area for the Baton Rouge Metropolitan Airport.
02/17 - 02/18	US 190 & US 171 Signal Timing Study (S.P. No. 44-4064, T.O. No. H.012686.5): Engineer Intern: Provided traffic engineering services including both the development and implementation of traffic signal timing plans for ten signals in DeRidder, LA.
02/20 – 10/21	I-59 at US 49 PEL Study, Forrest County, MS: Traffic Engineer, Safety Analyst. Provided the safety analysis for both existing and future expected conditions. Assisted with traffic engineering services.
01/20 – 09/21	Mississippi State University Master Plan Update, Mississippi State, MS: Transportation Planner. Services included identifying improvements to existing circulation, identifying new beneficial connections, determining areas of parking need, identifying potential new parking locations.
06/17 – 09/18	I-10 New Orleans Master Plan, Port Access Improvements, New Orleans, LA: Engineer Intern. Provided traffic engineering and transportation planning services to develop an operational and capital improvement plan for the I-10 corridor at its junction with US 90B to improve congestion and port access.
06/21 - Present	District 6 Emergency Signal and ITS Repair, Hancock and Harrison Counties, MS: Traffic Engineer. Performed signal inventories and prepared signal design sheets and quantity takeoffs.
10/21 - Present	Harding Boulevard at Interstate I-110 (“MovEBR”): Safety Analyst. Performed crash analysis along Harding Boulevard in the vicinity of I-110 to determine potential safety issues and develop safety improvement recommendations where feasible.
09/20 – Present	College Drive Enhancements (“MovEBR”): Safety Analyst. Performed crash analysis along College Drive in the vicinity of I-10 to determine potential safety issues and develop safety improvement recommendations where feasible.
06/21 – Present	US 51 between Church Road and Green T Road, Desoto County, MS (S.P. No. SPR- 1(1 2I) /1.08597 -1 10000, T.O. No. NS-P/E 2019-04): Traffic Engineer, Safety Analyst. Provided the safety analysis and assisted with traffic engineering services for improvements to this section of US 51.
05/21 – 09/21	I-59 at US 49 PEL Study, Forrest County, MS: Traffic Engineer, Safety Analyst. Provided the safety analysis for both existing and future expected conditions. Assisted with traffic engineering services.
Career History	Mr. Fulcher joined Neel-Schaffer in 2017 after working as a graduate research/teaching assistant for the Mississippi State University Department of Civil and Environmental Engineering. Since joining Neel-Schaffer he has provided a variety of traffic data collection and safety analysis studies and services. Mr. Fulcher has extensive experience in corridor and intersection safety studies. Through the evaluation of crash history, roadway geometrics, and traffic volumes, he evaluates a variety of safety improvements to provide a ranked list of safety improvements. Mr. Fulcher has completed training and has extensive experience with LADOTD’s CAT Scan safety tool. He also has significant experience in traffic forecasting, modeling, and analysis using CORSIM, HCS, Vistro, Synchro, ISATe, and TruTraffic. Mr. Fulcher is a certified Professional Traffic Operations Engineer (PTOE) a Road Safety Professional, and has completed LADOTD’s Traffic Engineering Process and Report (TEPR) training.

16. Staff Experience:

	Firm employed by Neel-Schaffer, Inc.		
	Name	Charles LeBoeuf, PE, PTOE	Years of relevant experience with this employer 12
	Title	Senior Traffic Engineer	Years of relevant experience with other employer(s) 2
	Degree(s) / Years / Specialization		B.S. / 1994 / Civil Engineering
Active registration number / state / expiration date		Professional Engineer: 42854 / LA / 03/31/2027, PTOE 5397 / 11/23/2028	
Year registered	2018	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		Traffic Forecasting & Travel Demand Modeling; Traffic Analysis; Safety Analysis	
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).		
04/18 – 04/20	LA 328 (Rees Street) Corridor Study and Plan: Traffic Engineer. Project includes improving La. Hwy. 328/Rees Street from Latiolais Road to E Bridge Street including considering the impacts of the proposed E Mills Ave extension LA 328 to Doyle Melancon Ext. roadway and outreach.		
02/22 – 10/22	Pinhook Road at Kaliste Saloom Road, Lafayette, LA: This project evaluated the conversion of the intersection of Pinhook Road at Kaliste Saloom Road from a full access signalized intersection to a quadrant intersection. For this project, Mr. LeBoeuf analyzed the proposed intersection concept in Synchro and developed signal timings and lane geometry that would reduce intersection delay.		
10/21 – 12/22	College Drive Enhancement Project, Baton Rouge, LA (City of Baton Rouge, Cyndi Pennington, cpennington@brla.gov, 225-389-3246): Traffic Engineer. Several off-corridor concepts were considered near College Drive between Perkins Road and I-10. Mr. LeBoeuf analyzed these off-corridor concepts using mesoscopic modeling to determine which concept, or group of concepts, would result in the most improvements within the study area. These improvements include a reduction in vehicle delays and shifts in traffic volumes.		
02/21 – 03/25	H.013897: I-10 and I-12 College Flyover Ramp Design-Build Project, Baton Rouge, LA (LADOTD, Catherine Mastin, PE, catherine.mastin@la.gov, 225-379-1652. Traffic Engineer. This project documented the expected work zone impacts to I-10, I-12, and nearby surface arterials due to the construction of the College Drive Flyover. Mr. LeBoeuf analyzed the expected work zone impacts using mesoscopic modeling (Dyanmeq) for the first phase of construction. The impacts included queueing, shifts in traffic volumes, and traffic speeds.		
07/20 – Present	H.013284: MRB South GBR: LA 1 to LA 30 Connector, Baton Rouge, LA (LADOTD, Christina Brignac, Christina.Brignac@la.gov, 225-379-1394): Traffic Engineer. This project uses mesoscopic modeling to analyze a proposed new crossing over the Mississippi River from LA 1 to LA 30 between I-10 and LA 70. Mr. LeBoeuf used the existing traffic data to develop peak period volumes and travel times which were to be used in the model calibration and validation. Mr. LeBoeuf developed the Base mesoscopic model by first expanding a previous Dyanmeq mesoscopic model to include the West Bank of the Mississippi River from Baton Rouge to Donaldsonville, and then performing Dynamic Traffic Assignments using Origin-Destination (O-D) matrices. Afterwards, Mr. LeBoeuf used the existing traffic data to calibrate the Base model to better reflect existing traffic conditions. Once the Base model was finished, Mr. LeBoeuf then developed the No Build model, which included proposed highway improvements and an updated O-D matrix. This No Build model was then used as a background model to develop Bridge-specific models for each of the 20 proposed Bridge crossings.		

02/25 - Present	H.016168: Baton Rouge Northern Bypass Expressway (NBE), Baton Rouge, LA (Owner - LADOTD; Contact - Melissa Lebas; P.O. Box 94245, Baton Rouge, LA 70804, 225-379-1039; melissa.lebas@la.gov): Traffic Engineer. This project uses mesoscopic modeling to determine the feasibility of upgrading Airline Highway in West Baton Rouge and East Baton Rouge Parishes to a controlled-access toll road with parallel toll-free frontage roads. Mr. LeBoeuf expanded the mesoscopic model developed for the Mississippi River Bridge project to cover the entire five-parish Baton Rouge Metropolitan Area. Afterwards, Mr. LeBoeuf used the existing traffic data to calibrate the Base model to better reflect existing traffic conditions. Once the Base model was completed, Mr. LeBoeuf then developed the No Build models, which included proposed highway improvements and an updated O-D matrix for the years 2030 and 2046. Following the development of the No Build models, Mr. LeBoeuf began the Build model development for the proposed Bypass. The proposed Bypass begins at I-10 west of Port Allen and follows Airline Highway from LA 415 to Pecue Lane.
12/18 – 02/19	I-635 LBJ East Alternative Technical Concepts, Dallas, TX: Traffic Engineer. Alternative Technical Concepts were proposed for three interchanges associated the I-635 LBJ East Project in Dallas, TX. For this project, Mr. LeBoeuf analyzed the freeway and frontage road elements, comparing the operational changes between the original build concept and the proposed Alternative Technical Concept.
01/17 – 08/18	I-10 Mobile River Bridge Interchange Modification Report, Mobile, AL: Traffic Engineer. This project analyzed the impacts of the new I-10 bridge crossing the Mobile River to the south of the existing I-10 Wallace Tunnels in Mobile, AL. Mr. LeBoeuf developed future peak hour volumes using the Travel Demand Model results for Mobile and Baldwin Counties for the No Build scenario, which involved no improvements to study area roadways, and for the Build scenario, which incorporated the new I-10 Mobile River Bridge, a widened I-10 Bayway from Mobile to Daphne, AL, and interchange improvements along I-10 within the study area. Mr. LeBoeuf performed intersection traffic analyses using the existing and future peak hour traffic volumes and recommended the intersection geometry for study area intersections.
01/17 – 02/18	Western Beltway Phase II Feasibility Study, Hattiesburg, MS: Traffic Engineer. This project determined the feasibility of extending MS 42 from I-59 to US 49 north of Hattiesburg, MS. Mr. LeBoeuf developed existing peak hour volumes and volume characteristics such as peak hour factors and heavy vehicle percentages. Mr. LeBoeuf developed future peak hour volumes using the Hattiesburg, MS Metropolitan Planning Organization's Travel Demand Model results for the No Build scenario, which involved no improvements to study area roadways, and for the Build scenario, which incorporated two roadway alignment alternatives. Mr. LeBoeuf performed intersection traffic analyses using the existing and future peak hour traffic volumes and recommended the intersection geometry for study area intersections. Mr. LeBoeuf analyzed crash data to determine crash trends and estimate the expected number of crashes for future scenarios. Mr. LeBoeuf also performed a benefit-cost analysis for each scenario using the expected number of crashes and expected changes in travel times.
10/16 – 01/17	LA 1133 Realignment Study, Carlyss, LA: Traffic Engineer. This realignment study analyzed the operational impacts of closing South Boudoin Road between Sayles Street and East Dave Dugas Road in Carlyss, LA as part of the expansion of the Westlake Chemicals Plant. Mr. LeBoeuf developed future peak hour volumes using the Lake Charles, LA Metropolitan Planning Organization's Travel Demand Model results for the No Build scenario, which kept South Boudoin Road open. Volumes for the Build scenario were developed by rerouting traffic from Boudoin Road to other roads within the study area. Mr. LeBoeuf performed intersection traffic analyses using the existing and future peak hour traffic volumes and recommended improvements for signalized and unsignalized study area intersections with the closure of South Boudoin Road.
Career History	Mr. LeBoeuf joined Neel-Schaffer in 2014 and has 13 years of experience in the engineering field, including 18 months as a Co-Op student with LADOTD. Since joining Neel-Schaffer, Mr. LeBoeuf has provided a wide variety of transportation-related services, including travel demand modeling, GIS, crash analysis, traffic analysis, and mesoscopic modeling. He also has experience in the collection of turning movement counts for development projects. Mr. LeBoeuf has completed DOTD's Traffic Engineering Process and Report (TEPR) training.

16. Staff Experience:

	Firm employed by Neel-Schaffer, Inc.			
	Name	Jonathan Duhe, PE, PTOE, RSP	Years of relevant experience with this employer	11
	Title	Project Engineer	Years of relevant experience with other employer(s)	1
	Degree(s) / Years / Specialization		BS / 2011 / Civil Engineering	
Active registration number / state / expiration date		Professional Engineer: 41047 / LA / 03/31/2027, PTOE 4418 / 03/18/2028, RSP 1 282 / all / 07/17/2028 Traffic Engineering Analysis Process & Report Module 1, 2, & 3		
Year registered	2016	Discipline	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).			
03/23 – Present	IDIQ for road design projects - this contract includes three separate Task Order projects which include traffic services, road design, preliminary and final plan development. The projects include pavement preservation, constructing new roads, extend existing roads, construction of roundabouts, turn lanes and drainage improvements. 1.) US 90: Roundabout a LA 101 (Calcasieu) (SPN. H.015226); Traffic Engineer. This project includes the design for a roundabout with high-speed ap-proaches. The design avoids impacts to a gas station, and other development at the intersection. It includes minimum right of way taking and detention pond design. 2.) LA 621: Realignment @ LA 73 (Ascension) (SPN. H.014366); Traffic Engineer. This project will widen LA 73 and realign LA 621 to near its existing in-tersection with LA 73 to relieve congestion and improve safety. This project includes the design of a multilane roundabout to provide connectivity for local roadways, traffic analysis, Transportation Management Plan, and 1 mile of mill and overlay for LA 621. 3.) LA 16: N 2nd Street to LA 445 (Tangipahoa Parish) SPN. H.009425.5; Traffic Engineer. Project includes the mill and overlay of LA 16 from N 2nd Street to east of Duncan Avenue, the in-place base rehabilitation and overlay of LA 16 from east of Duncan Avenue to LA 445. The scope of work will also include the hydraulic analysis and development of construction plans for the rehabilitation of the existing subsurface drainage system to improve drainage along LA 16 from US 51 to approximately 1000' east of Duncan Avenue. 4.) LA 182: US 90 – Greenwood St. Overpass SPN. H.016158; Traffic Engineer. This project includes pavement rehabilitation along LA 182 from WB Exit Ramp to Greenwood St. Overpass, in Morgan City, LA. The work includes pavement patching, mill and overlay, roadway reinforcing mesh, curb ramps and guard rail.			
02/22 – Present	W. Broussard Roundabout at Duhon Rd. (LA 724): Project Engineer. This project will construct a roundabout and required drainage improvements. Includes roundabout. Completed the horizontal and vertical alignments (line and grade). Preliminary and final plans.			
02/20 – Present	I-20 at LA 544 Overpass Replacement, Lincoln Parish, LA: Project Engineer. This project will replace the existing LA 544 bridge crossing and interchange with a new bridge and roundabouts. This project includes four multilane roundabouts located in a tight project area with many constraints and large grade changes. The roundabouts will connect ramps and service roads with adjacent businesses. The project includes new bridge with sidewalk over I-20. The entire project limits are complete street compliant which means it provides facilities for all users. Tasks similar to Line and Grade completed: Established design criteria, typical roadway sections, horizontal and vertical geometry, ID structure locations and more. Mr. Duhe provided signal design review. Preliminary and final plans.			

08/22 – Present	LRSP Ardenwood Dr Road Diet, Baton Rouge, LA: Project Engineer. Responsible for data collection (traffic counts and peak hour observations), traffic forecasting, safety analyses, corridor operational analyses (HCS, Sidra), safety analyses, and traffic report preparation.
07/21 – Present	FYA Signal Improvement (LCG), Lafayette, LA: Project Engineer. Oversaw development of signal plans to upgrade 28 intersections to include flashing yellow arrow signal heads as well as backplates.
09/21 – Present	Harding Blvd at I-110, Baton Rouge, LA: Traffic Engineer. Performing a traffic study along Harding Boulevard between Rosewood Street and Merle Gustafson Drive including the I-110 Ramps in an effort to improve capacity. Assisted with data collection and the initial data collection report.
09/20 – Present	College Drive Enhancement Project, Baton Rouge, LA: Traffic Engineer. Performing a traffic study along College Drive between Perkins Road and Bawell Street/Bankers Avenue including the I-10 Ramps in an effort to improve capacity and safety. Assisted with data collection including peak period observations and travel time runs. Also performed safety analysis along the College Drive corridor.
06/20 – Present	I-10/12 College Drive Flyover Design Build, Baton Rouge, LA: Traffic Engineer. Performing a traffic study at the I-10/12 merge in an effort to improve capacity and safety. Assisted with uncalibrated VISSIM model. Assisted with safety analysis and signal design.
04/20 – 06/21	District 05 Safety Investment Plan District 05, LA: Traffic Engineer. Assisted with safety analysis including reviewing crashes utilizing LaDOTD's CATScan tool and performing benefit-cost analysis of potential safety improvements. Also assisted with report preparation.
11/17 – 04/19	District 08 Safety Investment Plan District 08, LA: Traffic Engineer. Assisted with safety analysis including reviewing crashes utilizing LaDOTD's CATScan tool and performing benefit-cost analysis of potential safety improvements. Also assisted with report preparation.
02/19 – 03/20	District 07 Safety Investment Plan District 07, LA: Traffic Engineer. Assisted with safety analysis including reviewing crashes utilizing LaDOTD's CATScan tool and performing benefit-cost analysis of potential safety improvements. Also assisted with report preparation.
11/16 – 04/19	LA 385 (Ryan St) Feasibility Study, Lake Charles, LA: Traffic Engineer. Assisted with intersection analysis including Vistro analysis. Assisted with safety analysis including reviewing crashes, creating collision diagrams, identifying conflict points, and using LaDOTD's CATScan tool to analyze safety.
02/16 – 10/17	LA 6 Feasibility Study, Natchitoches, LA: Traffic Engineer. Assisted with intersection analysis including Synchro and Sidra analysis. Assisted with safety analysis including reviewing crashes, creating collision diagrams, and using the HSM Predictive method to analyze safety of potential alternatives. Also
03/20 – 06/20	Braud Rd at Germany Rd Temp. Signal Design, Gonzales, LA: Project Engineer developed signal layout and timing parameters for temporary signal. Signal design included developing Clearance Calculations, utilizing Synchro for signal timing, designing in MicroStation software, developing Intersection Quantities, and creating a Traffic Signal Inventory)
03/19 – 11/19	District 08 Signal Timing Study, Natchitoches, LA: Project Engineer Oversaw Data Collection (TMCs, Observations, Inventory, Travel Runs, etc), Signal Warrant Analyses, Intersection Operations Analyses (Synchro), Developed new signal timing and TSIs
03/19 – 11/19	US 61 Signal Timing Study, Baton Rouge, LA: Project Engineer Oversaw Data Collection (TMCs, Observations, Inventory, Travel Runs, etc), Signal Warrant Analyses, Intersection Operations Analyses (Synchro), Developed new signal timing and TSIs
12/19 – Present	US 80 Feasibility Study, Stage 0/Traffic & Safety Study, Haughton, LA: Project Engineer. Stage 0 Report in support of safety improvements along US 80 corridor, specifically in the vicinity of Bellevue Road and Mid-South Loop Road. All analysis performed in HCS for this study. The traffic study was performed in accordance with DOTD's TEPR. Project includes signalized intersections. Oversaw Intersection Operational Analyses (HCS), safety analysis, alternative development, and traffic report preparation.
Career History	Jonathan joined Neel-Schaffer in 2013 and has more than a decade of experience working on a wide range of traffic and transportation projects. He has worked on many intersection/corridor signal timing studies and signal design projects and other traffic engineering related projects for both public and private projects. He is experienced with numerous traffic engineering software packages include HCS, SYNCHRO, VISTRO, Tru-Traffic (TSPPDraft), and SIDRA. Jonathan has completed training and has experience using LADOTD's CAT Scan safety tool. He is a certified Professional Traffic Operations Engineer (PTOE), a Road Safety Professional (RSP1) and has completed LADOTD's Traffic Engineering Process and Report (TEPR) training.

16. Staff Experience:

Firm employed by SJB Group, LLC			
Name	Charles "Tim" Brewer, PLS, PS, RPLS, LS, PS, RF	Years of relevant experience with this employer	4
Title	Principal-in-Charge	Years of relevant experience with other employer(s)	28
Degree(s) / Years / Specialization		B.S. / 1988 / Forestry Management	
Active registration number / state / expiration date		PLS 0005009 / Louisiana / 9/30/2027 RPLS 6142 / Texas / 12/31/2027 RF 1286 / Mississippi / 12/31/2027	
Year registered	2009, 2015, 1988	Discipline	Professional Land Surveyor, Reg. Professional Land Surveyor, Registered Forester
Contract role(s) / brief description of responsibilities		Surveyor – 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).		
08/24 - Present	LADOTD Project No. H.003931 – I-10 Calcasieu River Bridge P3 Project, Calcasieu Parish, LA Surveyor of Record/Project Manager. SJB Group provided an additional Topographic Survey and Right-of-Way Mapping for this project, which is the largest in LADOTD history. This project covers a 5.5 mile stretch of Interstate 10 and includes 15 bridges and 19 ramps. The topographic survey component of the project include recovery and verification of existing control, preparation of the primary and secondary control sketch, supplemental topographic survey and dtm preparation.		
12/21 – Present	LADOTD Project No. H.004100 I-10 Widening from LA 415 to Essen, East Baton Rouge Parish, LA Surveyor of Record/Project Manager. SJB Group conducted property and partial Topographic Surveys as well as Right-of-Way Mapping , a long a 4.4-mile stretch of Interstate 10 from LA 415 to Essen Lane in East Baton Rouge Parish for the LADOTD widening project. Field surveying and mapping covered more than 100 parcels, and included drainage and access servitudes, and railroad rights-of-way. Deliverables included property maps , base and final Right-of-Way Maps , MicroStation design files, and a parcel input file for acquisition parcels.		
9/25 – 01/26	LADOTD Project No. H.000112 US 190: UPRR Overpass, Opelousas, LA Surveyor of Record/Project Manager. Managed topographic surveys for the I-49 and UPRR Railroad Bridge in Opelousas, as well as the US 190 and Bayou Teche Bridge replacements. Oversaw crew coordination, topography work , review and integration of Mobile LiDAR data. Traditional Field work and coordination of SUE.		
10/23 – 12/24	LADOTD Project No. H.005121.5 LA1 – LA415 Connector, East Baton Rouge Parish, LA Project Manager. The project was a topographic survey by conventional survey methods and mobile LiDAR Scanning for the design of a roadway to connect LA 415 to LA 1. The project is a supplement to previously performed surveying for the realignment of the project due to recent development and construction. The project limits include areas of roadway into forested lands, agricultural fields, residential, commercial, industrial, and retail areas.		
09/22 – 06/25	MDOT Project No. SJB-PS 2022 IDIQ Contract Statewide Surveyor of Record/Contract Manager. The projects include topographic surveys , boundary surveys to produce the property surveys , hydraulic survey pdf files of the roadway centerlines, creek centerlines, floodplain profiles, and right-of-way determination. The projects are performed according to the Mississippi Department of Transportation Survey Manual. SJB Group has completed three work assignments under the contract.		

08/22 – 04/24	LADOTD Contract No. 44-17597 - Rural Bridge Replacement Initiative, Districts 03, 07, 61, 62 Surveyor of Record/Project Manager. Sub to Burk-Kleinpeter. This project included a topographic survey, right-of-way mapping, and roadway design performed for the proposed bridge replacements for LADOTD Districts 03, 07, 61, and 62. Each site required a complete property map and the preparation of right-of-way maps with supporting data for right-of-way acquisition.
03/22 – 08/22	LADOTD Project No. H.009300.5 Hooper Road Widening, Baton Rouge, LA Surveyor of Record/Project Manager. SIB Group has performed several iterations of a topographic survey for LADOTD for the Hooper Road widening project. This submittal included the segment of Hooper Road from Sullivan Road (LA 3034) to Greenwell Springs Road (LA 37). A complete, detailed topographic survey and the verification of the control network and verification of utility data provided by utility operators.
8/20 – 3/22	LADOTD Contract No. 4400017597 – Rural Bridge Replacement Initiative Project Manager. This project included a topographic survey, right-of-way mapping, and roadway design performed for the proposed 33 bridge replacements for LADOTD Districts 03, 07, 61, and 62. Each site required a complete property map and the preparation of right-of-way maps with supporting data for right-of-way acquisition. The topographic survey of the project limits of each bridge included a complete inventory for each drainage structure (type, size, length, and invert) and cross sections of all drainage ways.
10/20 – 8/22	LADOTD Project No. H.002176.50 – LA 10 Bridges Project Manager. The LA 10 Bridges project in St. Landry parish included right-of-way surveys for three sites for this project, produce base right-of-way maps, along with signed and sealed right-of-way maps for the three sites. SJB surveyed the affected properties and determined the existing right-of-way for LA Hwy 10 and multiple state-claimed water bodies. Submission of preliminary property survey map depicting the existing right-of-way and property lines within the project limits.
6/18 – 11/21	LADOTD Project No. H.012001 – LA 339 Canal and Creek Bridges Project Manager. The LA 339 Canal and Creek Bridges project in Vermillion Parish included Right-of-Way surveys for 3 sites. SJB surveyed the affected properties and determined the existing right-of-way for LA Highway 339 and multiple intersecting streets. Submission of preliminary property survey map depicting the existing right-of-way and property lines within the project limits.

16. Staff Experience:

Firm employed by SJB Group, LLC			
Name	Ralph D. Burgess, PLS	Years of relevant experience with this employer	<1
Title	Surveyor/Survey Department Manager	Years of relevant experience with other employer(s)	26
Degree(s) / Years / Specialization		B.S. / 2004 / Industrial Technology Design	
Active registration number / state / expiration date		PLS 0005040 / Louisiana / 9/30/2026	
Year registered	2010	Discipline	Professional Land Surveyor
Contract role(s) / brief description of responsibilities		Surveyor – 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).		
9/25 – 01/26	LADOTD Project No. H.000112 US 190: UPRR Overpass, Opelousas, LA Surveyor of Record/Project Manager. Managed topographic surveys for the I-49 and UPRR Railroad Bridge in Opelousas, as well as the US 190 and Bayou Teche Bridge replacements. Oversaw crew coordination, topography work, review and integration of Mobile LiDAR data. Traditional Field work and coordination of SUE.		
9/25 - Present	Office of Louisiana Highway Construction Bridge Bundle 6 - O.B.2025.03.048, Vermilion Parish, LA Survey Manager/Responsible Charge. This project is a complete topography and property survey for seven bridges. Managed a complete topography and property survey for seven bridge projects, overseeing crew coordination, control and topographic data processing, and property/right-of-way calculations. Directed creation and review of survey control, topographic, and property survey packets to ensure accuracy and compliance with project standards.		
9/25 – 10/25	Office of Louisiana Highway Construction Bridge Bundle 6 - O.B.2025.03.047, Vermilion Parish, LA Survey Manager/Responsible Charge. Oversaw a complete topographic and property survey for a single bridge, ensuring compliance with project standards. Responsibilities included coordinating field crews, processing survey control and topography data, and calculating property boundaries and right-of-way limits. The manager prepared survey control, topographic survey , and property survey packets for submittal and review by the supervising professional, maintaining accuracy and quality throughout the project.		
08/24 - Present	LADOTD Project No. H.003931 – I-10 Calcasieu River Bridge P3 Project, Calcasieu Parish, LA Department Manager. SJB Group provided an additional topographic survey and right-of-way mapping for this project, which is the largest in LADOTD history. This project covers a 5.5 mile stretch of Interstate 10 and includes 15 bridges and 19 ramps. The topographic survey component of the project include recovery and verification of existing control, preparation of the primary and secondary control sketch, supplemental topographic survey and dtm preparation.		
09/23 – 12/23	LADOTD Project No. H.015619.5 LA 106, Evangeline Parish, LA Survey Manager/Responsible Charge. This project involved an 8-mile pavement preservation for District 03. It primarily had limited topography with some areas requiring full topography according to LaDOTD standards. Mr. Burgess worked with the district to finalize survey scoping, managed and directed the topographic survey , and coordinated with local utility companies for asset locations in areas needing full topography. Upon project completion, Mr. Burgess conducted a comprehensive quality control and assurance review of the topography submittal. The topographic data was gathered using traditional methods.		

07/20 – 10/21	LADOTD Project No. H.013989 Greybow Rd. Palmetto Creek, Beauregard Parish, LA Surveyor of Record/Project Manager. The project included the completion of property surveys, base right of way maps, and final right of way maps that were required for the project. Responsible for field crew coordination, review of title takeoff & title reports, right of way calculations, review production of maps, final QA/QC, and final deliverables to the Client. The Surveys were performed to LADOTD Location and Survey Standard.
02/21 – 07/22	LADOTD Project No. H.013958 Carpenters Bridge Rd. Whiskey Chitto Creek Surveyor of Record/Project Manager. Managed and directed the topographic survey while coordinating with local utility companies for asset location. Conducted thorough quality control and quality assurance reviews of all topography submissions and drainage maps. The topographic data for this project was collected using both traditional means and methods. Additionally, this project included property surveys and right-of-way mapping in accordance with LADOTD standards.
01/21 – 06/21	LADOTD Project No. H.013959 Reeds Bridge Rd. Calcasieu River Relief, Allen Parish, LA Surveyor of Record/Project Manager. Managed and directed the topographic survey while coordinating with local utility companies for asset location. Conducted thorough quality control and quality assurance reviews of all topography submissions and drainage maps. The topographic data for this project was collected using both traditional means and methods. Additionally, this project included property surveys and right-of-way mapping in accordance with LADOTD standards.
07/20 – 04/21	LADOTD Project No. H.001352.5 and H.002273.5 Comite River Diversion Bridge at LA 67, LA 19 and LA 19 Railroad Bridge, East Baton Rouge Parish, LA Survey or Record/Project Manager. Working as a sub-consultant on this project was responsible for topographic surveying the LA 67 and LA 19 sites of the Comite River Diversion project. This included merging of data from a previous survey on one portion of the site and field verifications of that data. The topographic data for this project was collected traditionally.
10/16-11/16	LADOTD Project No. H.012728.5 LA 443 Emergency Bridge Replacement, Tangipahoa Parish, LA Surveyor of Record/Project Manager. Mr. Burgess oversaw all surveying activities necessary to support the design and construction phases. This included managing field data collection, ensuring accurate mapping, and verifying critical control points for the replacement structure. I coordinated closely with engineers, contractors, and DOTD representatives to maintain project compliance and resolve technical issues. Additionally, I ensured that all deliverables met DOTD standards and were completed on schedule to support the accelerated emergency replacement timeline.
08/16 – 01/18	LADOTD Project No. H.011235 I-49 Verot School Road, Lafayette, LA Surveyor of Record/Project Manager. Responsible for managing and directing the topographic survey and coordinating with the SUE subconsultant for all utility locates. Reviewed and conducted QC/QA of all topography submittals and drainage maps. The topographic data for this project was collected both traditionally and by utilizing 3D Scanning methods. Collaborated with the SUE subconsultant and firm crews to obtain and incorporate all utility data.

16. Staff Experience:

Firm employed by SJB Group, LLC			
Name	Bradley Jacobs, EI	Years of relevant experience with this employer	<1
Title	Senior Technician	Years of relevant experience with other employer(s)	12
Degree(s) / Years / Specialization		B.S. / 2015 / Civil Engineering	
Active registration number / state / expiration date		Engineer in Training: 32456 / LA / 9/30/2027	
Year registered	2015	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		Surveyor 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).		
9/25-Present	Office of Louisiana Highway Construction Bridge Bundle 6 - O.B.2025.03.048, Vermilion Parish, LA Senior Survey Technician. This project is a complete topography and property survey for seven bridges. Responsibilities included coordination with crews, processing of control and topography, calculating property and right of way, and creating survey control, topographic survey, and property survey packets for submittal and review by supervising professional.		
9/25-01/26	LADOTD Project No. H.000112 US 190: UPRR Overpass, Opelousas. LA Survey Technician. This project is a complete topography for the I-49 and the UPRR Railroad Bridge in Opelousas. This also included topography for the US 190 and Bayou Teche Bridge Replacement. Responsibilities included coordination with crews, topography, reviewing and importing of Mobile LiDAR data, and creating topographic surveys, packet for submittal and review by supervising professionals.		
9/25-10/25	Office of Louisiana Highway Construction Bridge Bundle 6 - O.B.2025.03.047, Vermilion Parish, LA Senior Survey Technician. This project is a complete topography and property survey for a single bridge. Responsibilities included coordination with crews, processing of control and topography, calculating property and right of way, and creating survey control, topographic survey, and property survey packets for submittal and review by supervising professional.		
02/23-12/23	LADOTD Project No. H.012027.5 - I-20 UPRR, Caddo Parish, LA Survey Technician. Topographic Survey for the interstate in North Louisiana. Both traditional means and methods and 3D Scanning were used to collect topographic data for this interstate and overpass improvement project. This project also included coordinate and survey of the Union Pacific Railroad line crossing I-20. Project was completed to LADOTD Location and Survey Standards and practices.		
04/21 – 06/21	LADOTD Project No. H.01689 - LA 182 @ LA 723 Roundabout, Lafayette Parish, LA Survey Technician. Performed field data collection for topographic and property surveys, establishing survey control and centerlines using GPS and traditional methods. Responsibilities included recovering property corners, locating utilities, and assisting with right-of-way mapping for design purposes. The technician processed field data, verified accuracy, and prepared survey packets for review in compliance with DOTD standards and project requirements.		

17. Firm Experience:

Firm name	Hardesty & Hanover		Past Performance Evaluation Discipline(s)*	Bridge
Project name	Almonaster Ave Bridge over the Industrial Canal			Firm responsibility (prime or sub?) Prime
Project number	H.014530	Owner's name	Port of New Orleans / LADOTD	
Project location	New Orleans, LA		Owner's Project Manager	Michael Sulser, PE
Owner's address, phone, email	1350 Port of New Orleans Pl, New Orleans, LA 70130 504.528.3297 michael.sulser@portnola.com			
Services commenced by this firm (mm/yy)	01/20	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)		\$2,250

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.



Almonaster Ave Bridge over the Industrial Canal

The Almonaster Bridge crosses over the Industrial Canal and provides 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:

- Bridge Design
- Roadway Design
- Railroad Coordination
- Drainage Design
- Utility Relocation
- Management of Multiple Subconsultants

Key Members: Babak Naghavi, PE, PH, PhD; Timothy Noles, PE; Fred Wetekamm, PE; Erik Diaz, PE; Corey Bourgeois, PE; Linh Kim, PE; Dalton Hunt, EI; Robert Hideck, PE; John Rayer, PE; J. Lee Adams, PE; Lauren Peytavin, EI, Courtney Mai, EI; Will Farber, EI; and Chloe Beals, EI

17. Firm Experience:

Firm name	Hardesty & Hanover	Past Performance Evaluation Discipline(s)*	Bridge
Project name	North Bridge over Intercoastal Waterway & FEC Railroad		Firm responsibility (prime or sub?) Prime
Project number	N/A	Owner's name	Florida Department of Transportation
Project location	St. Lucie County, FL	Owner's Project Manager	Jim Hughes, PE
Owner's address, phone, email	3400 West Commercial Blvd, Fort Lauderdale, FL 33309 954.777.4419 james.hughes@fdot.state.fl.us		
Services commenced by this firm (mm/yy)	07/2016	Total consultant contract cost (\$1,000's)	\$7,200
Services completed by this firm (mm/yy)	09/2021	Cost of consultant services provided by this firm (\$1,000's)	\$2,600



3D Rendering of North Bridge over ICWW & FEC Railroad



Construction Progress at SR A1A & FEC Railroad/Old Dixie Hwy (June 2025)



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

This project required the design of a new high-level fixed bridge and associated approaches **using staged construction to maintain traffic throughout construction**. The new bridge also **eliminates the grade crossing for FEC Railroad, with the new bridge spanning over existing tracks**. The new bridge will include an 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 met by the H&H team include extensive utility, railroad, marine coordination, significant right-of-way coordination required by FEC Railroad, and adjacent business owners, and permitting coordination. Other scopes of services include geotechnical engineering, hydrogeology, drainage, lighting, signalization, signage, pavement marking, public involvement, as well as maintenance, control, and protection of vehicular and marine traffic.

Constructed in 1963, this bridge spans over the Intracoastal Waterway and connects the barrier island to the mainland in the City of Fort Pierce. In March 2014, the bridge was found to be structurally deficient and functionally obsolete. The new fixed bridge is 65 ft. wide and consists of FIB-84 beams spanning 158 ft. in simple spans and 184 ft. in continuous spans. The new observation deck structure is CFRP prestressed slabs, bent caps, and piles.

Scope of Work Relevant to the Contract:

- New Bridge Design using Staged Construction
- Crosses Railroad requiring Railroad Coordination
- Maintains Vehicular and Rail Traffic throughout Construction
- Roadway and Drainage Design Eliminates Non-Standard Features

Key Members: Timothy Noles, PE; Robert Hideck, PE; J. Webb Jones, PE; and Benjamin Bower, PE

Hardesty & Hanover, LLC

17. Firm Experience:

Firm name	Hardesty & Hanover	Past Performance Evaluation Discipline(s)*	Bridge
Project name	Lapalco Bridge over Harvey Canal	Firm responsibility (prime or sub?)	Prime
Project number	H.004396	Owner's name	Jefferson Parish/LADOTD
Project location	Jefferson Parish, LA	Owner's Project Manager	Mark Drewes, PE
Owner's address, phone, email	1221 Elmwood Park Blvd. Ste 802, Jefferson, LA 70123 504.736.6500 mdrewes@jeffparish.net		
Services commenced by this firm (mm/yy)	01/18	Total consultant contract cost (\$1,000's)	\$7,000
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm (\$1,000's)	\$4,250

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

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

The project is being designed to LADOTD Standards and Specifications for Roads and Bridges, the Louisiana DOTD Bridge Design Manuals and AASHTO, The Manual for Bridge Evaluations, and reviewed by LADOTD.

Scope of work includes thorough inspection of the existing bridge, survey, and geotechnical engineering as well as updating the existing Environmental Assessment. Design services include development of Bridge Design Report; roadway design and lighting; utility coordination; load rating for the existing and new fixed and movable structures; structural design of foundation and approach spans; the structural, mechanical and electrical design of the bascule portion; as well as permitting.



3D Rendering of Lapalco Bridge over Harvey Canal

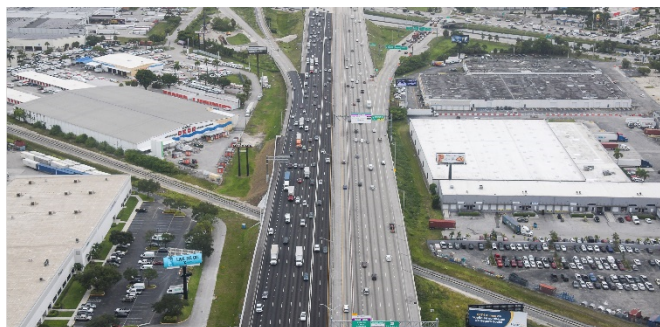
Scope of Work Relevant to the Contract:

- Road & Bridge Design using Staged Construction
- Maintains Pedestrian and Vehicular Use throughout Construction
- Geotechnical Design
- Rehabilitation/Repair Design
- Drainage Improvements
- LADOTD Standards & Specifications
- Management of Multiple Subconsultants

Key Members: Babak Naghavi, PE, PH, PhD; Timothy Noles, PE; Frederick Wetekamm, PE; Erik Diaz, PE; Linh Kim, PE; Corey Bourgeois, PE; Dalton Hunt, EI; Raymond Mankbadi, PE; Arsanious Guirguis, PE; Courtney Mai, PE; John Rayer, PE; J. Lee Adams, PE; Lauren Peytavin, EI; Rafal Wuttrich, PE; and Will Farber, EI

17. Firm Experience:

Firm name	Hardesty & Hanover		Past Performance Evaluation Discipline(s)*	Road
Project name	SR 826 Palmetto Expressway Design - Build			Firm responsibility (prime or sub?) Prime
Project number	N/A	Owner's name	Florida Department of Transportation	
Project location	Miami-Dade County, FL		Owner's Project Manager	Raul Quintela, PE
Owner's address, phone, email	1000 N.W. 111 Avenue, Miami, Florida 33172 305.470.5457 raul.quintela@dot.state.fl.us			
Services commenced by this firm (mm/yy)	04/21	Total consultant contract cost (\$1,000's)		\$66,054
Services completed by this firm (mm/yy)	02/25	Cost of consultant services provided by this firm (\$1,000's)		\$6,948



SR 826 over FEC Railroad



Metrorail under SR 826



SR 826 over Metrorail

The SR 826 Palmetto Expressway is a multi-lane, limited access **expressway crossing FEC Railroad**, connecting SR 826, I-75, Florida's Turnpike and I-95. The recent completion of express lanes revealed the need for additional operational improvements with expedited delivery through design-build. The project provides:

- An additional southbound lane, auxiliary lanes, improved shoulder widths,
- Major modifications to the NW 103rd St. interchange, revised lane access to the southbound express lanes, a new toll site, and
- Safety improvements on the adjoining frontage road system.

H&H is the lead designer, responsible for bridge, roadway, drainage, permitting, temporary traffic control, tolling, and retaining wall design and coordination of five subconsultants. Key scope items included: **Structures:** Diverse structure improvements including 3R improvements to two frontage road bridges over the Little River Canal, widening of the **southbound structures over Metrorail and FEC railroads**, widening of northbound and southbound bridges over NW 103rd Ave, and major modifications to the 103rd Ave flyover, including a pier relocation and a lane reduction. **Roadway/Drainage:** Four miles of expressway widening and resurfacing and five miles of frontage road improvements including new paved shoulders and sidewalks, while avoiding utility impacts on this schedule critical project. The drainage network includes an extensive French drain system and conversion of a conceptual permit to two construction permits.

Key innovations used to enhance constructability include:

- A revised southbound lane reduction transition to eliminate a 4-ft. bridge widening.
- Reuse of sign structures and foundations to reduce supply chain delivery issues and eliminate two water-borne foundations.
- Reconfiguration of flyover foundations to balance loading during construction and final conditions, and the use of steel towers to support the flyover during pier reconstruction.

Scope of Work Relevant to the Contract:

- Bridge Design over Railroad
- Staged Construction Maintaining Traffic
- Roadway Design
- Drainage Design

Key Members: Robert Hideck, PE; John Corven, PE; Rafal Wuttrich, PE; J. Webb Jones, PE; Erik Diaz, PE; Dennis Gowins PE; Linh Kim, PE; and Benjamin Bower, PE

17. Firm Experience:

Firm name	Hardesty & Hanover	Past Performance Evaluation Discipline(s)*	Bridge
Project name	I-395 Segmental Bridges	Firm responsibility (prime or sub?)	Prime
Project number	N/A	Owner's name	Florida Department of Transportation
Project location	Miami, FL	Owner's Project Manager	Auraliz Benitez, PE
Owner's address, phone, email	1000 NW 111 th Ave. Miami, FL 33172 305.470.5471 Auraliz.Benitez@dot.state.fl.us		
Services commenced by this firm (mm/yy)	04/17	Total consultant contract cost (\$1,000's)	\$15,955
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm (\$1,000's)	\$12,974

H&H designed five new precast segmental bridges that are a part of the SR 836/I-95/I-395 corridor upgrade in Downtown Miami urban area. The Archer Western-De Moya Joint Venture is constructing this design-build project. The segmental bridges are constructed with over 2,000 precast and cast-in-place segments erected using the balanced cantilever method. Typical span lengths range from 225 to 255 ft. supported on cast-in-place piers with auger-cast pile foundations and include C-Piers as well as integral Straddle and T-Piers. The bridge requires coordination with various third parties, **spanning over several existing railroad tracks as well as public space/parklands. This requires close coordination with ROW, expanding the footprint of the existing bridge.**

H&H created the design-build proposal and pre-bid engineering ahead of the selection process and is providing analyses, final design, shop drawings, construction engineering and the design and as-built load ratings for the segmental bridges. The project's overall construction value is \$840 million. The segmental bridges have a deck area of 700,000 square ft. (approximately \$200 million). Longitudinal and transverse load ratings of the 20 continuous structural units of segmental bridges and the integral piers was performed for both temporary and final traffic conditions for both the partially completed and completed bridges, incorporating staged construction and time-dependent analysis. Several of the bridges are connected transversely using longitudinal closure pours, requiring refined analysis in determining load distribution and structural behavior.

The load ratings are performed in accordance with the AASHTO Manual for Bridge Evaluation and the FDOT Bridge Load Rating Manual per the LRFR methodology, operating and special legal and permit vehicle rating evaluations at the service and strength limit states. Load ratings are performed both as design ratings prior to construction and as-built load ratings following construction prior to traffic. The as-built ratings consider the actual segment cast and erect dates as well as any construction modifications that may have occurred to provide an accurate assessment of the bridge capacity prior to traffic and future permit load applications.

Scope of Work Relevant to the Contract:

- Bridge Design over Railroad
- Staged Construction Maintaining Traffic throughout Construction
- Load Rating Calculations & Analysis
- AASHTO Manual for Bridge Evaluation



3D Rendering of I-395 Segmental Bridges



Brightline Rail Crossing under I-395

Key Members: John Corven, PE; Dennis Gowins PE; Ray Mankbadi, PE; and Timothy Noles, PE

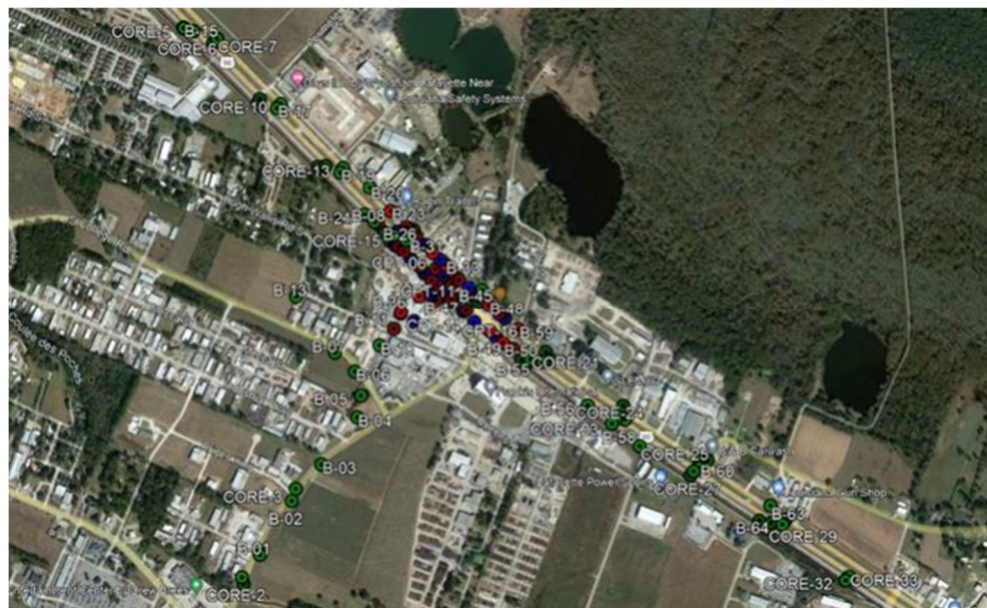
17. Firm Experience:

Firm name	Terracon Consultants, Inc.		Discipline(s)*		Geotech	
Project name	I-49 South at Verot School Road				Firm responsibility (prime or sub?)	Sub
Project number	H.011235	Owner's name	Louisiana Department of Transportation and Development			
Project location	Lafayette, LA			Owner's Project Manager	Corey Landry, PE	
Owner's address, phone, email		1201 Capitol Access Rd, Baton Rouge, LA 70802; (225) 379-1387; corey.landry@la.gov				
Services commenced by this firm (mm/yy)		06/18	Total consultant contract cost (\$1,000's)			\$468
Services completed by this firm (mm/yy)		ongoing	Cost of consultant services provided by this firm (\$1,000's)			\$468

Terracon was the geotechnical subconsultant for this contract. Terracon performed 30 deep borings, 67 shallow borings, including 33 located within the existing roadways, 15 CPT soundings, lab testing, installed and monitored piezometer, and prepared soil surveys and boring logs for planned new bridges, roadway widening, and retaining wall structures.

Prior to mobilizing exploration equipment, Terracon's drilling manager and drilling personnel conducted extensive site visits to mark boring locations, meet with private landowners and utility locators, and verify boring access and site conditions. Terracon coordinated field activities with DOTD district personnel, including the required traffic control. Traffic control, including shoulder and both daytime and overnight lane closures were required to complete several borings. Terracon mobilized multiple pieces of exploration equipment to complete all field work in a timely and provided regular updates to team members about the project.

After completing the field exploration and lab testing programs, Terracon prepared pile nominal resistance calculations for the planned bridge substructures in accordance with DOTD standards.



Terracon additionally performed stability and settlement analyses for the MSE Walls. Terracon communicated with the design team and updated the analyses and recommendations throughout the design process, as necessitated by changes in the design.

Scope of Work Relevant to the Contract:

- Geotechnical Design
- Geotechnical Laboratory Testing

Key Members: Lynne Roussel, PE, Steve Greaber, PE, Ryan Poindexter, PE, Matthew Minton

17. Firm Experience:

Firm name	Terracon Consultants, Inc.		Discipline(s)*	Geotech
Project name	US 71 Emergency Bridge Repair		Firm responsibility (prime or sub?)	Sub
Project number	H.014361	Owner's name	Gresham Smith	
Project location	Shreveport, LA		Owner's Project Manager	John Weres, PE
Owner's address, phone, email	10000 Perkins Rowe #280, Baton Rouge, LA 70810; (225) 960-5480; john.were@greshmansmith.com			
Services commenced by this firm (mm/yy)	05/20	Total consultant contract cost (\$1,000's)		\$13
Services completed by this firm (mm/yy)	08/20	Cost of consultant services provided by this firm (\$1,000's)		\$13



Terracon was the geotechnical subconsultant for this contract. The project involved the repair of the east abutment of the N. Market Street (US 71) bridge over the KCS railroad in Shreveport, Louisiana, which was damaged by a train derailment. The project included repairing damaged steel columns and constructing a new cast-in-place reinforced concrete crash wall to protect the bridge bent, supported by a deep foundation system.

Terracon provided geotechnical engineering services that included subsurface exploration through a deep soil boring and a shallow hand auger, laboratory testing, and evaluation of site soil and groundwater conditions.

Terracon developed geotechnical recommendations for foundation design, excavation and shoring considerations, and construction sequencing, and provided soil parameters to support the design of a helical pile foundation system and temporary cofferdam.

Terracon also performed lateral load analyses to support foundation performance criteria and provided seismic site classification and general construction recommendations to support the implementation of the emergency repairs.

Scope of Work Relevant to the Contract:

- Geotechnical Engineering Services
- Geotechnical Laboratory Testing

Key Members: Lynne Roussel, PE, Steve Greaber, PE, Matthew Minton

17. Firm Experience:

Firm name	Terracon Consultants, Inc.		Discipline(s)*	Geotech
Project name	Nelson Road Extension and Bridge		Firm responsibility (prime or sub?)	Prime
Project number	H.011235	Owner's name	Louisiana Department of Transportation and Development	
Project location	Lafayette, LA		Owner's Project Manager	Kristy Smith, PE
Owner's address, phone, email	1201 Capitol Access Rd, Baton Rouge, LA 70802; (225) 379-1387; Kristy.Smith2@la.gov			
Services commenced by this firm (mm/yy)	07/18	Total consultant contract cost (\$1,000's)		\$364
Services completed by this firm (mm/yy)	06/21	Cost of consultant services provided by this firm (\$1,000's)		\$364

Terracon provided soil borings, lab testing, boring logs, and engineering for a planned roadway extension and bridge.

Terracon provided pile nominal capacity calculations and recommendations for resistance factors for design.

Terracon also provided design support for impact dolphins to be placed in front of the bridge to protect the superstructure from impact by large ships from the adjacent Port of Lake Charles.

**Scope of Work Relevant to the Contract:**

- Geotechnical Design
- Geotechnical Laboratory Testing

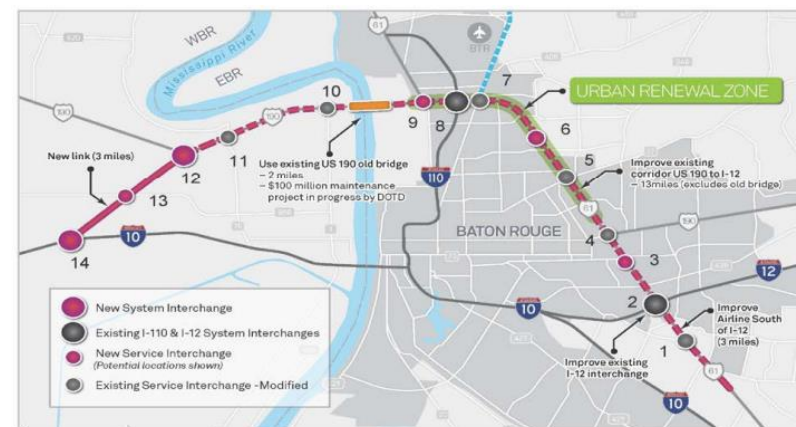
Key Members: Lynne Roussel, PE, Steve Greaber, PE, Ryan Poindexter, PE, Matthew Minton

17. Firm Experience:

Firm name	Neel-Schaffer, Inc.	Discipline(s)*	Traffic
Project name	Baton Rouge Northern Bypass Expressway	Firm responsibility (prime or sub?)	Prime
Project number	44-25299, TO #4 (H.016168.1)	Owner's name	Louisiana Department of Transportation and Development
Project location	Baton Rouge, LA	Owner's Project Manager	Melissa Lebas
Owner's address, phone, email	1201 Capitol Access Rd, Baton Rouge, LA, 70802, 225-379-1039, melissa.lebas@la.gov		
Services commenced by this firm (mm/yy)	02/25	Total consultant contract cost (\$1,000's)	\$642
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm (\$1,000's)	\$612

Neel Schaffer is expanding and refining an existing Dynameq mesoscopic traffic model to support planning level evaluation and conceptual design of the proposed Baton Rouge Northern Bypass as part of the Baton Rouge Urban Renewal and Mobility Plan (BUMP). The effort evaluates current and future traffic operations across the greater Baton Rouge region, including East and West Baton Rouge Parishes, with emphasis on the US 61 and US 190 corridors.

The work includes review of prior corridor studies, evaluation of existing calibrated mesoscopic models, and integration of the Capital Region Planning Commission's MOVE 2046 travel demand model. Comprehensive data collection supports model development, including traffic volumes, turning movements, origin destination patterns, probe-based travel time and speed data, and traffic signal inventories. These data are used to establish peak periods and are documented in a formal data collection report.



Using MOVE 2046 outputs, Neel-Schaffer is developing, updating, and validating the base year mesoscopic traffic model, including refinements to traffic analysis zones, roadway networks, intersection controls, and trip matrices. The model is calibrated and validated to observed traffic volumes and travel times along key regional corridors. Future year No Build models are then developed for 2030 and 2046 to reflect planned improvements and forecast travel demand.

The Build modeling effort applies the validated mesoscopic model to evaluate the operational and system level impacts of BUMP expressway concepts under future conditions. Build models are developed for 2046 and analyzed for AM and PM peak periods. The models represent the full BUMP facility, including expressway mainlines, frontage roads, interchanges, and connections to the regional roadway network. Scenarios are evaluated with and without tolling to assess demand, diversion, throughput, bottlenecks, and access needs. Up to 20 "what if" alternatives are tested, with measures of effectiveness used to compare performance and support refinement of final Build alternatives for documentation in traffic analysis reports.

Scope of Work Relevant to the Contract:

- Mesoscopic Traffic Model
- Traffic Analysis
- Comprehensive Data Collection

Key Members: Vijay Kunada, PE, PTOE, PTP and Charles LeBoeuf, PE, PTOE

17. Firm Experience:

Firm name	Neel-Schaffer, Inc.		Discipline(s)*		Traffic	
Project name	I-10 / 12 College Flyover Ramp Design Build				Firm responsibility (prime or sub?)	Sub
Project number	H.013897	Owner's name	Louisiana Department of Transportation and Development			
Project location	Baton Rouge, LA			Owner's Project Manager	Catherine Mastin, PE	
Owner's address, phone, email		P.O. Box 94245, Baton Rouge, LA 70804; (225) 379-1652; catherine.mastin@la.gov				
Services commenced by this firm (mm/yy)		08/20	Total consultant contract cost (\$1,000's)			\$971
Services completed by this firm (mm/yy)		Ongoing	Cost of consultant services provided by this firm (\$1,000's)			\$971

This project improves the safety and flow of traffic between the I-10/I-12 Split and College Drive by eliminating lane changes that must occur when I-10 WB traffic exits at College Drive. The proposed project realigns the two existing I-12 WB through lanes to more closely follow the I-12 EB existing alignment and replaces the I-10 WB Overpass Bridge with a new structure. In addition, the project physically separates College Drive NB from the free flow lane which connects the I-10 WB exit ramp to Corporate Boulevard. Neel-Schaffer is tasked with performing the traffic engineering and modeling using Vissim and Dynameq software, Interstate Modification Report, Transportation Management Plan (TMP), traffic signal design and is providing the Independent Technical Review for Roadway Design and Traffic Control Plans.

Neel-Schaffer's tasks include:

- Field Observations
- VISSIM Modeling
- Prepare the Interstate Modification Report
- Transportation Management Plan (TMP) including Mesoscopic Modeling using Dynameq
- Independent Technical Review (ITR) for the Roadway Design and Traffic Control Plans

**Scope of Work Relevant to the Contract:**

- Mesoscopic Modeling use Dynameq
- Traffic Engineering

Key Members: Ellen Burke Howard, PE, PTOE, RSP2i; Vijay Kunada, PE, PTOE, PTP; and Charles LeBoeuf, PE, PTOE

17. Firm Experience:

Firm name	Neel-Schaffer, Inc.	Discipline(s)*	Traffic
Project name	MRB South GBR: LA 1 to LA 30 Connector	Firm responsibility (prime or sub?)	Sub
Project number	H.013284	Owner's name	Louisiana Department of Transportation and Development
Project location	Baton Rouge, LA, Metro Area	Owner's Project Manager	Christina Brignac
Owner's address, phone, email	P.O. Box 94245, Baton Rouge, LA 70804; 225-379-1394; Christina Brignac, Christina.Brignac@la.gov		
Services commenced by this firm (mm/yy)	07/20	Total consultant contract cost (\$1,000's)	\$6,000
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm (\$1,000's)	\$868

This project involves the development of a new Mississippi River bridge between LA 1 on the West Bank and LA 30 on the East Bank, along with new interchanges at each terminus. The project vision is to enhance redundancy in the Greater Baton Rouge Area's cross-river transportation network and to locate the new facility where it will maximize daily usage. The project is being advanced using a process similar to the one proposed for the Lafayette Regional Expressway (LRX), Phase 1 – Enhanced Planning Study and Phase 2 – NEPA Process.

Neel-Schaffer developed a calibrated and validated regional mesoscopic model using Dynameq, covering the study area along the west bank of the Mississippi River between I-10 and LA 70. The mesoscopic model was chosen to more accurately evaluate traffic and mobility impacts within an already severely congested regional network. The model network incorporated detailed roadway and intersection geometry, traffic control features, and signal timing plans. Dynamic Traffic Assignment (DTA) was employed to simulate individual vehicle behavior—including car-following, lane-changing, and gap-acceptance—resulting in realistic traffic operations. Importantly, this methodology allows traffic to reroute at defined time steps based on real-time congestion conditions, a capability that traditional macroscopic models cannot provide. Mesoscopic models were developed for the 2019 Base scenario, the 2042 No Build scenario, and 20 initial bridge route alternatives.

Challenges: The initial bridge screening process required evaluating 20 potential bridge route alternatives, with only three ultimately needing to advance to the NEPA phase.

Solutions: Neel-Schaffer developed mesoscopic models for all 20 initial bridge alternatives. Travel time results were compared across alternatives, and these comparisons played a key role in selecting the three alternatives carried forward into the NEPA phase.



Neel-Schaffer is currently conducting a detailed traffic study for the NEPA phase.

Scope of Work Relevant to the Contract:

- Alternatives Screening
- Traffic and Tolling Analyses
- New Corridor
- Public Involvement across Multiple Parishes

Key Members: Vijay Kunada, PE, PTOE, PTP and Charles LeBoeuf, PE, PTOE

17. Firm Experience:

Firm name	SJB Group, LLC.	Past Performance Evaluation Discipline(s)*	Survey
Project name	LA 1 to LA 415 Connector to Interstate 10	Firm responsibility (prime or sub?)	Prime
Project number	H.005121	Owner's name	LADOTD
Project location	Port Allen, West Baton Rouge Parish, Louisiana	Owner's Project Manager	Jonathan Herrod
Owner's address, phone, email	1202 Capital Access Road, Baton Rouge, LA 225-379-1105 Jonathan.Herrod@la.gov		
Services commenced by this firm (mm/yy)	10/23	Total consultant contract cost (\$1,000's)	\$1,117
Services completed by this firm (mm/yy)	12/24	Cost of consultant services provided by this firm (\$1,000's)	\$243

This project provides field data for the final design of a roadway to connect LA 1 to LA 415. The project is a supplement to previously performed surveying for the realignment of them due to recent development and construction. The project limits included a 2.9-mile corridor beginning approximately 0.2 miles north of the intersection of I-10 and LA 415 and continuing in a southeasterly direction along the extension of LA 415 across the intercoastal canal, industrial areas, and agriculture field to the intersection of LA. The project limits also include an approximate 1.8-mile corridor along LA 1 that extends from the roadway into residential, commercial, and retail areas.

The project includes the collection of current conditions of the areas included in the project limits and merging the current data with the previous survey and updating any observed condition changes. The project included the recovery and supplement of the existing control network. The collection of field data is completed through the utilization of conventional survey methods with survey total stations and global positioning systems (GPS). Mobile LiDAR survey methods utilized for the collection of data along the high traffic segments of LA 1, Interstate 10 ramps, and LA 415.

The data was processed through Trimble Business Center, with data extraction performed through TopoDot. The survey is being conducted according to the Louisiana Department of Transportation and Development Location and Survey Manual. The deliverables were provided in accordance with the LADOTD guidelines for electronic deliverables.

**Scope of Work Relevant to the Contract:**

- Topographic Survey
- Subsurface Utility Engineering (SUE)

Key Members: Charles "Tim" Brewer, PLS

17. Firm Experience:

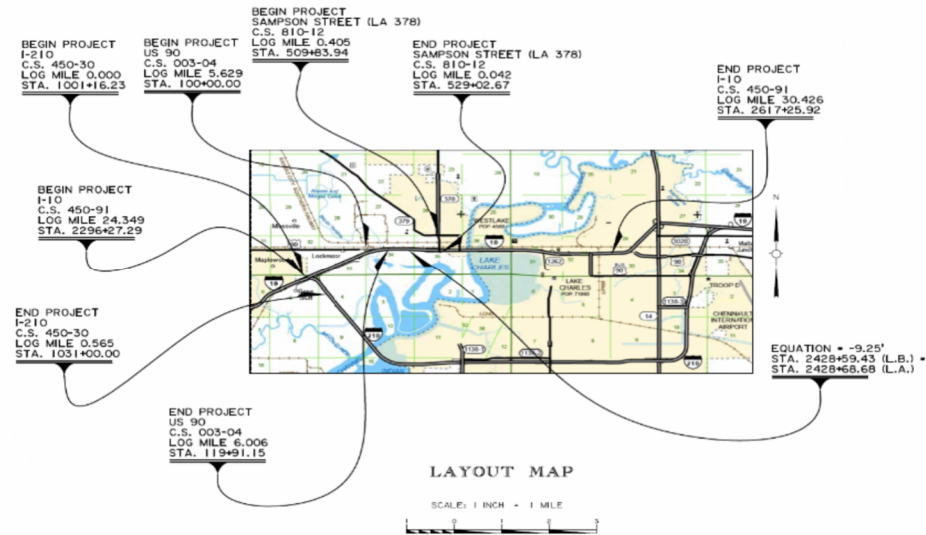
Firm name	SJB Group, LLC.	Past Performance Evaluation Discipline(s)*	Survey
Project name	I-10 Calcasieu River Bridge Public-Private Partnership Project	Firm responsibility (prime or sub?)	Sub
Project number	H.003931	Owner's name	LADOTD
Project location	Calcasieu Parish, Louisiana	Owner's Project Manager	Paul Vaught, PE
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802 225-379-1816 paul.vaughtiii@la.gov		
Services commenced by this firm (mm/yy)	08/24	Total consultant contract cost (\$1,000's)	\$130
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm (\$1,000's)	\$3

SJB Group is undertaking critical tasks for the I-10 Calcasieu River Bridge project, including Property Surveying, limited Topographic Surveying (to verify and supplement existing topographic surveys), and Utility Coordination throughout the project limits. This initiative is the largest in the history of the LADOTD and one of North America's most substantial infrastructure projects commissioned in 2023. The existing bridge demolition and replacement will have a significant impact on existing properties and utility facilities within the limits of the project which is a heavily congested residential, commercial and industrial corridor.

The Property Surveying work covers a 5.5-mile stretch of Interstate 10 within the design-build boundaries. This extensive task involves thorough title research to gather existing surveys and deeds, field surveying, and mapping for all parcels along the corridor. The range of properties includes small residential lots to large commercial and industrial tracts. Right-of-way acquisition will be necessary for segments of the project. All property surveys and Right-of-Way Mapping will adhere to the Standards of Practice for route surveys set forth by the Louisiana Professional Engineering and Land Surveying Board, as well as LADOTD's Location and Survey Manual

requirements. The technical provisions of the project require the developer to verify and confirm the location, accuracy and datum of the survey control network provided by DOTD in the bid phase of the project. This was completed using a control network from the provided network to establish fixed horizontal coordinate results for each location of the provided control. There will also be additional topographic surveys necessary to supplement the topographic survey provided by DOTD.

The bridge relocation and the reconfiguration of interchanges will extensively impact utilities within the project limits. These utilities include both local, municipally owned infrastructure to large industrial pipelines. The coordination of these utilities' relocation is a complex, iterative process requiring collaboration with LADOTD, developers, property owners, and utility stakeholders to ensure the project adheres to budget and schedule constraints.



Scope of Work Relevant to the Contract:

- Property Survey
- Topographic Survey
- Right-of-Way Mapping
- Subsurface Utility Engineering (SUE)

Key Members: Charles "Tim" Brewer, PLS

18. Approach and Methodology:

PROJECT UNDERSTANDING

H&H understands that this contract encompasses two distinct but interrelated projects on US 71 in Caddo Parish, both over KCS Railroad, under a **compressed project timeline**. The projects require coordination of railroad and roadway access to allow surveying and subsurface investigation to be done in a timely manner to deliver both projects efficiently within the contract period.

H.012008 – US 71: ICG Railroad Overpass Rehab (HBI). This project involves the rehabilitation of Recall No. 014400, a 293-foot-long steel I-beam bridge constructed in 1937. Classified as a **Preservation Priority** under the Statewide Historic Bridge Plan, this structure will be retained in long-term use. Rehabilitation must improve the overall condition of the bridge, extend its service life, and improve its load rating per BDEM Guidelines—while preserving original character-defining features and historic fabric to the extent possible. The scope extends through preliminary plans development (60%/90%/100%), with final plans and construction support to be handled under a supplemental agreement.

H.012009 – US 71: Market St Bridge Over ICG RR (HBI). This project involves the replacement of Recall Nos. 014410 and 014420, two 585-foot-long steel I-beam bridges built in 1940, with a single new structure. The replacement requires evaluation of bridge type alternatives, construction phasing to maintain traffic over an active KCS railroad, and development of a Level 2 Transportation Management Plan. The scope likewise extends through preliminary plan development, with final plans and construction support by supplemental agreement.

Both projects share KCS Railroad coordination requirements and their traffic impacts overlap necessitating an integrated project management approach. The work demands frequent communication with DOTD, early and sustained coordination with KCS.

PROJECT TEAM

H&H has assembled a team with direct, relevant experience in railroad overpass rehabilitation, bridge replacement over an active rail corridor, and LADOTD project delivery. Each subconsultant was selected to match the specific disciplines required by this contract and to provide depth across all scope areas.

Project Manager Dr. Babak Naghavi, PE, PH, PhD brings 43 years of engineering and project management experience, including 25 years at LADOTD where he participated in multiple complex projects, successfully executing contract management, financial management, and development of scope and compensation. Dr. Naghavi's thorough understanding of DOTD project delivery requirements for railroad overpass projects will ensure this contract is executed efficiently.

Project Engineer Erik Diaz, PE brings 18 years of DOTD structural design experience in bridge rehabilitation, bridge replacement, and railroad coordination projects. Our project team is committed to partnering with DOTD and project stakeholders to create a robust approach and cost-efficient delivery.

Constructability Reviewer Fred Wetekamm, PE brings 36 years of bridge and roadway construction experience, including 25 years with DOTD.

Firm	Discipline/Role	Value to Contract
	Bridge Design (Rehab & Replacement), Roadway Design, Environmental Coordination, Project Management	Railroad overpass specialists; recent LADOTD bridge rehab and replacement projects; 43 years of PM experience with DOTD delivery process
	Geotechnical Investigation & Design, Laboratory Testing, Environmental	Louisiana soils expertise; DOTD-standard gINT deliverables; accredited lab with full ASTM/AASHTO testing capabilities
	Traffic Study, Mesoscopic Modeling (DYNAMEQ), Safety Analysis, TMP Development	PTOE-certified staff; 5+ mesoscopic models on DOTD projects; DOTD TEPR-trained personnel
	Topographic Survey, LiDAR, Railroad Corridor Survey	LiDAR-first strategy minimizes railroad exposure; KCS permitting experience; full DOTD ORD deliverable proficiency

H&H has successfully delivered DOTD projects with these firms and maintains strong working relationships that eliminate coordination delays. Our team's combined experience on railroad overpass projects—including the **Almonaster Ave Bridge** (circa-1920 bascule bridge rehabilitation over Industrial Canal with active railroad crossing and railroad coordination), the **North Bridge over Intercoastal Waterway & FEC Railroad** (new high-level bridge using staged construction spanning over existing tracks, maintaining vehicular and rail traffic throughout construction), the **SR 826 Palmetto Expressway** (bridge widening over Metrorail and FEC Railroad with continuous rail operations), and the **I-395 Segmental Bridges** (spanning over multiple existing railroad tracks requiring close ROW coordination)—provides directly transferable expertise for the US 71 KCS corridor.

H.012008 – ICG OVERPASS REHABILITATION APPROACH

This bridge is classified as a **Preservation Priority** under the LADOTD Statewide Historic Bridge Plan. As such, this structure will be retained in long-term use and is subject to preventative maintenance, preservation, and rehabilitation. The preferred treatment is to retain existing geometries, original character-defining features, and historic fabric to the extent possible.

As a Preservation Priority bridge, projects following the Statewide Historic Bridge Plan are expected to result in a “No adverse effect” finding. Our team with DOTD historic bridge training (per MPR No. 11) will be actively involved in evaluating how proposed remediation strategies affect the bridge's historic character. H&H's approach follows the structured evaluation framework established in BDEM Chapter 6 as presented below.

Document Review (BDEM Section 6.2.1)

H&H will review all existing project documents including as-built plans, shop drawings, inspection reports, load rating reports, accident records, maintenance records,

geotechnical and test pile information, and any prior rehabilitation history. This thorough review allows our team to develop a complete understanding of the structure's original design intent and current condition.

Site Inspection (BDEM Section 6.2.2)

H&H will conduct a field visit in coordination with the DOTD Project Manager and District 04 personnel. The visit will assess conditions including environmental impacts, railroad impacts, utility relocation needs, right-of-way (ROW) impacts, permit issues, possible roadway detour alternatives and detour lengths, and existing approach roadway geometry. For the structure itself, H&H will document the condition of superstructure, substructure, and approach slabs. As-built plans will be verified against field conditions. The intent of this field visit is to evaluate and confirm the types and extents of needed repairs and to determine how existing conditions might cause constructability issues or affect possible alternatives. Findings will be verified against the bridge inspection and rating reports. All safety requirements per DOTD Bridge Inspection Manual and applicable OSHA regulations will be followed, and KCS requirements will be observed for all work near or within railroad ROW.

Remediation Strategy Development (BDEM Sections 6.2.3 & 6.2.4)

Following the field investigation, H&H will determine whether existing load ratings need to be updated based on inspection findings. H&H will determine the rehabilitation scope using the BDEM Section 6.2.4 evaluation matrix. The HL-93 Inventory rating threshold of 0.9 will govern the minimum scope determination. For each identified deficiency, multiple remediation strategies will be developed considering effectiveness, impact on historic character-defining features, lane and bridge closure requirements, constructability over the active KCS corridor, and cost. Because this is a Preservation Priority structure, every proposed repair will be evaluated for its effect on the bridge's historic integrity—favoring methods that preserve original fabric while achieving required structural performance.

Strategies will be presented to DOTD at a **Remediation Strategies Meeting** with preliminary plan drawings showing existing and repaired conditions, and a Scope of Work Report.

Preliminary Plan Development

Following DOTD concurrence on remediation strategies, H&H will develop preliminary plans through the **60%/90%/Plan-in-Hand/100%** milestone sequence. Plans will include all sheets and deliverables identified in the scope of services and BDEM. Bridge Design Criteria will be submitted for approval prior to proceeding with design. Final Plan Development and Construction Support will be handled by Supplemental Agreement.

H.012009 – MARKET ST BRIDGE REPLACEMENT APPROACH

The replacement of two 585-foot-long steel I-beam bridges with a single new structure in an active urban railroad corridor presents design and constructability challenges. H&H's approach draws directly from our experience on similar railroad overpass replacement projects, including the **North Bridge over Intercoastal Waterway & FEC Railroad** (new high-level fixed bridge using staged construction over existing rail tracks, eliminating the grade crossing with the new bridge spanning over existing tracks) and the **I-395 Segmental Bridges** (five new bridges spanning over multiple existing railroad tracks in an urban area, requiring close coordination with ROW).

Site Visit and Document Review

H&H will review as-built plans, existing load ratings, inspection reports, alignment studies, existing ROW, traffic data, and all other available data. A field visit will assess site conditions including environmental impacts, railroad impacts, utility relocation, ROW impacts, permit issues, possible roadway detour alternatives and length of detour, existing approach roadway section and geometry, and constructability constraints. H&H will determine how existing conditions affect possible construction.

Bridge Type Alternatives

Replacing two side-by-side structures with a single new bridge over a railroad corridor requires that bridge type selection and construction phasing be evaluated together. Each alternative must balance structural efficiency, vertical and horizontal clearance requirements, railroad work window constraints, and the ability to maintain traffic during construction. H&H will evaluate the following structural alternatives alongside their associated phasing strategies:

Option 1: Steel Multi-Girder: This alternative uses standard slab spans for approaches and steel multi-girder spans for the main crossing over the railroad tracks, similar to the existing bridge configuration. Steel lends itself well to phased construction because individual girders can be erected with smaller cranes and shorter pick durations, allowing work to be completed within restricted KCS work windows. Longer spans are achievable with steel, which can reduce the number of piers within the railroad ROW and minimize disruption to KCS operations. Steel also accommodates field modifications if conditions differ from design assumptions.

Option 2: Prestressed LG Girder: This alternative uses standard slab spans for approaches and prestressed LG girders for the main spans. Prestressed concrete can achieve shallower sections compared to steel for shorter span lengths, which directly reduces approach grades and improves vertical clearance over the railroad. Long-term maintenance costs and future inspection complexity are also lower with prestressed concrete. However, prestressed girders require larger cranes and longer erection windows for girder placement, which must be weighed against KCS work window restrictions. If clearance and crane access permit, girder placement can be accelerated by setting multiple girders in a single railroad closure using pre-staged equipment.

Option 3: Hybrid Steel/Prestressed: This alternative uses standard slab spans for approaches, prestressed concrete girders for the shorter spans away from the railroad, and steel plate girders for the main spans directly crossing KCS. The hybrid approach takes advantage of steel's erection flexibility and potential for reduced pier count within the railroad ROW, while gaining the economy and durability of prestressed concrete in the approach spans where railroad work window constraints do not apply.

The new bridge typical section will meet current standards for lane and shoulder widths, barrier type, and cross slope, with the final configuration informed by the traffic study and coordination with the DOTD. Approach roadway design will address any changes in geometry necessitated by the new structure. Drainage design will include evaluation of the approach roadway drainage to determine whether modifications or new drainage facilities are required. A detour route analysis will be coordinated with the traffic study to identify feasible alternatives for maintaining access during construction, with attention to detour length, capacity, and impacts to local access and emergency response.

H&H will evaluate Accelerated Bridge Construction (ABC) techniques where they offer schedule or safety advantages. Potential ABC methods include prefabricated elements to reduce the duration of work within the KCS ROW, top-down construction sequencing to minimize ground-level activity near active tracks, and pre-assembled girder and deck sections that can be set during overnight or weekend railroad closures. The applicability of each technique will be assessed based on site geometry, crane access, KCS operational requirements, and cost-effectiveness. New substructures will be driven piles or drilled shafts per the scope expectations. Bridge Design Criteria will be submitted to the DOTD Project Manager for approval prior to proceeding with design.

TRAFFIC STUDY

Neel-Schaffer's (NSI) approach to the Traffic Study for both State Project Nos. H.012008 and H.012009 centers on the application of a DOTD-provided **DYNAMEQ mesoscopic traffic model** to evaluate and optimize Maintenance of Traffic (MOT) strategies during construction. This approach provides a robust, system-level assessment of traffic operations under various construction staging, lane closure, and detour scenarios while maintaining consistency with DOTD Traffic Engineering Process and Report guidance and applicable FHWA requirements.

NSI will begin by reviewing existing traffic volumes, crash data, roadway functional classifications, and the DOTD-supplied DYNAMEQ model to confirm network limits, assumptions, and calibration parameters. Traffic counts and field observations will be collected as needed to refine model inputs and ensure the model accurately reflects existing operating conditions. Traffic volumes will be developed using DOTD-approved methodologies to represent future conditions and anticipated construction-period demand. The calibrated DYNAMEQ model will simulate and compare multiple MOT alternatives, including staged construction scenarios, lane reductions, temporary traffic shifts, and detour routes. Model outputs—queue lengths, delay, travel time, and diversion patterns—will be evaluated to identify operational and safety impacts to the project corridor and surrounding network. A **safety analysis** will be performed to assess traffic exposure, conflict areas, and potential impacts to local access and emergency response. Results will be documented in a Traffic Study Report with conceptual cost estimates for each alternative. Deliverables include Project Management Plan, data collection plan, safety analysis, existing and no-build analysis, alternative analysis, final report, and conceptual cost estimates.

TOPOGRAPHIC SURVEY SERVICES

SJB Group will deliver complete, design-grade topographic surveys for both bridge sites using a **LiDAR-first strategy** designed for constrained rail and roadway environments. Mobile LiDAR will map the roadway, approaches, and side streets with minimal lane impact, while static laser scanning will capture the substructure, superstructure, abutments, and adjacent tie-ins from safe positions clear of traffic. sUAS imaging will supplement overhead and perspective geometry where beneficial. In areas where LiDAR is obstructed SJB will use traditional methods, including RTK, total stations, and precise leveling, to ensure accurate breaklines and feature attribution.

All mapping will be tied to DOTD default datums using a project-specific control network established through primary static GNSS, with secondary RTK and traverse control

extending throughout both sites and across the KCS corridor. For work within or adjacent to the railroad, SJB will comply with KCS permitting, safety training, and flagging requirements, coordinate right-of-entry, and minimize on-track exposure by completing the majority of geometry collection using mobile LiDAR from outside the track zone. KCS Approved flaggers will be present for all activities near or within railroad ROW.

Each survey will begin and end 500 feet beyond either end of the respective structure, extend 300 feet down all side streets within the survey limits, and cover the full width from apparent ROW to apparent ROW. Track profiles will extend at least 1,000 feet beyond each side of the proposed structure, with top-of-rail elevations collected at intervals no greater than 50 feet. Data points will be collected at switch points, milepost markers, railroad signage, structures, equipment, and at the center and each edge of all at-grade railroad crossings. Utility information will be obtained directly from utility stakeholders, with SUE capabilities available if DOTD elects to include them. All deliverables will conform to DOTD survey and CAD standards.

GEOTECHNICAL INVESTIGATION AND DESIGN

Terracon will provide geotechnical investigation services. Their approach prioritizes early characterization of subsurface conditions, recognition of railroad-specific constraints, and adherence to LADOTD requirements to mitigate geotechnical risk and facilitate efficient foundation design.

Pre-field research will draw on available DOTD records and Terracon's extensive Louisiana subsurface database to anticipate soil stratigraphy and groundwater conditions and to optimize the exploration program. Field investigations will include bridge borings advanced to depths sufficient to support driven pile or drilled shaft foundation recommendations, supplemented by cone penetration test (CPT) soundings where warranted to refine soil classification and engineering parameters. Shallow subgrade borings will be performed near bridge approaches to evaluate roadway and embankment support conditions.

Throughout design development, Terracon will coordinate with the H&H, DOTD staff, and other project disciplines. Our geotechnical engineers will be available to discuss subsurface conditions, foundation alternatives, and constructability considerations—including pile or drilled shaft installation, temporary support of excavation, and railroad operational constraints. This collaborative approach supports **early identification of design and construction risks, reduces the potential for change orders, and promotes efficient construction sequencing.**

PRELIMINARY COST ESTIMATE

H&H will produce preliminary cost estimates for all proposed alternatives on both projects. For H.012008, the estimate will account for construction phasing, maintenance of traffic, and lifecycle costs. For H.012009, the various construction sequence, structural, and geotechnical options will be presented alongside their associated costs for both technical and cost-effectiveness evaluation. H&H's cost estimation approach accounts for the realities of construction over a critical railroad corridor—including KCS flagging requirements, restricted work windows, staged construction phasing, and temporary traffic control—informed by our direct experience on the **North Bridge/FEC Railroad** and **SR 826 Palmetto Expressway** projects.

ENVIRONMENTAL ASSESSMENT

Both projects are expected to qualify as Categorical Exclusions (CE). H&H will provide all required information necessary for CE documentation. Should the environmental investigation suggest that either project falls outside the CE expectation, H&H will stop work and notify the Project Manager immediately as required by the scope of services.

RAILROAD COORDINATION

Railroad coordination is a critical activity that influences survey access, geotechnical field work, design decisions, construction phasing, and cost for both projects. **Railroad Coordinator Howard Swanson, PE, SE will establish early coordination with KCS Railroad** to understand operational constraints, define requirements for railroad ROW access, and confirm clearance requirements. Work will be performed outside of the railroad ROW whenever possible.

When work within KCS ROW is required, H&H will coordinate flagging, safety training, and right-of-entry through established KCS protocols. H&H's team brings direct experience managing railroad coordination on projects including the **Almonaster Ave Bridge** (active railroad crossing through the bridge site), the **North Bridge over FEC Railroad** (extensive railroad coordination for staged construction spanning over existing tracks), and the **SR 826 Palmetto Expressway** (structures over both Metrorail and FEC Railroad requiring continuous rail coordination). This experience allows our team to anticipate KCS requirements and incorporate them into the design and schedule from the outset rather than reacting mid-project causing delays.

PROJECT MANAGEMENT

H&H will manage both projects under a unified project management structure, with Dr. Naghavi serving as the point of contact with the DOTD Contract Manager. This management approach ensures that decisions on one project are evaluated against impacts on the other—particularly with respect to railroad coordination, traffic management, and sequencing. H&H has a strong understanding of DOTD's Plan Delivery Process.

Project Initiation: Dr. Naghavi will meet with the DOTD PM to review the scope and develop a project-specific Project Management Plan (PMP), schedule, plan review and coordination meetings, design criteria, anticipated delivery milestones, QC plan, risk register, utility needs, communications plan, and road design report.

Kickoff Meeting: Dr. Naghavi will coordinate a kickoff meeting with the DOTD PM and pertinent staff to discuss primary goals, review the draft PMP, and collect additional existing information. After the meeting, we will coordinate a site visit with district staff.

Project Tracking: Monthly schedules, progress reports, and invoices using DOTD standard forms with Contract Tracking spreadsheet included with each invoice.

SCHEDULE

Given the **compressed project timeline**, H&H will dedicate experienced personnel to both projects, initiate the traffic study immediately after kickoff, conduct geotechnical and survey work in parallel, and maintain close DOTD PM coordination through regular meetings and updates. The following schedule reflects our approach to completing both projects within the contract period:

Task/Milestone	H.012008 (Rehab)	H.012009 (Replace)
NTP / Kickoff / PMP	Month 1	Month 1
Traffic Study (Joint)	Months 1–4	Months 1–4
Topographic Survey	Months 2–4	Months 2–4
Geotechnical Investigation	Months 2–4	Months 2–4
Doc. Review & Site Inspection	Months 2–4	Months 2–4
Remediation / Alternatives Dev.	Months 5–6	Months 5–6
Remediation Strategies Meeting	Month 7	—
60% Preliminary Plans	Months 7–10	Months 7–10
90% Preliminary Plans	Months 11–15	Month 11–15
Plan-in-Hand Meeting	Month 16	Month 16
100% Preliminary Plans	Months 16–18	Month 16–18
Final Plans/Const. Support	Supp. Agreement	Supp. Agreement

Upon project initiation, a more detailed schedule will be provided identifying all major milestones in accordance with DOTD standards.

DELIVERABLES

All deliverables will conform to DOTD Software and Deliverable Standards. Deliverables will be uploaded directly into the DOTD ProjectWise repository at each delivery milestone. Deliverables include topographic survey, geotechnical reports, proposed schedule, bridge design criteria, scope of work report, remediation strategies (H.012008), traffic study report, TMP, constructability review form, design waivers/exceptions if required, 60%/90%/100% preliminary plans, construction sequence, and preliminary cost estimate. Additional deliverables including Final Design Documents will be authorized by supplemental agreement.

QUALITY ASSURANCE/QUALITY CONTROL

A QA/QC Plan has been prepared in accordance with BDEM Part I, Chapter 3, Appendix G and is included with this submittal. H&H has committed to fostering the improvement of quality by generating a project-specific Quality Management Plan (QMP) that provides tools and guidance to the project team so that professional services are performed and delivered to the satisfaction of project requirements, and within the allocated schedule and budget. The QMP includes the H&H standard QA/QC Plans, which together form our Quality Management System (QMS). This QMS is a living document continually assessed and revised to reflect best practices and lessons learned. QC reviews are performed at every milestone submittal, to identify and correct issues early. The prime consultant is fully responsible for QA/QC of our work as well as the work of all subconsultants, and all project submittals will meet the requirements of the QA/QC plan document.

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 2	Bridge Inspection of Complex Structures LADOTD Movable Bridge Inspection Manual	\$462,208
	Bridge	4400023511; H.009730.5 Task 4	Bridge Inspection of Complex Structures SNBI Data Collection	\$973
	CE&I/OV	4400017430; H.001498.6	LA 24 and LA 316: Company Canal Bridge, Terrebonne Parish	\$191,608
	Bridge	4400023909; H.002244.5 Task 2	IDIQ Contract for Movable Bridge Preservation Boudreaux Canal (Mechanical)	\$92,715
	Bridge	4400023909; H.015963.5 Task 4	IDIQ Contract for Movable Bridge Preservation Boudreaux Canal (Structural)	\$5,841
	Bridge	4400023909; H.015963.6 Task 5	IDIQ Contract for Movable Bridge Preservation Red River MB Ped Gates (Jackson St)	\$94,501
	Bridge	4400023909; H.002798.6 Task 6	IDIQ Contract for Movable Bridge Preservation Bayou Teche Bridge (Oaklawn) Arc-Flash	\$36,000
	CE&I/OV	4400024021; H.015028.6	LA 302: Bayou Barataria MB Replacement Route: LA 302	\$4,051,923
	CE&I/OV	4400024022; H.002264.6	LA 302: Bayou Barataria MB Replacement Route: LA 302, LA 47, and LA 3257	\$950,502
	Bridge	4400021516; H.011962; H.012063; H.013818; H.011986; H.012734	Contract 4 for Movable Bridges (5) – Original contract plus Supplemental Agreement (SA) No 1	\$2,323,072
	Bridge	4400021516; H.013818	Contract 4 for Movable Bridges (5) – SA No. 2	\$2,179,684
	Bridge	4400026585; H.006226.5	Point-a-la-Hatche Ferry Landing Replacement	\$2,065,634
Neel-Schaffer, Inc.	Planning	SPN 736-99-1548	Travel Demand Model Support Services Statewide (PRIME)	\$43,608
	Traffic	4400010428 S.A. 6, H.004774.5; H.007300	Kansas Lane: Garrett Road Connector and I-20 Improvements (SUB)	\$163,075
	Planning	4400015733, H.972374.1	Local Public Agency Documented Planning Process, Statewide	\$17,644
	Road	4400017293, H.010616	I-20: LA 544 Overpass Replacement	\$11,376
	ITS	440005459, H.004780.5	Kansas Lane Connector, S.A. #6	\$552
	Traffic	4400017438, H.013284	MRB South GBR: LA 1 to LA 30 Connector, Ascension, EBR, Iberville & WBR	\$74,218

Neel-Schaffer, Inc. (continued)	Traffic	4400018271, H.014746.1	LA 383 Corridor Study	\$7,953
	Planning	4400018271, H.014746.1	LA 383 Corridor Study	\$88,353
	Planning	4400021094	Update Statewide Transportation Plan and Travel Demand Model	\$525
	Traffic	4400026458, H.014710.5	Cedar Street Ext. to LA 22 and Roundabout	\$23,473
	Traffic	4400025299, H.015645.5	LA 47 Hayne Blvd Safety Improvements	\$18,976
	Traffic	4400025299, H.016168.1	Baton Rouge Northern Bypass Expressway	\$220,195
	Planning	4400023689, H.013622.5	LRSP Ardenwood Dr. Road Diet	\$1,696
	Traffic	4400025299, H.015986.5	I-49 at LA 3233 (Harry Gilbeau Road) Traffic Study	\$49,545
	Traffic	4400023689, H.015574.5	LCG FYA Signal Improvements Phase 2	\$188,823
	Road	4400031591, H.015574.5	LCG FYA Signal Improvements Phase 2	\$240,503
	Traffic	4400031591, H.015574.5	LCG FYA Signal Improvements Phase 2	\$11,951
	Other (Program Management)	4400027987, H.015373.1	LRSP and SRTPP Program Management	\$498,953
	Traffic	4400028585, H.014516.5	Mills Ave & Rees St Intersection Imp	\$75,362
	Traffic	4400023689, H.015227. S.A. #1	US 61 @ Victoria Dr. Ped Crossing, S.A. #1	\$3,801
	ITS	4400029436, H.011504.6	Alexandria Phase 2 Technical Support	\$24,767
	ITS	4400029436, H.016447.1	DMS Decom & Updates SEA	\$396
	ITS	4400029436, H.015136.1	Monroe ITS Architecture	\$57,708
	CE&I/OV	4400029441, H.011446.6	Mound Rest Area Renovations	\$54,001
	Other (Electrical)	4400029441, H.015218.5	Grand Prairie Safety Rest Area Lighting	\$16,096
	Other (Electrical)	4400029441, T.O. #3	Butte LaRose Rest Area Lighting	\$3,540
	Traffic	4400025299, H.014305.1	US 61: Cardinal Drive to Bert Street	\$152,991
	Traffic	4400025299, H.016437.5	US 190: Wooddale to Livingston P/L	\$112,317
	Road	4400024927, H.015640.5	LA 159 & LA 818: Roundabout	\$391,570

Terracon Consultants, Inc.	Geotech	400005673 H.011235	I-49 at Verot School Road	\$8,110
	Geotech	4400025027 H.015442 – 015449	IIJA Off System Bridge Program	\$11,400
	Geotech	4400025026 H.015338	IIJA Off System Bridge Program	\$66,600
	Geotech	4400025024 H.015336, .015520, .015529	IIJA Off System Bridge Program	\$9,234
	Geotech	4400025023 H.015505-0.015517, .015335	IIJA Off System Bridge Program	\$39,000
	Geotech	4400006191 H.005967	Nelson Road Extension and Bridge	\$175,495
	Geotech	4400019014 H.012048.5	Caster Creek and Relief Bridges	\$28,158
	Geotech	4400019014 H.012537.5	LA 154, LA157 – Red Chute BYU & Flat RVR BRS	\$17,051
	Geotech	4400019014 H.014984	Libuse Cutoff Road over Flagon Bayou	\$19,878
	Geotech	4400024651 H.014988	Carey Road over Blackwater Bayou	\$49,946
	Geotech	4400024651 H.014990	S. Tiger Bend Road & E. Achord Road Bridge	\$20,034
	Geotech	4400024651 H.000284	US 90 Pearl River Bridges	\$971,478
	Geotech	4400024651 H.012059	LA19- Bridges near Zachary	\$303,640
SJB Group, LLC	Survey	Contract No. 4400017033 / S.P. No. H.005121.5 / F.A.P. No. H005121	LA 415 Connector - I10 to La 1	\$32,904.31
	Other (SUE)	Contract No. 4400017033 / S.P. No. H.005121.5 / F.A.P. No. H005121	SUE - LA 415 Connector - I10 to La 1	\$627,159.39
	Other (SUE)	Contract No. 4400027349 S.P. No. H.003931	I-10 Calcasieu Project P3	\$7,144,086.07
	Other – DBE Supportive Services	Contract No: 44-26952 S.P. No. N/A	LA DOTD DBE Support Services	\$98,300.69
	Survey	Contract No. 44-28371 S.P. No. H.004100.5	I-10: LA 415 TO ESSEN	\$3391.9
	CPM	Contract # 44-30226 S.P. H.014258.6	RCL - LA 1: Port Allen Canal Bridge Replacement (Phase 2) (HBI)(CE&I)	\$82,832.25
	CPM	Contract# 44-31862 S.P. Multiple	Contract For Consulting Services Critical Path Method (CPM) Analysis	\$316,272.3

20. Certifications/Licenses:**Project References for Mesoscopic Traffic Models (MPR No. 10 – Vijay Kunada, PE, PTOE, PTP)**

Project Name & Description	Project Location	Owner	Point-of-Contact	Phone Number	Email
H.016168.1: Baton Rouge Northern Bypass Expressway	East Baton Rouge and West Baton Rouge Parishes, LA	LADOTD	Melissa LeBas	(225) 379-1039	Melissa.LeBas@la.gov
H.013284: MRB South GBR: LA 1 to LA 30 Connector	Ascension, East Baton Rouge, Iberville, and West Baton Rouge Parishes, LA	LADOTD	Christina Brignac	(225) 379-1394	Christina.Brignac@la.gov
H.013897: I-10 & I-12 College Drive Flyover Ramp Design-Build	Baton Rouge, LA	LADOTD	Catherine Mastin, PE,	(225) 379-1652	catherine.mastin@la.gov
College Drive Enhancement Project	Baton Rouge, LA	City of Baton Rouge	Cyndi Pennington	(225) 389-3246	cpennington@brla.gov
Lafayette Parish Mesoscopic Model	Lafayette, LA	Acadiana Planning Commission	Sara Gary	(337) 806-9378	sgary@planacadiana.org

Secretary of State Documents



COMMERCIAL DIVISION
225.925.4704

Fee Numbers
225.932.5317 (Admin. Services)
225.932.5314 (Corporations)
225.932.5318 (UCC)

Name	Type	City	Status
HARDESTY & HANOVER, LLC	Limited Liability Company (Non-Louisiana)	WILMINGTON	Active

Previous Names

Business: HARDESTY & HANOVER, LLC
Charter Number: 40880812Q
Registration Date: 7/6/2012
Domicile Address

2711 CENTERVILLE ROAD, SUITE 400
WILMINGTON, DE 19808

Mailing Address

1501 BROADWAY, 6TH FLOOR
NEW YORK, NY 10036

Principal Business Office

1501 BROADWAY, 6TH FLOOR
NEW YORK, NY 10036

Registered Office in Louisiana

3850 N. CAUSEWAY BOULEVARD, SUITE 1625
METairie, LA 70002

Principal Business Establishment in Louisiana

3850 N. CAUSEWAY BOULEVARD, SUITE 1625
METairie, LA 70002

Status

Status: Active
Annual Report Status: In Good Standing
Qualified: 7/6/2012
Last Report Filed: 6/10/2025
Type: Limited Liability Company (Non-Louisiana)

Registered Agent(s)

Agent: BABAK NAGHAVI
Address 1: 3850 N. CAUSEWAY BOULEVARD, SUITE 1625
City, State, Zip: METAIRIE, LA 70002
Appointment Date: 6/1/2017

Officer(s)

Additional Officers: No

Officer: SEAN BLUNI
Title: Member
Address 1: 1501 BROADWAY, 6TH FLOOR
Address 2: HARDESTY & HANOVER, LLC
City, State, Zip: NEW YORK, NY 10036

Officer: PAUL SKELTON
Title: Member
Address 1: 1501 BROADWAY, 6TH FLOOR
Address 2: HARDESTY & HANOVER, LLC
City, State, Zip: NEW YORK, NY 10036

Officer: KEITH GRIESING
Title: Member
Address 1: 1501 BROADWAY, 6TH FLOOR
Address 2: HARDESTY & HANOVER, LLC
City, State, Zip: NEW YORK, NY 10036

Officer: GLEN SCHETELICH
Title: Member
Address 1: 5 HARDIE VIEW PLAZA, SUITE 503
Address 2: HARDESTY & HANOVER, LLC
City, State, Zip: HOBOKEN, NJ 07030

Officer: DAVID TUCKMAN
Title: Member
Address 1: 1501 BROADWAY, 6TH FLOOR
Address 2: HARDESTY & HANOVER
City, State, Zip: NEW YORK, NY 10036

Officer: ROBERT DREW
Title: Member
Address 1: 1501 BROADWAY, 6TH FLOOR
Address 2: HARDESTY & HANOVER, LLC
City, State, Zip: NEW YORK, NY 10036

Officer: SCOTT REYNOLDS
Title: Member
Address 1: 180 ADHERAL COCHRANE DRIVE, SUITE 555
Address 2: HARDESTY & HANOVER, LLC
City, State, Zip: ANNAPOLIS, MD 21401

Amendments on File (1)

Description	Date
Foreign LLC Statement of Change	6/1/2017

[Print](#)


COMMERCIAL DIVISION
225.925.4704

Tax Numbers
 225.932.5317 (Admin. Services)
 225.932.5314 (Corporations)
 225.932.5318 (UCC)

Name	Type	City	Status
NEEL-SCHAFFER, INC.	Business Corporation (Non-Louisiana)	JACKSON	Active

Previous Names

Business: NEEL-SCHAFFER, INC.
Charter Number: 34112054F
Registration Date: 4/25/1983

Domicile Address

4450 OLD CANTON ROAD
 SUITE 100
 JACKSON, MS 39211

Mailing Address

4450 OLD CANTON ROAD
 SUITE 100
 JACKSON, MS 39211

Principal Business Office

4450 OLD CANTON ROAD
 SUITE 100
 JACKSON, MS 39211

Registered Office in Louisiana

450 LAUREL STREET, 8TH FLOOR
 BATON ROUGE, LA 70801

Principal Business Establishment in Louisiana

450 LAUREL STREET
 8TH FLOOR
 BATON ROUGE, LA 70801

Status

Status: Active
Annual Report Status: In Good Standing
Qualified: 4/25/1983
Last Report Filed: 4/3/2025
Type: Business Corporation (Non-Louisiana)

Registered Agent(s)

Agent: CORPORATION SERVICE COMPANY
Address 1: 450 LAUREL STREET, 8TH FLOOR
City, State, Zip: BATON ROUGE, LA 70801
Appointment Date: 11/9/2012

Officer(s)

Additional Officers: No

Officer: CHRIS SELLERS
Title: Director
Address 1: 4450 OLD CANTON ROAD
Address 2: SUITE 100
City, State, Zip: JACKSON, MS 39211

Officer: MELINDA MCGRATH
Title: Director
Address 1: 4450 OLD CANTON ROAD
Address 2: SUITE 100
City, State, Zip: JACKSON, MS 39211

Officer: K. NELSON LUCIUS
Title: Director
Address 1: 2501 AVENUE J,
Address 2: #120
City, State, Zip: ARLINGTON, TX 76006

Officer: J. CLARK ROBINSON
Title: Director
Address 1: 4450 OLD CANTON ROAD
Address 2: SUITE 100
City, State, Zip: JACKSON, MS 39211

Officer: ROBERT R. WALKER
Title: Director
Address 1: 4450 OLD CANTON ROAD
Address 2: SUITE 100
City, State, Zip: JACKSON, MS 39211

Officer: JOEY HUDNALL

Title: President, Director
Address 1: 4450 OLD CANTON ROAD
Address 2: SUITE 100
City, State, Zip: JACKSON, MS 39211
Officer: EDWARD J. EVERITT
Title: Secretary
Address 1: 4450 OLD CANTON ROAD
Address 2: SUITE 100
City, State, Zip: JACKSON, MS 39211

Amendments on File (17)

Description	Date
Disclosure of Ownership	2/2/1995
Disclosure of Ownership	4/8/1996
Disclosure of Ownership	4/19/1999
Stmnt of Chg or Chg Prin Bus Off	12/6/2002
Disclosure of Ownership	11/20/2003
Disclosure of Ownership	6/7/2012
Stmnt of Chg or Chg Prin Bus Off	11/9/2012
Appointing, Change, or Resign of Officer	5/24/2013
Appointing, Change, or Resign of Officer	5/24/2013
Stmnt of Chg or Chg Prin Bus Off	5/24/2013
Appointing, Change, or Resign of Officer	7/22/2014
Stmnt of Chg or Chg Prin Bus Off	9/8/2015
Stmnt of Chg or Chg Prin Bus Off	9/18/2015
Stmnt of Chg or Chg Prin Bus Off	12/28/2015
Appointing, Change, or Resign of Officer	8/3/2017
Disclosure of Ownership	8/5/2019
Stmnt of Chg or Chg Prin Bus Off	9/1/2023

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COMMERCIAL DIVISION
225.925.4704

Fax Numbers
 225.932.5317 (Admin. Services)
 225.932.5314 (Corporations)
 225.932.5318 (UCC)

Name	Type	City	Status
TERRACON CONSULTANTS, INC.	Business Corporation (Non-Louisiana)	WILMINGTON	Active
Previous Names			
Business: TERRACON CONSULTANTS, INC.			
Charter Number: 35701137F			
Registration Date: 5/7/2004			
Domicile Address			
251 LITTLE FALLS DRIVE WILMINGTON, DE 19808			
Mailing Address			
10841 S RIDGEVIEW ROAD OLATHE, KS 66061			
Principal Business Office			
10841 S RIDGEVIEW ROAD OLATHE, KS 66061			
Registered Office in Louisiana			
450 LAUREL STREET, 8TH FLOOR BATON ROUGE, LA 70801			
Principal Business Establishment in Louisiana			
450 LAUREL STREET 8TH FLOOR BATON ROUGE, LA 70801			
Status			
Status: Active			
Annual Report Status: In Good Standing			
Qualified: 5/7/2004			
Last Report Filed: 4/16/2025			
Type: Business Corporation (Non-Louisiana)			

Registered Agent(s)

Agent:	CORPORATION SERVICE COMPANY
Address 1:	450 LAUREL STREET, 8TH FLOOR
City, State, Zip:	BATON ROUGE, LA 70801
Appointment Date:	7/27/2009

Officer(s)

Additional Officers: No

Officer:	PATRICK L. COURTNEY
Title:	Secretary
Address 1:	10841 S RIDGEVIEW RD
City, State, Zip:	OLATHE, KS 66061
Officer:	DONALD J. VRANA
Title:	Treasurer
Address 1:	10841 S RIDGEVIEW RD
City, State, Zip:	OLATHE, KS 66061
Officer:	M. GAYLE PRACKER
Title:	President, Director
Address 1:	10841 S RIDGEVIEW ROAD
City, State, Zip:	OLATHE, KS 66061
Officer:	JASON A. SANDER
Title:	Director
Address 1:	611 LUNKEN PARK DR.
City, State, Zip:	CINCINNATI, OH 45226
Officer:	TIMOTHY W. ANDERSON
Title:	Director
Address 1:	4685 S ASH AVE SUITE 1H
City, State, Zip:	TEMPE, AZ 85282
Officer:	WILLIAM S. ANDERSON
Title:	Director
Address 1:	2201 ROWLAND AVE
City, State, Zip:	SAVANNAH, GA 31415
Officer:	JASON KEPHART
Title:	Director
Address 1:	10841 S RIDGEVIEW RD
City, State, Zip:	OLATHE, KS 66061

Officer: JEFFREY ROBERTS
Title: Director
Address 1: 11555 CLAY RD, SUITE 100
City, State, Zip: HOUSTON, TX 77043

Amendments on File (8)

Description	Date
Start of Chg or Chg Prin Bus Off	1/29/2008
Start of Chg or Chg Prin Bus Off	7/27/2009
Disclosure of Ownership	5/28/2010
Disclosure of Ownership	5/28/2015
Start of Chg or Chg Prin Bus Off	12/28/2015
Start of Chg or Chg Prin Bus Off	9/1/2023
Appointing, Change, or Resign of Officer	12/4/2025
Appointing, Change, or Resign of Officer	12/5/2025

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COMMERCIAL DIVISION
 225.925.4704

Fax Numbers
 225.932.5317 (Admin. Services)
 225.932.5314 (Corporations)
 225.932.5318 (UCC)

Name	Type	City	Status
SJB GROUP, L.L.C.	Limited Liability Company	BATON ROUGE	Active

Previous Names

Business: SJB GROUP, L.L.C.
Charter Number: 36063779K
Registration Date: 12/2/2005
Domicile Address

5344 BRITTANY DRIVE
 BATON ROUGE, LA 70808

Mailing Address

C/O MATTHEW ESTOPINAL
 5344 BRITTANY DRIVE
 BATON ROUGE, LA 70808

Status

Status: Active
Annual Report Status: In Good Standing
File Date: 12/2/2005
Last Report Filed: 11/3/2025
Type: Limited Liability Company

Registered Agent(s)

Agent: MATTHEW ESTOPINAL
Address 1: 5344 BRITTANY DRIVE
City, State, Zip: BATON ROUGE, LA 70808
Appointment Date: 4/17/2023

Officer(s)

Additional Officers: No

Officer: MATTHEW ESTOPINAL
Title: Manager, Member
Address 1: 5344 BRITTANY DRIVE
City, State, Zip: BATON ROUGE, LA 70808

Mergers (1)

Filed Date	Effective Date:	Type	Charter#	Chater Name	Role
12/2/2005	12/2/2005	MERGE	36063779K	SJB GROUP, L.L.C.	SURVIVOR
			22203280D	SJB GROUP, INCORPORATED	NON-SURVIVOR

Amendments on File (9)

Description	Date
Merger	12/2/2005
Disclosure of Ownership	10/6/2006
Appointing, Change, or Resign of Officer	4/5/2011
Appointing, Change, or Resign of Officer	10/11/2016
Domestic LLC Agent/Domicile Change	5/5/2017
Appointing, Change, or Resign of Officer	3/8/2023
Domestic LLC Agent/Domicile Change	4/17/2023
Appointing, Change, or Resign of Officer	4/17/2023
Domestic LLC Agent/Domicile Change	8/15/2024

[Print](#)

Certifications



In cooperation with the
Louisiana Department of Transportation & Development
presents this

Certificate of attendance and participation for:

BABAK NAGHAVI

Training Course:
Maintenance and Rehabilitation of Historic Bridges

Transportation Training and Education Center
4099 Gourrier Avenue, Room 179
Baton Rouge, Louisiana 70808

Please select the date you attended the course:

☐ Tuesday, April 12, 2016

☐ Wednesday, April 13, 2016

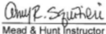
☐ Tuesday, May 10, 2016

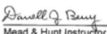
☐ Wednesday, May 11, 2016

☒ Tuesday, July 12, 2016

☐ Wednesday, July 13, 2016

You have earned 8 PDH units that can be applied to applicable
continuing education requirements for professional engineering
licensure.


 Mead & Hunt Instructor
 Amy Squitieri


 Mead & Hunt Instructor
 Darrell Berry, PE, SE



In cooperation with the
Louisiana Department of Transportation & Development
presents this

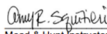
Certificate of attendance and participation for:

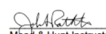
Fred Wetekamm

Training Course:
Maintenance and Rehabilitation of Historic Bridges

July 2020

You have earned 4 PDH units that can be applied to applicable
continuing education requirements for professional engineering
licensure.


 Mead & Hunt Instructor
 Amy Squitieri


 Mead & Hunt Instructor
 John A. Rathke, PE, SE



In cooperation with the
Louisiana Department of Transportation & Development
presents this

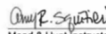
Certificate of attendance and participation for:

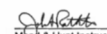
Erik Diaz

Training Course:
Maintenance and Rehabilitation of Historic Bridges

July 2020

You have earned 4 PDH units that can be applied to applicable
continuing education requirements for professional engineering
licensure.


 Mead & Hunt Instructor
 Amy Squitieri


 Mead & Hunt Instructor
 John A. Rathke, PE, SE



National Highway Institute

Certificate of Training

Babak Naghavi

has participated in

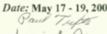
NEPA and Transportation Decision Making

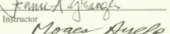
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LADOTD / LTRC

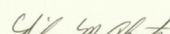
Location: Baton Rouge, LA

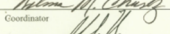
Date: May 17 - 19, 2005


 Paul Trapp
 Instructor


 Roger Ayala
 Director, National Highway Institute
 Federal Highway Administration

Hours of instruction: 18


 William M. Phares
 Coordinator


 John A. Rathke
 Director, Office of Professional and Corporate Development
 Federal Highway Administration

Certificate of Completion

presented to

Ellen B. Howard

for completing the

Traffic Engineering Analysis Process & Report Module 1

Date: July 16, 2018
Location: Baton Rouge, Louisiana

Professional Development
Hours (PDHs) Awarded: 2

Poly G. Calma
Authorized Instructor

Don Holt
Authorized Instructor

Robert J. Brummett
Authorized instructor



Certificate of Completion

presented to

Ellen Howard

for completing the

Traffic Engineering Analysis Process & Report Module 2

Date: July 23, 2018
Location: Baton Rouge, Louisiana

Professional Development
Hours (PDHs) Awarded: 3

Poly G. Calma
Authorized Instructor

Don Holt
Authorized Instructor

Robert J. Brummett
Authorized instructor



Certificate of Completion

presented to

Ellen Howard

for completing the

Traffic Engineering Analysis Process & Report Module 3

Date: October 29, 2018
Location: Baton Rouge, Louisiana

Professional Development
Hours (PDHs) Awarded: 3

Poly G. Calma
Authorized Instructor

Don Holt
Authorized Instructor

Robert J. Brummett
Authorized instructor



Certificate of Completion

presented to

Vijay Kunada

for completing the

Traffic Engineering Analysis Process & Report Module 1

Date: October 1, 2018
Location: Baton Rouge, Louisiana

Professional Development
Hours (PDHs) Awarded: 2.5

John A. Calhoun
Authorized Instructor

John A. Calhoun
Authorized Instructor

John A. Calhoun
Authorized instructor



Certificate of Completion

presented to

Vijay Kunada

for completing the

Traffic Engineering Analysis Process & Report Module 2

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

Professional Development
Hours (PDHs) Awarded: 3.5

John A. Calhoun
Authorized Instructor

John A. Calhoun
Authorized Instructor

John A. Calhoun
Authorized instructor



Certificate of Completion

presented to

Vijay Kunada

for completing the

Traffic Engineering Analysis Process & Report Module 3

Date: December 17, 2018
Location: Baton Rouge, Louisiana

Professional Development
Hours (PDHs) Awarded: 3

John A. Calhoun
Authorized Instructor

John A. Calhoun
Authorized Instructor

John A. Calhoun
Authorized instructor



Certificate of Completion

presented to

William Case Fulcher

for completing the

Traffic Engineering Analysis Process & Report Module 1

Date: July 16, 2018
Location: Baton Rouge, Louisiana

Professional Development
Hours (PDHs) Awarded: 2

John A. Colburn
Authorized Instructor

John A. Colburn
Authorized Instructor

John A. Colburn
Authorized instructor



Certificate of Completion

presented to

William Fulcher

for completing the

Traffic Engineering Analysis Process & Report Module 2

Date: July 23, 2018
Location: Baton Rouge, Louisiana

Professional Development
Hours (PDHs) Awarded: 3

John A. Colburn
Authorized Instructor

John A. Colburn
Authorized Instructor

John A. Colburn
Authorized instructor



Certificate of Completion

presented to

William Fulcher

for completing the

Traffic Engineering Analysis Process & Report Module 3

Date: October 18, 2018
Location: Baton Rouge, Louisiana

Professional Development
Hours (PDHs) Awarded: 3

John A. Colburn
Authorized Instructor

John A. Colburn
Authorized Instructor

John A. Colburn
Authorized instructor



Certificate of Completion

presented to

Jonathan Dufie

for completing the

Traffic Engineering Analysis Process & Report Module 1

Date: July 16, 2018

Location: Baton Rouge, Louisiana

Professional Development

Hours (PDHs) Awarded: 2

Poly A. Colvane
Authorized Instructor

Jim Holt
Authorized Instructor

Robert P. Bunnell
Authorized instructor



Certificate of Completion

presented to

Jonathan Dufie

for completing the

Traffic Engineering Analysis Process & Report Module 2

Date: July 23, 2018

Location: Baton Rouge, Louisiana

Professional Development

Hours (PDHs) Awarded: 3

Poly A. Colvane
Authorized Instructor

Jim Holt
Authorized Instructor

Robert P. Bunnell
Authorized instructor



Certificate of Completion

presented to

Jonathan Dufie

for completing the

Traffic Engineering Analysis Process & Report Module 3

Date: October 29, 2018

Location: Baton Rouge, Louisiana

Professional Development

Hours (PDHs) Awarded: 3

Poly A. Colvane
Authorized Instructor

Jim Holt
Authorized Instructor

Robert P. Bunnell
Authorized instructor



21. QA/QC Plan:

QA/QC Plan is included in the following pages.



Hardesty & Hanover, LLC

Quality Management Plan

Table of Contents

1.0 Quality Management Plan Authorization	1
2.0 Quality Control & Quality Assurance Concepts.....	2
3.0 Quality Management System.....	3
4.0 QA/QC Responsibilities.....	5
5.0 Project Description	9
6.0 Project Specific Procedures.....	15
H&H Quality Assurance Plan.....	Appendix A
H&H Quality Control Plan.....	Appendix B
QA/QC Forms & Checklists.....	Appendix C

1.0 Quality Management Plan Authorization

The Hardesty & Hanover (H&H) Quality Management Plan consists of procedures that have been developed to assure 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.



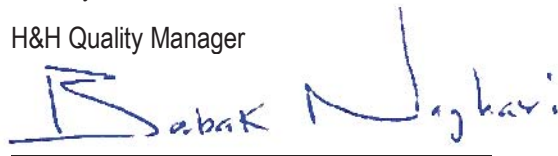
2026.03.10
13:57:14-04'00'

Signature

Date

Rodney A. Jarrett

H&H Quality Manager



3/11/2026

Signature

Date

Babak Naghavi, PE

H&H Project Manager

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project US 71: ICG Railroad Project #0005614.00	REV.0 - Original Issue: 03/10/26	Page 1
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1.1 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.

2.0 Quality Control & Quality Assurance Concepts

2.1 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.

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- 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.

3.0 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 assure 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.

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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

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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.

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.

H&H will continually develop and implement measures that assure 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.

4.0 QA/QC Responsibilities

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: Paul Skelton, 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.

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

Prepared By B. Naghavi	Approved By R. Jarrett	Quality Management Plan Project US 71: ICG Railroad Project #0005614.00	REV.0 - Original Issue: 03/10/26	Page 5
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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.
- 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

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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 Design: Corey Bourgeois, PE

Roadway Design: John Rayer, PE

Geotechnical: Ray Mankbadi, PE

Hydraulics: J. Lee Adams, PE

Construction Support Services Leads:

- Engineers providing reviews of contractor shop drawings
- Engineers providing responses to RFI and field issues

The following will act as Construction Support Leads for this project:

Frederick Wetekamm, PE

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:

Dalton Hunt, EI; Courtney Mai, EI; Chloe Beals, EI; Will Farber, EI; Lauren Peytavin, EI

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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:

Linh Kim, PE; Fred Wetekamm, PE; Rob Hideck, PE; John Witthohn, PE; Dennis Gowins, PE; Roberto Vicedo, 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:

Dalton Hunt, EI; Courtney Mai, EI; Chloe Beals, EI; Will Farber, EI; Lauren Peytavin, 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; Dennis Gowins, PE; Roberto Vicedo, 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

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 deficient will not be assigned work in their area of deficiency until requirements for the position are met.

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5.0 Project Description

This contract is to provide engineering and related services to facilitate the replacement of Recall Nos. 014410 & 014420 and rehabilitation of Recall No. 014400 crossing KCS Railroad in Caddo Parish. This project is located in Caddo Parish and crosses KCS Railroad. The existing structure is a 293 foot long concrete I-beam bridge which was built in 1937 and is considered a historic preservation priority. This project will rehabilitate the existing bridge to improve the overall condition of the bridge, extend its service life, and/or improve its bridge load rating as appropriate based on BDEM Guidelines for Existing Structure Evaluation.

5.1 Scope of Work

The scope of the project is to perform all necessary professional services in connection with the replacement of Recall Nos. 014410 & 014420 and rehabilitation of Recall No. 014400 crossing KCS Railroad in Caddo Parish as shown in the table below, H&H Project Number 0005614.00.

Project Number	Recall Number	Latitude	Longitude	Existing Structure Type	Route	Crossing	Historic Category
H.012008	014400	32.51244	-93.74430	CONIBM	US 71	ICG RR	Preservation Priority
H.012009	014410	32.51255	-93.74595	CONIBM	US 71	ICG RR	Non-Priority
	014420	32.51248	-93.74607	CONIBM	US 71	ICG RR	Non-Priority

1. Site Expectations and Assumptions

These locations have been selected based on several specific features. If during project development the proposed work falls outside the following conditions, stop work and notify the project manager immediately:

- Environmental investigation will result in a Categorical Exclusion (CE) or an Environmental Assessment (EA).
- Transportation Management Plan is a Level 2.
- New substructures will be driven pile or drilled shaft supported bridges.
- If adequate space is not available for a slope, permanent earth retaining structures such as MSE walls, cantilever retaining walls, sheet piles, etc. will be required.

2. Traffic Study

A traffic study shall be conducted to incorporate both State Project Nos. H.012008 and H.012009 in accordance with the following:

- A. Develop the Project Management Plan in accordance with DOTD and FHWA guidance.
- B. Prepare list of agencies and coordination plan. Update both as needed throughout the life of the project.
- C. Prepare the list of stakeholders and involvement plan. Update both as needed throughout the life of the project.
- D. Obtain existing mesoscopic model (provided by DOTD) and review for any additional data required to aid in identifying potential detour routes. Collect additional traffic counts, if any, and other pertinent data to perform traffic analysis of the study area using DOTD approved software. Grow the traffic volumes using

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- DOTD approved methods and analyze the future conditions. Perform Safety Analysis. Utilize all collected data to analyze and determine alternatives that accomplish the goals of the Purpose and Need.
- E. Conceptual cost estimate for each alternative.

H.012008 – US71: ICG Railroad Overpass Rehab (HBI)

This project is located in Caddo Parish and crosses KCS Railroad. The existing structure is a 293-foot long concrete I-beam bridge which was built in 1937 and is considered a historic preservation priority. This project will rehabilitate the existing bridge to improve the overall condition of the bridge, extend its service life, and/or improve its bridge load rating as appropriate based on BDEM Guidelines for Existing Structure Evaluation.

1. Topographic Survey Services

A topographic survey shall be required along a portion of the existing route. A complete topographic survey including all utilities with depths and all drainage is required, along with finish floor elevations of all buildings that fall in the survey limits. This project shall be completed in accordance with the Location and Survey Manual and all current accepted Location and Survey Automation procedures and also meet the designer's requirements.

The survey shall begin and end 500 feet beyond either end of the subject structure and extend down all side streets within the survey limits for a distance of 300 feet. The width of the Survey and DTM shall extend from apparent right of way to apparent right of way. The project alignments shall be established using the existing centerline of roads.

Track Profiles – The plans shall include a top of rail profile which extends at least one thousand (1000) feet beyond each side of the proposed structure. Top of rail elevations shall be collected at no less frequent than fifty (50) foot intervals. If a railroad bridge is encountered, the bridge shall be located using the railroad station at inside face of backwalls at both ends of the bridge along with elevations at each bent location. Data points shall be collected at switch points, milepost markers, other railroad signage, structures, and equipment, as well as at the center and each edge of all at-grade railroad crossings. Contact KCSR to obtain railroad stationing.

Permission of landowners shall be acquired by the Consultant before entering any property associated with this description. All work shall be done in the English units of measurement, and no drainage map is required.

2. Geotechnical Investigation and Design Services

H&H shall perform a geotechnical investigation consisting of soil borings, laboratory testing, optional cone penetrometer test (CPT) soundings, soil classification, site characterization, and soil boring logs. All services shall be provided in accordance with the latest version of the DOTD Geotechnical Design Manual (GDM). The following GDM chapters are relevant to the work to be performed:

- Chapter 3 – Subsurface Investigation
- Chapter 4 – Laboratory Testing
- Chapter 15 – Geotechnical Reports

In addition to the referenced ASTM designations, refer to FHWA Geotechnical Engineering Circular No. 5 (GEC 5) for best practices pertaining to geotechnical site characterization. Geotechnical deliverables will include Geotechnical Investigation Plan, Geotechnical Data Report, Geotechnical Data, and boring logs.

3. Document Review and Site Inspection

Collect all data that may be pertinent to the projects. This may include, but is not limited to, review of as-built plans,

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existing load rating reports, inspection reports, existing R/W, traffic data, parish maps, scaled aerial photos of site, DOTD roadway classification, Stage 0 Structural Site Surveys, alignment studies, and any other relevant and available information that would aid in providing the required submittals.

Conduct a field visit to the bridge sites, assess the site conditions (including environmental impacts, railroad impacts, utility relocation, r/w impacts, permit issues, possible roadway detour alternatives and length of detour, existing approach roadway section and geometry, etc.), and have a reasonable understanding of the current health and serviceability of the existing structures. It is not the intent of task no. 3 to provide a complete inspection of the bridge, rather the intention is to evaluate and confirm the types, magnitudes, and extents of needed repairs. Determine how the existing conditions might cause constructability issues and affect possible construction alternatives, such as phased bridge construction. Verify the findings of this field visit with the available bridge inspection and rating reports which will be made available upon award of the project. Get input on the project from the local DOTD District, stakeholders, and permitting agencies as necessary.

4. Site Inspection Review, Analysis, and Alternative Development

H&H will thoroughly review and analyze all data collected and use the information to develop a complete understanding of the existing structure and the deficiencies that must be addressed.

- Determine types, magnitudes, and extents of needed repairs from site visit
- Analyze the site visit data and correlation with existing data
- Develop a summary of deficiencies to be addressed

5. Develop and Evaluate Remediation Strategies

H&H will develop various remediation strategies for all of the deficiencies that have been identified. The number of strategies developed for each deficiency shall vary as appropriate. Lane and bridge closures required for each strategy should also be considered.

- Develop remediation strategies and alternatives (where required)
- Evaluation lane / bridge closure / sequences for strategies and alternatives
- Develop preliminary costs for remediation strategies
- Develop a recommended remediation strategy for each deficiency

6. Remediation Strategies Meeting

H&H will coordinate and schedule a meeting to discuss the remediation strategies. H&H will present the findings and recommended remediation to DOTD for review and concurrence. The remediation strategies should be presented in the format of preliminary plan drawings (showing an existing condition and a repaired condition). A title sheet, general plan sheet identifying the locations of the repairs, typical section sheets, and any other sheets needed to convey relevant information should be provided.

- Develop a scope of work report which should include clear and complete descriptions of all required repairs and list remediation strategies and alternatives. Include the preliminary costs for remediation strategies. Include pictures and sketches (as required) of the structure's existing conditions.

7. Preliminary Plan Development Services

H&H will develop preliminary plans for the recommended remediation along with all associated forms and reports. H&H will provide preliminary plans for the project including, but not limited to, the following:

- Title Sheet

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- Typical Section and Details
- Summary of Estimated Quantities
- Miscellaneous Details & General Notes
- Temporary Construction Signs, Suggested Sequence of Construction/Detour Route Signing
- Cross-Sections (Earthwork)
- Geometric Details
- Plan/Profile Sheets
- Construction Cost Estimate
- Bridge Sheets as outlined in the DOTD Bridge Design and Evaluation Manual

8. Deliverables

- Proposed Schedule
- Bridge Design Criteria
- Scope of Work Report
- 60% Preliminary Plans
- 90% Preliminary Plans
- Plan-in-Hand Meeting Attendance
- 100% Preliminary Plans
- Transportation Management Plan
- Plan Constructability Review Form
- Preliminary Design Report
- Design Waivers or Design Exceptions (if required)
- Preliminary Construction Cost Estimate

H&H will provide personnel to attend meetings with DOTD team members and appropriate agency stakeholders to facilitate development of the project or at the direction of the DOTD Project Manager.

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

Final Plan Development Services and Construction Support for Project No. H.012008 will be handled by Supplemental Agreement.

H.012009 – US 71: Market St Bridge Over ICG RR (HBI)

This project is a bridge replacement project located on US 71 in Caddo Parish and crosses KCS Railroad. The existing structures are 585-foot-long concrete I-beam bridges which were built in 1940. The two structures are to be removed and replaced with a single structure at this location.

1. Topographic Survey Services

A topographic survey shall be required along a portion of the existing route. A complete topographic survey including all utilities with depths and all drainage is required, along with finish floor elevations of all buildings that fall in the survey limits. This project shall be completed in accordance with the Location and Survey Manual and all current accepted Location and Survey Automation procedures and also meet the designer's requirements.

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The survey shall begin and end 500 feet beyond either end of the subject structure and extend down all side streets within the survey limits for a distance of 300 feet. The width of the Survey and DTM shall extend from apparent right of way to apparent right of way.

Track Profiles – The plans shall include a top of rail profile which extends at least one thousand (1000) feet beyond each side of the proposed structure. Top of rail elevations shall be collected at no less frequent than fifty (50) foot intervals. If a railroad bridge is encountered, the bridge shall be located using the railroad station at inside face of backwalls at both ends of the bridge along with elevations at each bent location. Data points shall be collected at switch points, milepost markers, other railroad signage, structures, and equipment, as well as at the center and each edge of all at-grade railroad crossings. Contact KCSR to obtain railroad stationing.

Permission of landowners shall be acquired by the Consultant before entering any property associated with this description. All work shall be done in the English units of measurement, and no drainage map is required.

2. Geotechnical Investigation and Design Services

H&H will perform a geotechnical investigation consisting of soil borings, laboratory testing, optional cone penetrometer test (CPT) soundings, soil classification, site characterization, and soil boring logs. In addition to the referenced ASTM designations, refer to FHWA Geotechnical Engineering Circular No. 5 (GEC 5) for best practices pertaining to geotechnical site characterization. Geotechnical deliverables will include Geotechnical Investigation Plan, Geotechnical Data Report, Geotechnical Data, and boring logs.

3. Site Visit and Document Review

Review the existing alignment study, as-built plans, existing load rating reports, inspection reports, existing R/W, traffic data, parish maps, scaled aerial photos of site, DOTD roadway classification, Stage 0 Structural Site Surveys, and any other relevant and available information that would aid in providing the required submittals.

Conduct a field visit to the bridge sites, assess the site conditions (including environmental impacts, railroad impacts, utility relocation, r/w impacts, permit issues, possible roadway detour alternatives and length of detour, existing approach roadway section and geometry, etc.), and have a reasonable understanding of the current health and serviceability of the existing structures. Determine how the existing conditions might cause constructability issues.

4. Preliminary Plan Development Services

H&H will develop preliminary plans and all associated forms and reports. The Consultant shall provide preliminary plans for the project including, but not limited to, the following:

- Title Sheet
- Typical Section and Details
- Summary of Estimated Quantities
- Miscellaneous Details & General Notes
- Temporary Construction Signs, Suggested Sequence of Construction/Detour Route Signing
- Cross-Sections (Earthwork)
- Geometric Details
- Plan/Profile Sheets
- Construction Cost Estimate
- Bridge Sheets as outlined in the DOTD Bridge Design and Evaluation Manual

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5. Deliverables

- Proposed Plan Development Schedule
- Bridge Design Criteria
- 60% Preliminary Plans
- 90% Preliminary Plans
- Plan-in-Hand Meeting Attendance
- 100% Preliminary Plans
- Transportation Management Plan Checklist
- Plan Constructability Review Form
- Preliminary Design Report
- Design Waivers or Design Exceptions (if required)
- Preliminary Construction Cost Estimate

H&H will provide personnel to attend meetings with DOTD team members and appropriate agency stakeholders to facilitate development of the project or at the direction of the DOTD Project Manager.

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

Final Plan Development Services and Construction Support for Project No. H.012009 will be handled by Supplemental Agreement.

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	

6.0 Project Specific Procedures

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.

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

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.

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.

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Hardesty & Hanover, LLC Quality Assurance Plan

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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.

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- 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.

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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.

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- 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.

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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.

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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.

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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.

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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

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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.

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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

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- 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.

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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

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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.

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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

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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.

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- 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.)

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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.

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Design Plan Development

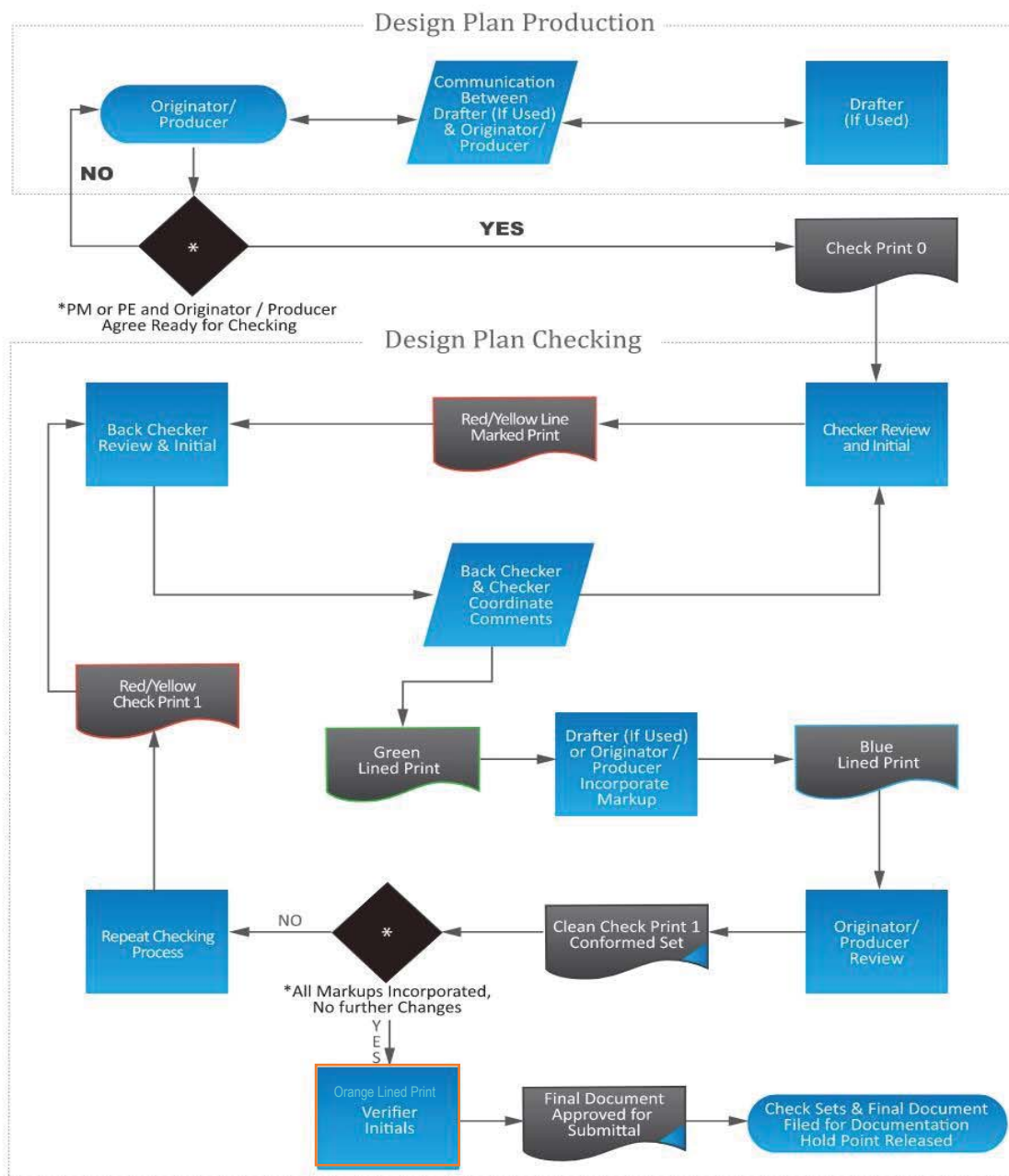


Figure 1

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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:

- a) 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.
- 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 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.
- c) Mark in RED on the Check Print any corrections, additions, and/or deletions, mark any questions directed to the Originator/Producer in RED.
- d) 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,

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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,

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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

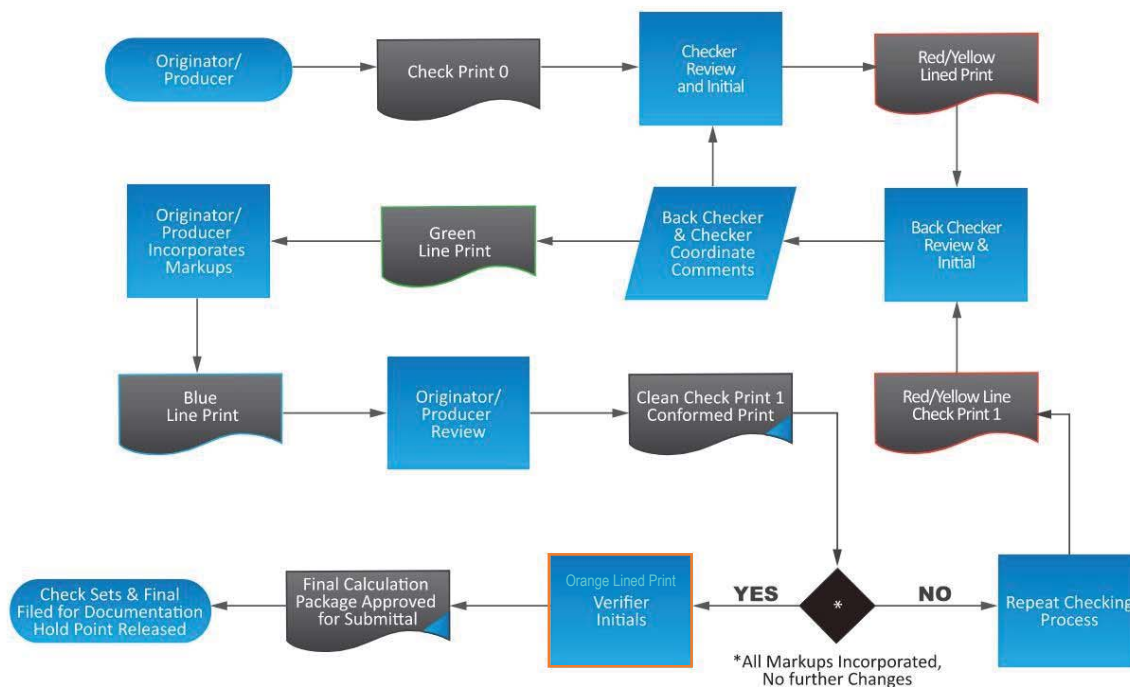


Figure 3

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

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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.

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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.

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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

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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.

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- 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.

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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.

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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

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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.

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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

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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.

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Hardesty & Hanover, LLC

QA/QC Forms & Checklists

		QUALITY ASSURANCE REVIEW & CERTIFICATION FORM		QAR Form	
SECTION 1: Submission Information (completed by PM or PQAL)					
Project Name:		Project Manager:			
H&H Project Number:		Submission PQAL:			
Project Delivery Stage: (Design, Post Design, Advisor, Insp.)		QAR File Name: (000XXX.XXQARyymmdd)			
Level of Development: (Milestone or % Complete)		Submission Date: (Start & End Dates) *		N/A ☐	
Document(s) QA Reviewed:					
File Location of QC Markups:					
File Location of Submission:					
SECTION 2: Summary of QC Process (verified and completed by PQAL)					
Were all inputs (calcs. / analysis, reports, models, etc.) for the deliverable document(s) QC Checked?				☐ Yes ☐ No ☐ N/A	
Submission contains multi-disciplinary reviews and completed QC Stamps indicating extent of review?				☐ Yes ☐ No ☐ N/A	
Was each discipline and component of the submission(s) fully checked and documented in YELLOW and RED ?				☐ Yes ☐ No ☐ N/A	
Does the GREEN backchecking demonstrate that all the Checker's comments were addressed and resolved?				☐ Yes ☐ No ☐ N/A	
Have all changes made by the Corrector been made and indicated with BLUE checks/highlighter?				☐ Yes ☐ No ☐ N/A	
Have all been changes been verified by a <i>clean check print</i> and marked with ORANGE check/highlighter?				☐ Yes ☐ No ☐ N/A	
Multiple/Concurrent QC check sets have been coordinated with PM and Discipline Leads and filed together?				☐ Yes ☐ No ☐ N/A	
Were additional Engineering Oversight activities (e.g. ITR, OTS, PR) performed and review comments resolved?				☐ Yes ☐ No ☐ N/A	
Were all previous review comments addressed and incorporated? Is a CRF included if required?				☐ Yes ☐ No ☐ N/A	
Subconsultant(s) has provided <i>QA certification</i> and has completed QC checking of their deliverable(s)?				☐ Yes ☐ No ☐ N/A	
The project's Submission Schedule and Quality information in Vantagepoint is complete and up to date?				☐ Yes ☐ No	
If "No" was selected from any of the above questions, PQAL to provide a brief summary of the findings and resolution/action(s) required. If "Yes" or "N/A" was selected, this section may be used to describe or clarify any other H&H services provided and certified by this QAR.					
Based on my observations and findings from the QA review of the QC documentation for this submission: - The requirements of the PSQMP have been met and the submission may proceed. - The PM and/or QMT should promptly review and address the findings noted above prior to submission.				Select One ☐ ☐	
Project QA Lead (PQAL) Signature & Date:					
SECTION 3: Recommended Actions / Approval (completed by PM, PQAL, & QMT as appropriate)					
The findings above have been discussed with the PQAL and/or QMT?		☐ Yes ☐ No ☐ N/A		Date Completed:	
The findings above have been satisfactorily resolved and verified?		☐ Yes ☐ No ☐ N/A		PQAL Sign/Date:	
Based on the above results, has QMT been consulted to issue a CAPA?		☐ Yes ☐ No ☐ N/A		CAPA # ☐ N/A	
The following actions are recommended for current / future submissions for compliance with the PSQMP and H&H's Quality Standards:					
Project Manager (PM) Signature/Date:		QMT Representative Signature/Date:		N/A ☐	

* The QAR Form may also be used to certify QC activities that were performed during a specific time period (e.g., monthly, quarterly) in addition to certifying discrete individual deliverables. This option may be used for Design-Build, Inspection projects, Owner Advisory roles, Post-Design / CSS, or CEI projects.

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INTERNAL TECHNICAL REVIEW FORM

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)		Discipline Reviewed (Check all that apply)		
	☐ Concept ☐ Preliminary ☐ Phase: _____ ☐ Other: _____ ☐ Final ☐ Release For Construction		☐ 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 Manager Date				
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 Reviewer Date				
4 - VERIFIED	All Reviewer comments have been addressed, either satisfactorily resolved or incorporated into the document. This document is complete. Submitted by: _____ Project Manager Date				
5 - APPROVAL	This review is complete. Submitted by: _____ Internal Reviewer Date				

 Prepared By
 J. Bade
 C. Leahy

 Approved By
 K. Griesing

 REV. 1 – Updated Date: 3/06/2020
 REV. 2 – Updated 05/27/2021
 REV. 2 ver 1 – Updated 07/22/2025

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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
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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.

— **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.



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						



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		



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

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
Neel-Schaffer, Inc.	10000 Perkins Rowe, Suite G360 Baton Rouge, LA 70810	Nick Ferlito, Jr., PE, PTOE nick.ferlito@neel-schaffer.com	(225) 924-0235
Terracon Consultants, Inc.	2822 O'Neal LN, Bldg B Baton Rouge, LA 70816	Lynne Roussel, P.E. lynne.roussel@terracon.com	(225) 239-2632
SJB Group, L.L.C.	5344 Brittany Dr, Baton Rouge, LA 70808	Matthew Estopinal Matt.Estopinal@sjbgroup.com	(225) 769-3400

23. Location:

N/A



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Metairie, LA 70002
T: 504.962.9212
la@hardestyhanover.com