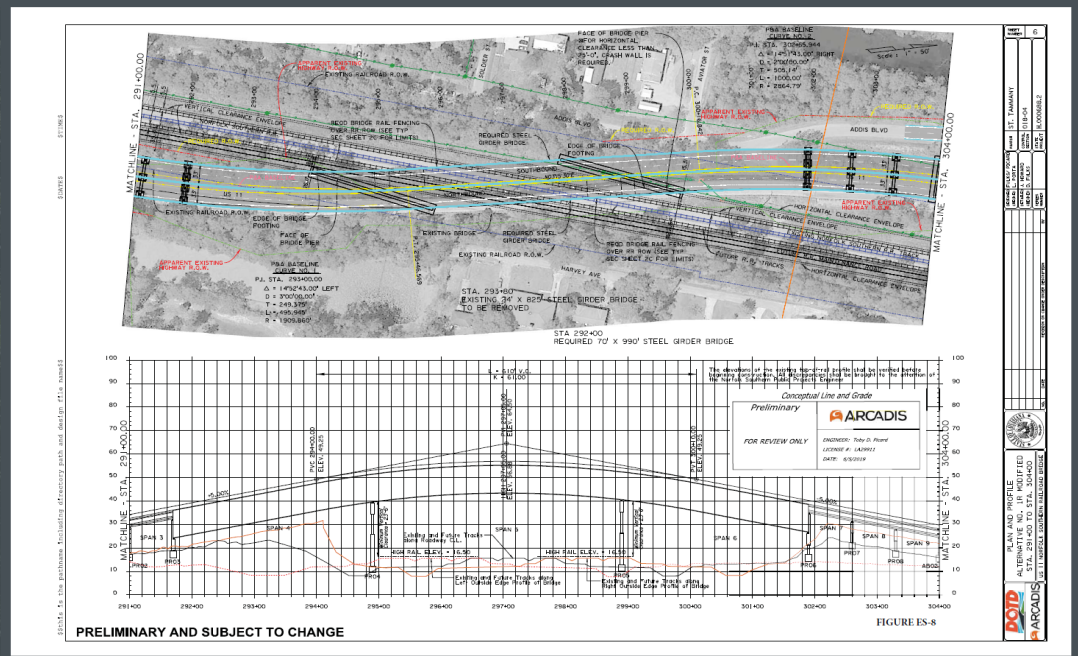
DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

ARCADIS


US 11 Bridge Southbound


US 11 Bridge Northbound



CONTRACT NO. 4400032800 / STATE PROJECT NO. H.000688.5

September 9, 2025

US 11 NORFOLK SOUTHERN RR OVERPASS (HBI)
ROUTE: US 11, ST. TAMMANY PARISH

Tuesday, September 9, 2025

Louisiana Department of Transportation and Development
1201 Capitol Access Road, Room 405-E
Baton Rouge, LA 70802-4438

Arcadis U.S., Inc.
6100 Corporate Blvd, Suite 325
Baton Rouge, LA 70808
Phone: 225 292 1004
Fax: 225 218 9677
www.arcadis.com

Subject: **CONTRACT NO. 4400032800,**
US 11 NORFOLK SOUTHERN RR OVERPASS (HBI), ROUTE: US 11, ST. TAMMANY PARISH

Dear Mr. Morvant and Selection Committee,

On behalf of Arcadis, we are pleased to submit our proposal for engineering and related services for the US 11 Norfolk Southern RR Overpass (HBI), State Project No. H.000688.5, Federal Aid Project No. H000688. As the team responsible for the Environmental Assessment (EA) for this project, we offer a unique and in-depth understanding of the project's challenges, opportunities, and historical context. Our prior engagement has enabled us to develop valuable insights into both the technical and environmental complexities of the overpass, as well as foster a collaborative working relationship with LADOTD.

Project Approach: Through the Arcadis Team's prior involvement in developing the original EA and recent discussion with the LADOTD project manager, our team will leverage our intimate knowledge of the project background, context, and key design considerations to optimize the design development process and address any budgetary constraints. We are committed to exploring alternative design options to optimize cost efficiency, such as:

- Assessing the possibility of crossing the railroad at a larger angle or an alternative location.
- Evaluating the use of different bridge types and structural systems, such as straddle bents, to reduce the span lengths and maximize the use of LG girders.
- Considering the use of drilled shafts in lieu of piles to address site-specific foundation requirements.
- Reviewing the potential to utilize available right-of-way (R/W) owned by Norfolk Southern Railroad for a "future" track, which may allow for a reduction in span length and overall project cost.

Environmental Document: We are fully aware that the approved Environmental Document represents a significant milestone. Our team will evaluate any proposed changes to the scope to minimize the need for re-opening the document, thereby avoiding delays and additional costs. We will work proactively with LADOTD to ensure that any recommendations are sensitive to R/W and displacement implications and fully align with NEPA requirements.

Team Qualifications: Our proposed team includes **Ardaman and Associates, Inc**. for geotechnical services, ensuring we meet all minimum personnel requirements (MPRs 5-7). With our combined experience in bridge design, environmental compliance, and geotechnical engineering, we are well-positioned to deliver innovative, cost-effective, and constructible solutions that address LADOTD's priorities.

Commitment to DOTD's Goals: We are committed to partnering closely with LADOTD and project stakeholders to deliver a successful outcome for the US 11 Norfolk Southern RR Overpass project. We look forward to the opportunity to leverage our project knowledge and technical expertise to deliver a solution that balances constructability, cost, and environmental stewardship.

Thank you for considering our proposal. Please do not hesitate to contact us.

Sincerely,
Arcadis

Akhil Chauhan PE, PTOE, PTP, PMP
Principal Transportation Engineer

Victor Sanchez, PE
Principal Bridge Engineer, Project Manager

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

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Arcadis has designed multiple bridges for FDOT's SR 9B corridor:

- SR 9B S.B. over Ramp 13-1 (Bridge No. 720739)
- SR 9B S.B. over I-95 (Bridge No. 720740)
- SR 9B N.B. over I-95 (Bridge No. 720741)
- SR 9B N.B. over Ramp D.1 (Bridge No. 720742)
- SR 9B over Russell Sampson Road (Bridge Nos. 780130 & 780131)
- SR 9B over Durbin Creek (Bridge Nos. 780132 & 780133)
- SR 9B over Peyton Parkway (Bridge Nos. 780134 & 780135)
- SR 9B over Race Track Road (Bridge Nos. 780136 & 780137)

Sections 1-11

DOTD FORM: 24-102

(Revised August 11, 2025)

PROPOSAL TO PROVIDE CONSULTANT SERVICES

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

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

1. Contract Name as shown in the advertisement	US 11 NORFOLK SOUTHERN RR OVERPASS (HBI) ROUTE: US 11 ST. TAMMANY PARISH
2. Contract Number(s) as shown in the advertisement	CONTRACT NO. 4400032800
3. State Project Number(s), if shown in the advertisement	STATE PROJECT NO. H.000688.5 FEDERAL AID PROJECT NO. H000688
4. **Prime consultant name (name must match exactly as registered with the Louisiana Secretary of State (SOS) where such registration is required by law; including punctuation; include screenshot from SOS at the end of Section 20**)	ARCADIS **Arcadis U.S., INC.**
5. Prime consultant license number (as registered with the Louisiana Professional Engineering and Land Surveying Board (LAPELS) if registration is required under Louisiana law)	EF.0002808 DUNS 057690414
6. Prime consultant mailing address	6100 Corporate Blvd., Suite 325 Baton Rouge, LA 70808
7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)	6100 Corporate Blvd., Suite 325 Baton Rouge, LA 70808
8. **Name, title, phone number, and email address of prime consultant's contract point of contact**	Victor Sanchez, PE *Principal Bridge Engineer / Project Manager* P. 215 931 4378 | E. victor.sanchez@arcadis.com
9. **Name, title, phone number, and email address of the official with signing authority for this proposal**	Akhil Chauhan, PE, PTOE, PTP, PMP *Senior Vice President* P. 225 368 6563 | E. akhil.chauhan@arcadis.com

10. This is to certify that all information contained herein is accurate and true, and that the team presently has sufficient staff to perform these services within the designated time frame. By submitting this proposal, proposer certifies that it is not engaged in a boycott of Israel and it will, for the duration of its contract obligations, refrain from a boycott of Israel. Proposer also certifies and agrees that the following information is correct: In preparing its response, the proposer has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor or supplier, refused to transact or terminated business activities, or taken other actions intended to limit commercial relations, with a person or entity that is engaging in commercial transactions in Israel or Israeli-controlled territories, with the specific intent to accomplish a boycott or divestment of Israel. The proposer also has not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. DOTD reserves the right to reject the response of the bidder or proposer if this certification is subsequently determined to be false, and to terminate any contract awarded based on such a false response. **Pursuant to Act No. 581 of the 2024 Louisiana Legislature Regular Session, proposer further certifies that it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association based solely on the entity's or association's status as a firearm entity or firearm trade association. In addition, proposer certifies it will not discriminate against a firearm entity or firearm trade association during the term of the contract based solely on the entity's or association's status as a firearm entity or firearm trade association.**	 Signature above shall be the same person listed in Section 9: Date: September 9, 2025

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

US 11 Norfolk Southern Railroad Environmental Assessment Route US 11

State Project No. H.000688.2

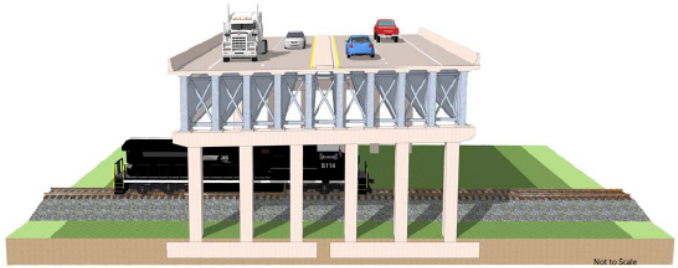
Federal Aid Project No. H000688

St. Tammany Parish, Louisiana

August 2022

DOTD LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

U.S. Department of Transportation Federal Highway Administration



Typical Bridge Section, Norfolk Southern Railroad Overpass.

FIGURE 4

3.3 GIS Environmental Inventory

An environmental inventory of existing social, natural, and cultural resource (secondary-source) data was collected within the Study Area. This information was supplemented with field-collected (primary-source) data for the Study Area and proposed alternatives. A Geographical Information System (GIS) was developed for the project and utilized to map and analyze the human, natural, and cultural resources and the proposed preliminary alternatives.

3.4 Alternatives Development

3.4.1 Stage 0 Alternatives

The Study Area was initially evaluated in a Stage 0 Feasibility Study completed for the RPC and is available at the RPC and LADOTD. The *US 11 Corridor Improvements Stage 0 Feasibility Study* (Krebs et al. 2008) developed a preliminary purpose and need statement, initial project concepts to address the needs, and potential alternatives to the initial concepts. Two alternatives were identified in the Stage 0 study:

- Widening of US 11 from I-12 south to US 190 and replacement of the bridge crossing the NS railroad; and
- Widening of US 11 from 1-12 south to US 190, removal of the bridge crossing the NS railroad, and replacement with an at-grade crossing of the NS railroad.

Early coordination with federal, state, and local agencies solicited comments and responses that were combined with available environmental data. This information was used to help determine if the preliminary alternatives impact certain human, natural, or cultural resources that would result in the decision to dismiss an alternative from further evaluation. This coordination resulted in the dismissal of an at-grade crossing as a viable alternative.

Arcadis completed the **Environmental Assessment for this project, providing us with an intimate knowledge of the US 11 Norfolk Southern Railroad Bridge**. This experience gives us an unparalleled understanding of the site's environmental, regulatory, and logistical complexities, enabling us to approach the design with a level of familiarity and insight other teams simply do not have. This means we can anticipate challenges, streamline processes, and deliver innovative solutions tailored to the specific needs of the site. This continuity ensures that the foundational work we have already completed seamlessly informs the next phase, resulting in a more efficient, cost-effective, and cohesive outcome for DOTD.

Sections 12-14

12 DISCIPLINE TABLE:

As indicated in the advertisement, insert a completed table here. The percentages for the prime and sub-consultants must total 100% for each past performance evaluation discipline, as well as the overall total percent of the contract.

The only past performance evaluation disciplines to be used are listed in the drop down in each row (Appraiser, Bridge, CE&I/OV, CPM, Data Collection, Environmental, Geotech, ITS, Other (must specify), Planning, Right-of-Way, Road, Survey, and Traffic). Remove rows as needed.

Discipline(s)	% of Overall Contract	Arcadis	Ardaman	Each Discipline must total to 100%
Road	40%	100%	-	**100%**
Bridge	30%	100%	-	**100%**
Geotech	10%	10%	90%	**100%**
Environmental	20%	100%	-	**100%**
Identify the percentage of work for the **overall contract** to be performed by the prime consultant and each sub-consultant.				
Percent of Contract	**100%**	91%	9%	

13 TEAM SIZE:

For all firms that are part of this team, indicate the approximate number of personnel to be committed to this contract, by DOTD Job Classification and the total number of personnel within the firm that could provide support, if needed. If a specialized job classification is required and not included on the DOTD job classification list, specify "Other (must specify)" and include the classification title inside the parentheses. The DOTD Job Classification(s) to be used can be found at the following link: https://bit.ly/DOTDJobClassifications

Firm name	DOTD Job Classification	Number of personnel committed to this contract*	Total number of personnel available in this DOTD Job Classification (if needed)
ARCADIS	Engineer	11	13
	Engineer Intern	1	1
	Engineer - Other	8	9
	Environmental Manager	1	1
	Environmental Pro	1	2
	Principal	3	4
	Supervisor - Eng	9	10
Ardaman & Associates, Inc.	Engineer	2	4
	Supervisor - Eng	1	2

*__For evaluation purposes only__, and as referenced in the Scope of Services on page 2 of IDIQ advertisements only, the consultant shall assume the number of concurrently active task orders specified in the advertisement and shall identify the number of **committed** personnel accordingly.

14 ORGANIZATIONAL CHART:

Legend:
1 - Arcadis
2 - Ardaman

* Fulfillls MPR
* TEPR Modules 1-3 Training (TEPR)
* Workzone Training

Principal -in-Charge

Akhil Chauhan, PE, PTOE, PMP, PTP[1]**

Project Manager

Victor Sanchez, PE[1]*

QA/QC & Technical Advisors

Buddy Porta, PE[1]
(Road Design)

Bob Beasley, PE[1]
(Bridge)

Traffic

Ari Deitch, PE, PTOE, PTP, RSP[1]**
Kester Hollier, PE, PTOE[1]**
Max Aguirre, PhD, PE, PTOE, RSP2I[1]*

Environmental

Jason Morrell, PWS[1]
Jan Hughes[1]

Railroad Coordination

Sean Markey, PE[1]
William Jansen, PE, LEED AP BD+C, ENV SP [1]

Roadway/Drainage Design

Jose L. Rodriguez, PE[1]**
David Fulks, PE[1]
Gabriel Arias, PE[1]
Garrett Keller, PE[1]
Craig Raymond, PE[1]

Drainage
Colin Sarratt, PE[1]
Lina Khoury, PE, CPESC, CFM[1]
Antonia Donnelly, PE[1]
Amanda Check, PE[1]

Added Value Services

Construction Support
Jose L. Rodriguez, PE[1]*
Victor Sanchez, PE[1]*
Ming Teng, PE[1]

Alternative Project Delivery Specialist
Keith Kunst, PE[1]

Bridge Design

Osama Shahawy, PE[1]
Ming Teng, PE[1]
Pooja Rao Madku, PE[1]
Joseph Belmonte, PE[1]
Badre Enam, PE [1]
Sharear Kabir, PE[1]
Bryan Barnes, EI[1]

Geotechnical

Kirk Lowry, PE, BC.GE[1]*
Ayan Mehrotra, PE, PMP[1]*
Megan Bourgeois, PE[2]**
Robert Jewell, PE[2]**
Mark Woodward, PE[2]

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Arcadis provided all engineering and related services required for developing a comprehensive, feasible alternative for replacing the bridge structures located on Market Street and Spring Street over Cross Bayou in Caddo Parish, Louisiana. An in-depth analysis of structural and roadway approaches was performed to develop the most effective cost for bridge replacement and roadway improvement. Four alternatives have been identified for the Spring St. Bridge replacement, and two options for the Market St. Bridge. The existing profile has been maintained to avoid impacting roadway intersections, RR crossings, driveways, and drainage.

Sections 15-16

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	Akhil Chauhan, PE, PTOE, PTP, PMP *(>23 years' experience)*	ARCADIS	PE. 33703 – Civil	LA	09/2026
2	Akhil Chauhan, PE, PTOE, PTP, PMP *(>23 years' experience)*	ARCADIS	PE. 33703 – Civil	LA	09/2026
3	Jose L. Rodriguez, PE *(>24 years' experience)*	ARCADIS	PE. 30492 – Civil	LA	3/2027
4	Victor Sanchez, PE, MSCE *(>23 years' experience)*	ARCADIS	PE. 33976 – Civil	LA	09/2026
5	Kirk Lowery, PE, BC.GE *(>23 years' experience)*	ARCADIS	PE. 40973 – Civil and Environmental	LA	09/2026
	Megan Bourgeois, PE *(>19 years' experience)*	Ardaman & Associates, Inc.	PE. 36725 – Civil	LA	03/2026
6	Ayan Mehrotra, PE, PMP *(>18 years' experience)*	ARCADIS	PE. 25665 – Civil	LA	09/2026
	Robert Jewell, PE *(>18 years' experience)*	Ardaman & Associates, Inc.	PE. 38579 – Civil	LA	09/2026
7	Robert Jewell, PE *(>18 years' experience)*	Ardaman & Associates, Inc.	PE. 38579 – Civil	LA	09/2026

16 STAFF EXPERIENCE.

Firm employed by. ARCADIS				Meet MPR Nos. 1 & 2
Name	**Akhil Chauhan, PE, PTOE, PTP, PMP**		Years of relevant experience with this employer	17
Title	Principal Engineer		Years of relevant experience with other employer(s)	5
Degree(s) / Years / Specialization			MS / 2003 / Transportation Engineering, Massachusetts Institute of Technology BS / 2001 / Civil Engineering, Indian Institute of Technology	
Active registration number / state / expiration date			PE. 0033703 / LA / Exp. 09/2026; PTOE 2544 / USA / Exp. 11/2026 PTP 246 / USA / Exp. 12/2027; PMP 1444676 / USA / Exp. 08/2026	
Year registered	2008	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities			**Principal-in-Charge**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Chauhan is a principal engineer with **22 years of applied research and industry experience** in transportation planning and design. Akhil has successfully led, managed, and mentored numerous transportation improvement projects for public agency clients located across the nation including several state Departments of Transportation. Projects include transportation planning and feasibility studies, environmental studies, and large scale design projects including alternative delivery (CMAR, Design Build, P3). **Mr. Chauhan meets Minimum Personnel Requirement Number 1 & 2.**
04/13 – 10/20	**LADOTD, US 11 Railroad Bridge Replacement and Corridor Improvements Environmental Assessment, St. Tammany Parish.** *Principal Engineer*. Responsible for crash analysis, operating speed tabulations, intersection and corridor analysis, ***line and grade*** and public outreach for the proposed widening of US 11 between US 190 (Gause Boulevard) and I-12 in Slidell. Proposed improvements include the ***replacement of a bridge crossing the Norfolk Southern Railroad.*** Critically, this project includes analysis of several innovative alternatives for the proposed corridor, including "***superstreets***" and J-turn concepts.
11/20 – Ongoing	**LADOTD, I-10 CMAR, East Baton Rouge Parish, LA.** *Principal Engineer.* Responsible for technical advisory and QAQC of all traffic engineering tasks including development of permanent signing plans, Interchange Modification Reports, and Transportation Management Plans for the widening of I-10 from LA 415 to Essen Lane and improvements to interchanges along this segment. One critical component of the project is ***maintaining traffic during the construction of new bridge structures.*** Multiple scenarios are being evaluated using a calibrated mesoscopic model to determine the impacts during construction and mitigations that will be necessary to minimize delay.
01/14 – Ongoing	**Pete's Highway Traffic Study and Environmental Assessment, LADOTD, Denham Springs, LA.** *Principal Engineer*. Responsible for contract management and deliverables for the project which included traffic and safety analysis, signal timing and warrant analysis, alternative screening and analysis, ***preliminary roadway and bridge design, line and grade***, Interchange Modification Report, and Environmental Assessment. Purpose of the project is to improving operations and safety along Range Avenue.
04/16 – Ongoing	**LADOTD, Florida Avenue Environmental Assessment, Orleans Parish, LA.** *Principal Traffic Engineer*. Responsible for QA/QC and documentation for the project that includes traffic, environmental, ***line and grade***, and public outreach and involvement

	services for one of the last projects funded by Louisiana's TIMED Program. The project traverses post-Katrina re-development areas in both Orleans and St. Bernard Parishes. ***Key considerations include the type and height of the bridge*** and controlling truck traffic diversion through neighborhoods. Using the New Orleans Regional Planning Commission's SELATRAM travel demand model (TDM), Arcadis coded alternatives for a comparative analysis of partial and full build scenarios.
05/19 – 11/22	**I-20/I-220 Interchange Improvements and BAFB Access Design-Build, LADOTD, Bossier Parish, LA.** *Principal Engineer.* Responsible for overseeing the development of addendum to ***I***nterchange Modification Report, Transportation Management Plan, temporary sign timing and design plans, Temporary Traffic Control Plans, and Permanent Signing Plans to accommodate the design and construction of the project. The design-build project includes the modification of the existing interchange at I-20/I-220 with additional ramps and extension of I-220 to provide access to Barksdale Air Force Base.
12/13 – 06/15	**LA 3235 Corridor Safety Improvements, LADOTD, Lafourche Parish, LA.** *Project Manager and Principal Engineer*. Responsible in the preparation of a formal traffic and access management Stage 0 study, in accordance with LADOTD Stage 0: Manual of Standard Practice, that analyzed alternatives and enhanced mobility and safety on LA 3235. Main tasks included traffic data collection, warrant studies, traffic analysis, safety analysis, ***design development,*** and public outreach. Intersections found to warrant signalization were also modeled in unconventional designs including U-turns, J-turns, and RCUTs. A cost estimate and conceptual layout drawings were also produced.
02/23 – 05/24	**District 04 Pedestrian Safety Improvements, LADOTD, Caddo and Bossier Parish, LA.** *Principal Engineer & Technical Advisor*. Responsible for ***contract management and technical advisory*** for this Stage 0 Feasibility study to develop and evaluate safety countermeasures to address pedestrian safety needs on 7 corridors within Caddo and Bossier Parish. The study methodology was similar to that of a Road Safety Assessment, and included historical crash analysis and on-site field reviews to identify pedestrian safety needs. Countermeasures were developed in close coordination with project stakeholders including City of Bossier, City of Shreveport, NLCOG, Downtown Development Distriction, and District 04. Stakeholders also participated in virtual and on-site field reviews. Study data, methods, and results were documnted in a Stage 0 Feasibility Reports were completed for all 7 study corridors with Preliminary Scope and Budget Checklist and Environmental Checklist. Benefit-cost analysis was provided to aid in prioritizing the implementation of countermeasures.
04/16 – 10/19	**I-12 Hard Shoulder Running Feasibility Study and Preliminary Design, LADOTD, East Baton Rouge and Livingston Parishes, LA.** *Principal Engineer.* Responsible for ***contract management and technical advisory*** of project tasks. Arcadis researched best practices around the country to develop potential alternatives. Highway Safety Manual methods were applied to quantify the safety performance of proposed alternatives. Traffic analysis was performed using a calibrated microsimulation model to evaluate the operational performance of HSR and HOV lane alternatives. ***Conceptual drawings*** and ***construction cost estimates*** were developed to evaluate the feasibility of proposed alternatives.
02/17 – 02/18	**I-49 Interchange Safety Improvements, LADOTD, Lafayette Parish, LA.** *Principal Engineer.* Responsible for contract management and technical advisory for project tasks including data collection and analysis, traffic and safety analysis, and ***conceptual design drawings***. Purpose of the project was to identify feasible ***improvement alternatives*** to address historical safety issues along the I-49 corridor and at 3 interchanges. Participated with meetings with LADOTD HQ and District 03 team members to understand project needs and develop context sensitive solutions.

Firm employed by. ARCADIS				Meets MPR No. 4
Name	**Victor Sanchez, PE, MSc**		Years of relevant experience with this employer	2.5
Title	Principal Bridge Engineer		Years of relevant experience with other employer(s)	25
Degree(s) / Years / Specialization			MS / 2017 / Civil Engineering-Structures BS / 1991 / Civil Engineering with a major in Structures	
Active registration number / state / expiration date			PE.0033976 / LA / Exp. 09/30/2026	
Year registered	2008	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities			**Project Manager**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Sanchez is the **Lead Bridge and Structural Engineer** for Arcadis' Louisiana Operations. Victor is highly skilled with the design and detailing of structures using AASHTO-LRFD, the Louisiana Department of Transportation Bridge Design Manual, and software applications such as OpenBridge for the modeling and planning of bridges. Project applications include **Stage 0 Feasibility Studies** and design projects. He applies sound structural knowledge to perform hand calculations for bridge structural design and possesses strong management skills and a willingness to work collaboratively with different groups inside the organizational team, including clients, other disciplines' engineers, and project managers within the project organization. His exceptional leadership skills, combined with his knowledge of the LADOTD policies, standards, and manuals, make him an ideal team builder to perform at its highest level of potential. **Mr. Sanchez meets Minimum Personnel Requirement Number 4.**
02/22 – Ongoing	**I-10 Calcasieu River Bridge P3 (Calcasieu Parish, LA).** *Bridge Lead Engineer.* The I-10 Calcasieu is one of the first Public-Private-Partnership projects in Louisiana and entails the replacement of several bridges, including the main structure crossing over the Calcasieu River. The project is divided into three segments. Arcadis is leading the design of segment 1. Segment 1 includes the replacement of an access ramp; the WB I-210 Ramp over the I-10. The bridge is a ***six-span bridge*** that consists of two units, each unit is a three-span continuous curved steel plate girder bridge, and the substructure consists of concrete hammer-head piers on concrete spread footing on precast concrete piles. Role as ***Bridge Lead Engineer and EOR*** is to guide a team of engineers and drafters to prepare plans, calculations, and quantity takeoff for the replacement of the WB I-210 Ramp over the I-10, and work along with other partners in coordination meetings with the owner and the contractor for this project.
10/22 – Ongoing	**Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Replacement (OSBR) Program, District 01, LADOTD.** *Bridge Lead Engineer.* Arcadis prepared ***preliminary and final plans of six proposed bridges,*** which included plan and profile sheets, typical roadway sections and quantities, a general bridge plan, traffic detour and road closure details, and relevant signing plans, as well as channel cross-sections.
04/23 – 01/25	**Stage 0 Studies IDIQ – LA 22 Tchefuncte River Bridge, LADOTD, St. Tammany Parish, LA.** *Lead Bridge Design Engineer.* Responsible bridge design for the ***Stage 0 Feasibility Study*** to develop and evaluate ***feasible alternatives*** for the replacement of the LA 22 Tchefuncte River Bridge in Madisonville, LA. The bridge has a high frequency of opening due to marine traffic and low elevation above the river. Arcadis developed several bridge alternatives, including fixed and movable bridge options. Alternatives were evaluated with respect to construction cost, ROW, traffic and safety, and environmental. All study methods and results were documented in a ***Stage 0 Feasibility Report*** with ***Preliminary Scope and Budget Checklist*** and an ***Environmental Checklist***.

06/14 – 07/15	**I-10 Over Julia Street, Girder Rehabilitation Project, LADOTD, New Orleans, LA.** *Bridge Design Engineer / Engineer of Record*. Led bridge design to address partial failure of connecting plates attaching girders to ***straddle bents*** on an I-10 exit ramp. Scope included replacing a steel cap beam at straddle bent 25w, all connecting plate elements at cap 26w, and ***analysis/rehabilitation*** of the affected three-span continuous structure (74'-132'-132'). Coordinated contract documents, plans, calculations, estimates, and provided QC/QA. Supported construction by reviewing and approving contractor shop drawings and calculations.
05/16 – 05/17	**UP Railroad Overpass Near Tioga, LADOTD, Rapides Parish, LA.** *Lead Bridge Design Engineer / Engineer of Record*. The total bridge length is 950’ and consists of a main span using steel plate girders as superstructure elements over three continuous spans (210’-275’-210’); the bridge approaches to the main spans consist of two 85’ AASHTO type III prestressed concrete continuous spans at the north side and one 85’ AASHTO type III prestressed concrete span at the south side. The bridge substructure consists of concrete piers and caps supported on columns, which are supported on drilled shafts and spread footings ***on drilled shafts***. Conducted ***bridge design*** as the ***Lead Engineer and Engineer of Record (EOR)***, responsible for the contract document preparation, including ***cost estimating***, specifications, ***final plans preparation***, structural calculations, load rating, and coordination for project delivery per Louisiana Department of Transportation policies.
04/16 – 12/16	**Indian Bayou Bridge and Approaches, LADOTD, Calcasieu Parish, LA.** *Lead Engineer and Engineer of Record*. The total bridge length is 675’ and consists of 3 continuous span units with a length of 225’, with each unit using precast prestressed concrete girders as superstructure elements over three continuous spans (75’-75’-75’). The bridge substructure consists of concrete piers and caps supported on precast prestressed concrete piles. Served as Lead Engineer and Engineer of Record (EOR), responsible for the contract document preparation, including ***cost estimating***, specifications, ***final plans preparation***, structural calculations, load rating, and coordination of project delivery per Louisiana Department of Transportation policies.
04/15 – 03/16	**UP Railroad Bridge at Sicard, LADOTD, Ouachita Parish, LA. (LADOTD).** *Lead Engineer*. This bridge consists of a main span using steel plate girders as main superstructure elements over three continuous spans (102’-175’-102’); the bridge approaches consist of three 84’ continuous spans at the north side and to the south side, three 84ft continuous spans for a total structure length of 883’ located in a straight alignment and skew of 68 degrees concerning a line normal to the center line of the bridge. The main superstructure elements of the approaches are prestressed concrete AASHTO Type IV girders, and the bridge substructure consisted of multi-column bents on concrete footing supported on prestressed concrete piles. ***Completed plan quality reviews***, prepared the ***bridge load rating*** report, and assisted the environmental section of the LADOTD in completing the ***environmental clearance*** for the project. In addition, provided load rating and construction support, reviewing the shop drawings submitted by the general contractor.
05/18 – 11/19	**I-485 from I-77 to US 74; I-485/Weddington Rd Interchange; and I-485 /East John St. - Old Monroe Rd. Interchange (design-and-build), Mecklenburg County, NC.** *Led Structural Design and Project Management for the replacement of two bridges in the project*. STR#1 over Westinghouse Blvd. and widening of STR#12 over CSX railroads. STR#1 involves replacing the existing structure over I-485 with two prestressed concrete bridges of lengths 125ft and 132 ft, utilizing the 63” Florida-I Beam and integral end bents on steel piles. STR#12, over CSX railway, is a twin bridge on I-485 with a three-span continuous structure and a total length of 165ft. The substructure includes stub abutments on steel piles and multi-column bents on spread footings. Managed ***structural design***, ***coordination***, and local staff to ensure ***budget control*** and ***timely delivery*** to NCDOT.

Firm employed by. ARCADIS			
Name	**Lloyd "Buddy" Porta, Jr., PE**	Years of relevant experience with this employer	13
Title	Principal Engineer	Years of relevant experience with other employer(s)	37
Degree(s) / Years / Specialization		BS / 1973 / Civil Engineering, Louisiana State University	
Active registration number / state / expiration date		PE.016425 / LA / Exp. 09/2025	
Year registered	1977	Discipline	Civil Engineer, Environmental Engineer
Contract role(s) / brief description of responsibilities		**QAQC and Technical Advisor (Roadway), Construction Support**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Porta brings more than **50 years of experience in the transportation field**. During his 37-year career at LADOTD, he practiced highway design for 11 years with 8 of those years in responsible charge of a design squad. He spent the next 21 years of his career in project/program management. He managed the Off-System Bridge Replacement Program and the Urban System Program. Both programs replaced or constructed new bridges on parish and state routes. In 2001 he was tasked with being the LADOTD TIMED Program Manager. This $5 billion program was developed to multi-lane over 500 miles of state highways as well as construct 3 new bridges, 2 of these bridges across the Mississippi River. He spent the last 5 years of his career at LADOTD as the **State Road Design Engineer Administrator.**
04/12 – 01/14	**US 11 Norfolk Southern Railroad Overpass Replacement Environmental Assessment and Line and Grade Study, LADOTD, Slidell, Louisiana.** Responsible for ***LADOTD design guideline compliance***. Replacement and widening of the US 11 roadway overpass of the Norfolk Southern Railroad. The project included evaluating partial and full-access intersection options and bridge alignment and type alternatives for the heavily skewed and long steel span bridge in this urban area of Slidell, Louisiana. Key issues included the bridge's imminent historic status, commercial parking impacts and adapting to the Norfolk Southern right-of-way and travel pattern changes following the construction.
06/84 – 07/10	**LADOTD, Off-System Bridge Program, Statewide, LA.** *Program Manager*. DOTD's First Program Manager for OSBRP. Replaced/rehabilitated existing bridges located on nonfederal routes in the cities and/or parishes in Louisiana. Provided the project and program management. Responsible for the selection of the qualifying sites, the distribution of the federal funds to the participating parishes, the selection of the design consultant, the coordination with the parishes and the consultants, the development of the scope of services and fee for each project, the technical review of the topographic surveys and construction plans and providing comments to the consultants and parishes, and the approval of all invoices.
10/16 – 02/18	**LADOTD Off-System Highway Bridge Replacement Program, North Bayou Black Drive Bridge, Terrebonne Parish, LA.** *QA / QC Reviewer.* Reviewed plans for the ***replacement of an off-system highway bridge***. Detailed design effort included field surveying, right of way adjustments, crash barrier selection, hydraulic analysis, preliminary and final plan preparation, and quantity estimation.
10/16 – 02/18	**North Bayou Black Drive Bridge Off-System Highway Bridge Replacement Program, LADOTD, Terrebonne Parish, Louisiana.** Reviewed plans for the replacement of an off-system highway bridge. Detailed designed effort included field surveying, right of way adjustments, crash barrier selection, hydraulic analysis, ***preliminary and final plan preparation*** and cost estimates.
09/12 – 12/15	**US 165 Connector and Ouachita River Bridge - Environmental Impact Statement, Line and Grade and Toll Study, LADOTD, Monroe, Louisiana.** Responsible for ***QAQC of roadway plans, line and grade, and LADOTD design guideline compliance***.

	Three alternatives were developed and evaluated along with various tolling scenarios. All alternatives traverse substantial tracts of wooded wetlands associated with Chauvin Swamp near the Russell Sage Wildlife Management Area.
12/13 – 06/15	**LA 3235 Corridor Safety Improvements, LADOTD, Lafourche Parish, LA.** *Technical Advisor.* Provided design oversight and technical advisory role for the ***geometric layout*** of safety improvements including ***access management, restrictive intersections***, and added turn lanes. Reviewed ***construction cost estimates*** for proposed improvements to assess ***feasibility*** of proposed alternatives.
07/15 – 05/19	**US 190B at Jefferson Ave. Roundabouts, LADOTD, Covington, Louisiana.** *QA / QC Reviewer.* Supported the construction of a new roundabout in Covington as a ***quality assurance/quality control reviewer for roadway plans***. Plans reviewed included the ***construction of sidewalk for use by pedestrians***.
09/09 – 03/12	**I-20 Garrett Road Connector Interchange Improvements, LADOTD, Ouachita Parish, LA.** *Technical Advisor.* Provided design oversight and technical advisory role for the ***Geometry and roadway design*** of the new KCS Railroad overpass and connector between Kansas Lane and Garrett Road, including interstate interchange modifications to include two-lane roundabouts at ramp intersections, and three two-lane roundabouts outside of the interchange. ***Improvements to the pedestrian and bicycle facilities*** were included in accordance with the ***LADOTD Complete Streets Policy***.
11/14 – 10/15	**LA 44 and Loosemore Road Roundabout, LADOTD, Ascension Parish, LA.** *Technical Advisor.* Provided design oversight and technical advisory role for the ***Geometric and roadway design, preliminary subsurface utility investigation,*** and ***cost estimates*** for the replacement of an existing two-way stop-controlled intersection with either a single-lane roundabout or two single-lane roundabouts and right-in/right-out control at the existing intersection.
01/14 – Ongoing	**Pete's Highway EA and Alternatives, LADOTD, Livingston Parish, Louisiana.** Responsible for ***QAQC of roadway plans, line and grade, and LADOTD design guideline compliance***. High-priority project completing an EA and traffic engineering services related to improving congestion and operations along Range Avenue in the vicinity of the I-12. Alternatives included two split diamond interchange options with roundabout, partial clover leafs, and c-d road components at both Range Avenue and the next existing, eastern overpass at Pete's Highway (LA 16); and a diverging diamond interchange alternative at Range Avenue.
09/01 – 05/06	**Transportation Infrastructure Model for Economic Development (TIMED) Program, LADOTD, Statewide, Louisiana.** L*ADOTD TIMED Program Manager.* Worked and coordinated on a daily basis with the TIMED Program Manager (LTM) to develop training, procedures, policies, and guidelines for the program. This $5 billion program was developed to ***multilane over 500 miles of state highways as well as construct three new bridges;*** two of these bridges across the Mississippi River. The program manager was required to monitor the progress of the program and had full invoice approval of the consultant's monthly invoice. This position was a member of the TIMED Program Executive Committee and reported to the Secretary of the LADOTD. There were 16 projects that were recognized throughout the state. Bonds were sold to finance and, therefore, accelerate the program. Over 500 miles of state roadways were multilaned and three new bridge projects were designed.
05/06 – 07/10	**Road Design Engineer Administrator, LADOTD, Statewide, Louisiana.** Responsible for transitioning the focus of his section from project management back to ***roadway design*** as desired by the Chief Engineer. To support this mandate, brought in training from the FHWA Resource Center in Atlanta, GA to assist the development of a young group. Coordinated the training and provided through the Louisiana Transportation Training Education Center. Developed a Legal Seminar to address the lack of experience in Road Design and other LADOTD sections in depositions and representing the Department in court with the assistance of the Attorney General's Office. Responsible for the ***development of design criteria for Offset Left Turn Lanes and design guidelines for the replacement of bridges on state routes.***

Firm employed by. ARCADIS

Name	**Robert (Bob) Beasley, PE**	Years of relevant experience with this employer	34
Title	Principal Bridge Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		BS / 1989 / Civil Engineering, University of Akron, Structures	
Active registration number / state / expiration date		PE.0034159 / LA / Exp. 03/31/2027	
Year registered	2008	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**QAQC and Technical Advisor (Bridge)**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Beasley has more than 34 years of relevant design experience in management and design of bridges and structures. He has been exposed to a variety of projects working for many municipalities such as counties, cities, and park districts and other clients such as Departments of Transportation, the US Army Corps of Engineers, CSX Transportation, and Norfolk Southern. His varied project experience includes numerous railroad structures, highway underpass and overpass bridges, bridge rehabilitations, pedestrian bridges including cable-stayed, and retaining walls. Bob has inspected and load rated many bridges. Bob has inspected and load rated many bridges. Bob is a member of AREMA Subcommittee 8 – Concrete Structures & Foundations assisting with the development of structural specifications.
02/23 – Ongoing	**Cross Bayou Bridge Replacement, LADOTD, Caddo Parish, LA.** *Senior Bridge Design Engineer.* Conducted ***Stage 0 Feasibility study*** to develop and evaluate alternatives for the replacement of two existing bridges over Cross Bayou. Developed ***Stage 0 Documentation*** including ***Preliminary Scope and Budget*** and ***Environmental Checklists***.The next phase of the project will be conducted under the same contract and will include the development of construction plans.
11/17 – Ongoing	**I-10: Highland to LA 73 Design-Build: LADOTD, East Baton Rouge Parish, LA.** *Independent Design Reviewer* for performing an independent design assessment and analytical check of the new interstate bridges over Highland Road (LA 42) as well as for the widening and rehabilitation of the interstate bridges over Bayou Manchac. The Highland Road bridge was 310'-0" long with a 190'-0" steel plate girder main span. The Bayou Manchac bridge was 200'-0" long with 25'-0" slab spans on pile bents. Arcadis completed separate, independent calculations of the deck, girders, slab spans, bearings, splices, and substructure using DOTD approved design software.
11/14 – 12/14	**Dearborn Division Hawley Street Bridge Repairs, Norfolk Southern Corp., Toledo, OH**. *Lead Bridge Engineer* for the repair of a three span, ballasted concrete deck rolled beam superstructure supported on concrete wall abutments and steel piers. The Hawley Street Bridge was hit and damaged by a snow plow. The emergency design included the replacement of a portion of the concrete deck, the sacrificial end plate girder and two interior rolled beams.
02/11 – 08/11	**Dearborn Division Fixed Point Replacement, Norfolk Southern Corp., Cleveland, OH.** *Lead Bridge Engineer* for the replacement of a fixed point structure spanning a 48" diameter water main to allow for ballast over the fixed point. A thick steel plate connected to and supported by precast concrete approach slabs was designed to span over the water main.
01/07 – 11/13	**Gulf Intracoastal Waterway, West Closure Complex, US Army Corps of Engineers, New Orleans, LA.** *Lead Bridge Engineer* This ***$800 million project*** which was completed using the ECI (early contractor involvement) method. This method is the same as Construction Management at Risk (CMAR). ***Arcadis worked directly with the Corps and Contractor to reduce flood risk*** for residences and businesses in three parishes on the west bank of the Mississippi River. As a part of this project Arcadis developed an access bridge using precast, prestressed concrete voided slabs on pile bents with precast concrete piles.

	Portions of the access structure were supported on the pump station inlet walls. Numerous utilities going to and from the pump station were supported on the side and below the voided slabs.
09/12 – 11/14	**Albany Division, River Subdivision Second Main – Coxsackie Phase 2, CSX Transportation, Coxsackie, NY.** *Lead Bridge Engineer* for the design of two replacement bridges. ***Both bridges were constructed in phases to maintain one track in service at all times***. Bridge 1 is a 107.8' single span, ballasted deck plate girder spanning over Coxsackie Creek. The pile cap was supported on two 72" drilled shafts for each abutment. ***Extensive temporary shoring was required to maintain the existing bridge in service*** because the rear abutment was failing. Bridge 2 is a 187.5' long, 3-span bridge carrying CSX over Hannacrois Creek. The ballasted deck plate girder superstructure has spans of 45'-97.5'-45'. Cap and columns piers are supported on 78" or 84" drilled shafts. Wall abutments are supported on 9 5/8" micropiles. Bob lead the design effort on the 2 replacement bridges. Temporary shoring was critical on this bridge because the forward pier and abutment had settlement issues.
02/15 – 10/15	**Florence Division, Orangeburg Subdivision Bridge at MP Ak 360.7, CSX Transportation, Creston, SC.** *Bridge Review Engineer* for the replacement and rehabilitation of a 165' bridge over the Halfway Swamp Creek in Creston, SC. Superstructure design ***involved strengthening an existing 76' deck plate girder*** span and replacing 90' of timber trestle with new rolled beam spans. Substructure design involved replacing existing timber pile bents with new steel framed bents. Due to the environmental sensitivity of the stream, the proposed structure was designed to be constructed from the track, utilizing hi-rail cranes.
1/11 – 06/16	**I-75 Over US 6, WOO-75-10.61 Accelerated Bridge Replacements, ODOT, Bowling Green, OH.** *Senior bridge Designer.* For major bridge reconstruction project along I-75 in Wood County, Ohio which extends from Portage Road to Devil's Hole Road. A unique project element is the bridge replacement of WOO-75-12.94 which carries I-75 over US 6, known locally as Grand Army of the Republic Freeway. ***An innovative approach is being used for this 4-span bridge replacement***, termed ***Accelerated Bridge Construction (ABC)***, which will "slide" the Northbound and Southbound bridge replacement superstructures into final position over 2 distinct weekends. The new 200' long structures are 2-span, prestressed concrete I-beams supported on stub abutments on piling behind MSE walls and cap & column piers founded on piling.
02/12 – 09/15	**WOO-75-12.94 Third Lane Widening, ODOT, District 2, Ohio.** *Project Manager and Lead Bridge Engineer*. Bridge project that was part of the reconstruction and widening of approximately nine miles of I.R.75. The project includes interchange acceleration and deceleration improvements as well as mainline bridge rehabilitations and/or replacements. During the initial phases of the project Arcadis evaluated the U.S. 6 interchange for design deficiencies and provided revised geometrics. Another key feature of the project utilized by ODOT was to ***replace the I-75 over U.S. 6 mainline bridge utilizing accelerated bridge construction (ABC) techniques***. To provide the required vertical clearance, U.S. 6 was lowered. Duration of construction of the bridge was six months utilizing ABC instead of a typical two season project.The existing 4-span rolled steel beam bridge was replaced by a 2-span prestressed concrete beam structure. The substructure consisted of stub abutments behind MSE walls and a cap and column pier, ***all constructed underneath the existing bridge while maintaining traffic***. The 200' long superstructure was constructed adjacent to the existing bridge. In one weekend an existing bridge was demolished, a new superstructure was pulled into position and all ancillary work was completed. The process was repeated for the second bridge.

Firm employed by. ARCADIS				Meets MPR No. 3
Name	**Jose L. Rodriguez, PE**		Years of relevant experience with this employer	3
Title	Senior Roadway Engineer		Years of relevant experience with other employer(s)	24
Degree(s) / Years / Specialization		BS / 1992 / Civil Engineering, University of New Orleans		
Active registration number / state / expiration date		PE.0030492 / LA / Exp. 03/2027		
Year registered	2003	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities		**Roadway/Drainage Design**		

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Rodriguez has more than 26 years of experience with roles of progressive responsibility as a civil engineer performing **roadway design**, bridge design, project management, hydraulic analysis, utility coordination, construction supervision, **cost estimating**, and project implementation for various clients in the states of Louisiana, Texas, Georgia, and North Carolina. Worked in close relationship with the Louisiana Department of Transportation, City of New Orleans Department of Public Works, New Orleans Sewer and Water Board, Plaquemines Parish, Jefferson Parish, St. Bernard Parish, U.S. Army Corps of Engineers, New Orleans Regional Planning Commission. Experience includes a wide range of project applications including **Stage 0 feasibility and safety studies**, **safety design**, environmental assessments, and design projects. Extensive experience in Inroads, Autodesk Civil 3d, Leap Bridge for Concrete Bridge Design, and Excel Spread Sheets. Served on the American Concrete Institute (ACI) Louisiana Board, becoming president of the Louisiana Chapter in 2010.
02/07 – 10/09	**John James Audubon Bridge Approach (Design-Build [DB]), LADOTD, New Roads, LA.** *Roadway Designer.* Responsible for the ***geometric horizontal and vertical alignment for five approach bridges*** to the John James Audubon Cable Stay Bridge. The longest cable-stayed bridge in the Western Hemisphere consisting of 1,583' main span. Also in charge of the quality control for all bridge approaches and the design of all precast concrete girders for the project.
02/22 – 04/25	**I-10 Calcasieu River Bridge P3 (Calcasieu Parish, LA).** *Senior Roadway Engineer* for the I-10 Calcasieu Bridge Replacement P3 project to ***replace the existing I-10 bridge over the Calcasie River with a new bridge north of I-10.*** The project also includes the construction of ***several new bridge structures*** within the project limits, both inside and outside widening of I-10, improvements and modifications to existing interchanges, and improvements to other associated roadways within the project limits.
04/21- 04/22	**Lee Drive (Highland Road to Perkins) Final Design Study Report, MOVEBR Baton Rouge, LA**. *Senior Roadway Engineer. Designer,* Responsible for coordinating and developing concept drawings to evaluate the geometric feasibility of different roadway alternatives, proposed improvements, and anticipated right-of-way needs. Provided technical guidance to help identify green infrastructure opportunities along the project. Also assisted in the implementation of Complete Street regulations for the corridor. During the alternative's selection process, conducts cost estimates to evaluate and select the preferred alternative.
04/23 – 01/25	**LA 22 Tchefuncte River Bridge, LADOTD, St. Tammany Parish, LA.** *Lead Roadway Engineer*. Responsible for ***preliminary roadway and drainage design*** for a ***Stage 0 Feasibility Study*** to develop and evaluate feasible alternatives for the replacement of the LA 22 Tchefuncte River Bridge in Madisonville, LA. The bridge has a high frequency of opening due to marine traffic and low elevation above the river. Arcadis developed several bridge alternatives including fixed and moveable bridge options. Alternatives were evaluated with respect to ***construction cost***, ***ROW***, traffic and safety, and environmental. All

	study methods and results were documented in a ***Stage 0 Feasibility Report*** with ***Preliminary Scope and Budget Checklist*** and ***Environmental Checklist.***
01/08 – 05/08	**I-12 to Bush Corridor Study Phase III, LADOTD, St. Tammany Parish (STP), LA.** *Roadway Designer.* Responsible for ***evaluating environmental issues and developing design alternatives*** in accordance with the ***National Environmental Policy Act (NEPA)*** for transportation improvements.
05/12 – 12/15	**Earhart Boulevard Causeway Interchange, LADOTD, New Orleans, LA.** *Roadway Designer.* Responsible for the ***geometric design and roadway plan preparation*** for the Earhart Boulevard-Causeway Interchange. The Earhart Boulevard Causeway Interchange purpose was to assist in traffic congestion relief for the east-west flow in traffic for the New Orleans Metro Area. It consisted of the development roadway and bridge ramps for the creation of an elevated signal-controlled interchange. The estimated construction cost for this project was approximately fifty-nine million dollars. Responsible for the ***development of all horizontal and vertical alignments*** for this project as well as roadway plan preparation, developing all ***roadway cross sections,*** drainage design, utility conflict resolution and ***cost estimating*** for the project. Bentley InRoads was used for the development of the roadway plans for this project.
02/10 – 06/11	**I-10 from Veterans to Clearview, LADOTD, Metairie, LA.** *Roadway Designer.* Responsible for ***roadway plan preparation*** for widening 1.2 miles of I-10 from three lanes to five lanes in each direction. The project also included bridge work to accommodate the new roadway widening. Jose was also responsible for the alignment and design of concrete sound walls along the corridor. He helped implement an innovative two-sided concrete stamp process for the noise wall precast concrete panels.
07/09 – 07/15	**Peters Road Expansion, Phases I, II and III, LADOTD, Plaquemines, LA.** *Roadway Designer.* Responsible for the ***geometric design, plan preparation and wetland delineation*** of Peters Road Phases I, II and III. The projects consisted of a new roadway, elevated crossing over the Intracoastal Waterway, approach roadways in Jefferson and Plaquemines Parishes to tie Peters Road to Louisiana 23 near Barrier Road. The projects were prepared in coordination with Plaquemines, DOTD and the U.S. Army Corps of Engineers.
10/17 – 03/18	**Traffic Turn Lanes on Highway LA 3127, Yuhuang Chemical Inc., St. James, LA.** *Quality Control (QC).* Review for the ***design of two turn lanes*** into the Yuhuang Chemical Methanol plant in St. James Louisiana. During construction, Jose provided the owner, with construction design services for the duration of the construction phase.
12/15 – 01/16	**Magnolia Ridge Levee Project, City of New Orleans, St. Charles Parish, LA.** *Quality Control (QC).* QC review and ***plan preparation*** for the Magnolia Ridge Levee project for St. Charles Parish.
06/04 – 01/11	**Causeway Boulevard Interchange Improvements Phase I and II, LADOTD, Metairie, LA.** *Roadway Designer.* For the project, which consisted of widening Causeway Boulevard elevated structure at Veterans Boulevard and the construction of new at grade and elevated ramps to provide better accesses, ***improve safety and ease congestion at this heavily travel interchange.*** Responsible for evaluating existing girders, the ***design of new precast concrete girders*** and the ***roadway plan preparation*** for this project. Also, responsible for evaluating and design of new sewer and water lines for the project as well as coordinating the removal and replacement of all utilities affected by the new roadways or/and structure foundations.

Firm employed by. ARCADIS

Name	**Osama Shahawy, PE**	Years of relevant experience with this employer	4
Title	Principal Bridge Engineer	Years of relevant experience with other employer(s)	30
Degree(s) / Years / Specialization		MS / 1991 / Civil (Structures), Florida State University BS / 1983 / Civil Engineering	
Active registration number / state / expiration date		PE.0035652 / LA / Exp. 09/30/2025	
Year registered	2001	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Bridge Lead**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Shahawy has more than **34 years of structural bridge engineering experience** working on variety of different projects throughout Louisiana and the Southeast includes **Stage 0 Feasibility Studies**, NEPA studies, and design. He served as PM or TL on 100+ projects with extensive bridge plan, specification and estimate, rehabilitation and bridge replacement. His experience includes coordinating teams of engineers and other technical personnel on the preparation of bridge PS&E design/ management including on/off-system bridges in rural/urban areas with heavy utilities & complex TCP. Mr. Shahawy has a design background that includes strong construction capabilities–a benefit that ensures constructible technical solutions and more complete construction documents. Leveraging his decades of experience, he will check accuracy, verify compliance to review comments, and will ensure that agency and stakeholder comments and concerns are addressed.
10/20 – Ongoing	**I-10 CMAR, LADOTD, East Baton Rouge Parish, LA.** *Lead Bridge Engineer, Engineer of Record*. Responsible for Construction Management at Risk (CMAR) to improve Interstate 10 through widening and reconstruction of the mainline from 3 to 4 lanes in each direction, including ***bridge replacement and rehabilitation***, interchange and ramp modification, shoulder widening, and auxiliary lane(s) from LA 415 to Essen Lane on I-10 and I-12. Responsibilities include replacing Nairn Dr. bridge over I-10 with a signature type bridge and preparing conceptual bridge plans required for the Right-of-Way Corridor. Responsibility includes ***design and detail of the Nairn Dr. Bridge*** according to design criteria and LADOTD BDEM. Participate in meetings and work with the CMAR Contractor and LADOTD to develop preferred bridge concepts at completion.
10/22 – Ongoing	**Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Replacement (OSBR) Program, District 01, LADOTD, LA.** *Lead Bridge Design Engineer.* Arcadis prepared preliminary and final plans of six proposed bridges, which included plan and profile sheets, typical roadway sections and quantities, a general bridge plan, traffic detour and road closure details, and relevant signing plans, as well as channel cross-sections.
09/21 – 04/25	**Calton Road Overpass, Webb County, TX.** *Lead Bridge Designer.* Led final design of the Calton Road Overpass in Laredo, TX, spanning 866 feet over Santa Maria Avenue and Union Pacific Railroad tracks. Developed bridge and roadway plans, including a detailed cost estimate. The design features a 248-foot, two-span continuous steel I-girder unit on column bents, and includes Calton Road widening to maintain access.
02/23 - Ongoing	**Cross Bayou Bridge Replacement, LADOTD, Caddo Parish, LA.** *Bridge Design Engineer and Project Manager.* Conducted ***Stage 0 Feasibility study*** to develop and evaluate alternatives for the replacement of two existing bridges over Cross Bayou. Developed ***Stage 0 Documentation*** including ***Preliminary Scope and Budget*** and ***Environmental Checklists***.The next phase of the project will be conducted under the same contract and will include the development of construction plans.

02/22 – 04/25	**I-10 Calcasieu River Bridge P3 (Calcasieu Parish, LA).** *Bridge Project Manager* for the I-10 Calcasieu Bridge Replacement P3 project to ***replace the existing I-10 bridge over the Calcasie River with a new bridge north of I-10.*** The project also includes the construction of ***several new bridge structures*** within the project limits, both inside and outside widening of I-10, improvements and modifications to existing interchanges, and improvements to other associated roadways within the project limits.
04/12 – 05/13	**LA 1 over I-19 Bridge Rehabilitation, Rapides Parish, LA.** *Project Manager, Engineer of Record.* Provided professional inspection, rehabilitation design, and construction engineering services. The bridge is a 4 spans steel plate girder structure that has uneven settlement and rotation at the abutments which required rehabilitation to stabilize the movement and raise the bridge back to its original as built elevation. Responsibilities included directing team and over all task involves the ***preparation of geometric layout plan development***; ***bridge design and final plans***, specifications and estimates for LA 1 Bridge over I-49 according to LADOTD BDEM. Performed QA/QC, ***prepared construction cost estimate***, reviewed/revised plans based on LADOTD comments.
07/11 – 05/13	**MacArthur Drive Bridge Interchange, LADODT, Rapides Parish, LA.** *Bridge Design Engineer, Engineer of Record*. Led Phase 1 redesign and widening of the interchange, focusing on design changes for Ramps 7 and 8. Designed deck slabs for 18 spans with Trapezoidal and Bulb-T girders, bearing pads, Inverted-T caps, and special pier columns. Oversaw geometric and span layout modifications, and reviewed all plans for compliance with LADOTD standards and quality requirements.
08/20 – 07/21	**I-10 New Orleans to Slidell Hard Shoulder Design, LADOTD, New Orleans, LA.** *Bridge Design Engineer.* Conducting ***bridge design evaluation*** for the use of Active Transportation and Demand Management (ATDM) strategies on 1-10 in Orleans and St. Tammany Parishes. The project is to determine improvements of implementing shoulder lanes on Interstate 10 in New Orleans East area. Responsibilities include ***preliminary bridge design to determine construction cost*** for structure widening of EB & WB I-10 based on 4 scenarios utilizing existing shoulders on 1-10, as one of the scenarios. Developed ***Stage 0 Documentation*** including ***Preliminary Scope and Budget*** and ***Environmental Checklists***.
08/20 – 11/20	**Alphonse Forbes Bridge at Sandy Bayou Replacement, City of Baton Rouge, East Baton Rouge Parish, LA / 18-Br-Pt-0017.** *Bridge Design Engineer*. Responsible for the replacement of the Alphonse Forbes Road Bridge over Sandy Creek located in Central, Louisiana, in East Baton Rouge Parish. ***Reviewed final plan and calculations QC design analysis and final bridge structure plans*** for a 5 concrete slab span bridge. Provided review comments for final plans and estimated quantities according to LADOTD guidelines.
07/11 – 05/13	**Mississippi River Bridge at Vicksburg, Mississippi, LA.** *Project Manager, Engineer of Record*. Responsible for the four-lane continuous main steel-truss through-deck bridge covers a total length of 1,716 ft. and a width of 60 ft. The main truss consists of two symmetrical 640.5 ft. cantilever spans and one 435 ft. drop span. The approach spans consist of 101 prestressed concrete spans and reinforced concrete pier caps. Responsible for ***review of as-built plans and all rehab projects plans***; indexed and developed inspection forms; ***supervised and reviewed results from the 3D computer model***; model calibration; performed QA/QC according to LADOTD BDEM and assisted in developing the final report.
07/11 – 06/12	**I-10 over Calcasieu River - Lake Charles Bridge, LADOTD, Lake Charles, LA.** *Project Manager, Engineer of Record*. Responsible for bridge inspection that include four steel deck trusses as well as a cantilever steel through-truss for the main span portion of the bridge, covering a total length of 6,617 ft. with a width of 62.67 ft. Responsible for ***review of the as-built and rehab project plans*** and indexing; developed inspection forms; ***supervised and reviewed the results from the 3D computer model***.

Firm employed by. ARCADIS

Name	**David Fulks, PE**	Years of relevant experience with this employer	18
Title	Roadway Design Engineer	Years of relevant experience with other employer(s)	12
Degree(s) / Years / Specialization	MS / 2019 / Engineering Management, The George Washington University BS / 1997 / Civil Engineering, Portland State University		
Active registration number / state / expiration date	PE.030151 / LA / Exp. 09/2026		
Year registered	2002	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities	**Roadway/Drainage Design**		

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Fulks has more than **30 years of experience in the design of roadways and pedestrian facilities**, land developments, flood protection systems, and airports. His experience encompasses analysis and design of **geometric design** of highways, streets, sidewalks, restrictive intersections, roundabouts, and interchanges; site hydrology and hydraulics; and traffic impact analysis. His experience has been applied to a range of projects, from **Stage 0 feasibility and safety studies**, to design and construction plan development. His responsibilities have included preparing engineering designs, reports, plans, and specifications preparing and managing project schedules and cost estimates and providing construction administration. **Mr. Fulks meets Minimum Personnel Requirement Number 3.**
04/13 – 07/14	**US 11 Environmental Assessment, Bridge Replacement, and Roadway Improvements, LADOTD, St. Tammany Parish, LA.** *Lead Roadway Engineer.* ***Geometry and roadway design, line and grade study*** development, and ***cost estimates*** for the replacement of an historic railroad overpass bridge and upgrading an existing two-lane rural highway to a four-lane divided highway with access control. Early coordination with Norfolk Southern Railroad.
05/14 – 05/15	**Joe Sevario / Roddy Road Roundabouts, LADOTD, Ascension Parish, LA.** *Task Manager and Lead Roadway Engineer.* ***Geometric and roadway design*** and ***cost estimates*** for the replacement of ten existing stop-controlled intersections with single-lane roundabouts.
07/15 – 06/17	**US 190B at Jefferson Ave Roundabout, LADOTD, St. Tammany Parish, LA.** *Roadway Engineer.* ***Geometric and roadway design, preliminary plans preparation***, and ***cost estimate*** for replacing an existing four-way signalized intersection with a single-lane elliptical roundabout.
12/13 – 06/15	**LA 3235 Corridor Safety Feasibility Study, LADOTD, Lafourche Parish, LA.** *Lead Roadway Geometrics and Cost Engineer.* Designed ***geometric layout*** of safety improvements including ***access management, restrictive intersections***, and added turn lanes. Developed ***construction cost estimates*** for proposed improvements to assess ***feasibility*** of proposed alternatives.
11/14 – 10/15	**LA 44 and Loosemore Road Roundabout, LADOTD, Ascension Parish, LA.** *Deputy Project Manager and Lead Roadway Engineer.* ***Geometric and roadway design, preliminary subsurface utility investigation,*** and ***cost estimates*** for the replacement of an existing two-way stop-controlled intersection with either a single-lane roundabout or two single-lane roundabouts and right-in/right-out control at the existing intersection.
02/15 – 08/17	**US 71 Corridor Phase II, LADOTD, Rapides Parish, LA.** *Roadway Engineer*. Provided technical oversight for ***conceptual design*** drawing development as part of the preparation of a ***Stage 0 feasibility study*** for the purpose of enhancing mobility and safety on US 71 in Alexandria, LA. Completed ***Stage 0 documentation*** including ***Preliminary Scope and Budget and Environmental Checklists***.

09/09 – 03/12	**I-20 Garrett Road Connector Interchange Improvements, LADOTD, Ouachita Parish, LA.** *Lead Engineer.* ***Geometry and roadway design*** of the new KCS Railroad overpass and connector between Kansas Lane and Garrett Road, including interstate interchange modifications to include two-lane roundabouts at ramp intersections, and three two-lane roundabouts along the corridor outside of the interchange. ***Improvements to the pedestrian and bicycle facilities*** were included in accordance with the ***LADOTD Complete Streets Policy***.
01/14 – Ongoing	**Pete's Highway Interchange Alternative and Environmental Assessment, LADOTD, Livingston Parish, LA.** *Lead Roadway / Bridge Geometrics and Cost Engineer.* High-priority project completing an environmental assessment and traffic engineering services related to improving congestion and operations along Range Avenue in the vicinity of the I-12 interchange. Design alternatives included two split diamond interchange options with roundabout, partial clover leaves, and collector-distributor road components at both Range Avenue and the next existing, eastern overpass at Pete's Highway (LA 16) and a diverging diamond interchange alternative at Range Avenue. Developed ***roadway geometry, line and grade***, construction sequencing strategies, and ***construction cost estimate***.
08/11 – 09/13	**Chef Menteur Bridge and Approaches Replacement EA and Line and Grade Study, LADOTD, Orleans Parish, LA.** *Lead Roadway/Bridge Geometrics and Cost Engineer.* Responsible for preparing the proposed ***geometric configurations of a bridge replacement at Chef Menteur Pass.*** Investigated four alignments as well as both low-level moveable and high-level fixed span bridge configurations. Performed detailed ***geometric layouts*** of the mainline highway, bridge, and adjacent roadways to ***mitigate impacts to environmentally sensitive resources*** and local residential, commercial, and historical interests.
09/12 – 09/13	**US 165 Connector and Ouachita River Bridge EIS, LADOTD, Ouachita Parish, LA.** *Roadway Design Engineer.* Responsible for preparing ***roadway and bridge general plan designs, line and grade*** report development, and ***cost estimates*** for a new five-mile elevated highway through Chauvin Swamp north of Monroe, LA. An in-town corridor was also developed which entailed upgrading Louisville Avenue and Hudson Lane in Monroe, the Lea Joyner Bridge over the Ouachita River, and Stella Street in West Monroe to function as a one-way couplet. ***Early coordination with Delta Southern Railroad*** was included.
06/00 – 12/00	**Hesper and Helios Avenue Street Rehabilitation, Jefferson Parish Engineering Department, Harvey, LA.** *Roadway Engineer.* Completed inspections and rehabilitation recommendations for eight blocks of local streets. Rehabilitation required demolition and replacement of concrete road panels, milling and overlay of asphalt surfaces, and installation of drainage inlets and subsurface drainage, as well as replacement of damaged and under-performing subsurface drainage. Performed inspections, ***collaborated with Parish representatives and utility companies***, identified appropriate rehabilitation measures, and ***produced plans*** illustrating the rehabilitation recommendations.
02/09 – 4/10	**US 90 – WBV 73 Western Tie-In Crossing Lake Cataouatche Area, United States Army Corps of Engineers (USACE) – New Orleans District, Jefferson Parish & St. Charles Parish, LA.** *Deputy Project Manager and Lead Roadway / Drainage Engineer.* Development of ***preliminary and final design*** P&S for a 2,540-foot PPC girder / column bent bridge, highway approaches, and frontage roadways.

Firm employed by: ARCADIS

Name	**Gabriel Arias, PE**	Years of relevant experience with this employer	1
Title	Transportation Engineer	Years of relevant experience with other employer(s)	8
Degree(s) / Years / Specialization		BS / 2013 / Civil Engineering, Auburn University	
Active registration number / state / expiration date		PE. 0042599 / LA / Exp. 09/30/2025	
Year registered	2018	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Roadway/Drainage Design**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Arias has more than eight years' experience performing complex geometric design on roadway including horizontal and vertical (H&V) alignment, hydraulic design cross drain pipes (CDP's) and open ditches, turn lane design, striping/signage, structural design analysis and QC, traffic management plans, and roadway plan production. As a roadway design engineer, Gabriel has direct experience utilizing DOTD's Roadway Design Procedures and Details Manual.
06/16 – 02/17	**LA 435 to LA 40/LA 41, LADOTD, St. Tammany Parish, LA.** *Project Engineer*. The project calls for the construction of a new four-lane highway connecting I-12 to Bush, Louisiana, in St. Tammany Parish. The new roadway is approximately 19.8 miles in length and begins at LA 434, north of the existing LA 434 interchange with I-12, and traverses in a northeasterly direction until encountering an abandoned rail corridor. It then follows the rail corridor terminating at the LA 21/LA 41 intersections near Bush, Louisiana. Assisted with roadway geometric design including H&V alignment, hydraulic design for storm drains, CDP's and open ditches, structural design analysis and QC, Traffic management plans and ***roadway plan production*** for the new 5.5 mile 4-lane RA-3 roadway from LA 435 to Bush, LA.
07/13 – 06/16	**Bayou Mercier Road/Berard Canal Bayou, LADOTD, St. Martin Parish, LA.** *Project Engineer*. Performed topographic field surveying and assisted with bridge design, hydraulic analysis and roadway design for the replacement of the existing off-system bridge timber structure with a quad-beam concrete structure.
07/13 – 02/17	**Derrick Road Bridge, LADOTD, Iberville Parish, LA.** *Project Engineer*. Performed topographic field surveying and assisted with bridge design, ***hydraulic analysis and roadway design for the replacement of the existing off-system bridge timber structure*** with a slab span, concrete structure.
07/13 – 02/17	**Jude & Placide Road Bridges, LADOTD, Vermilion Parish, LA.** *Project Engineer*. Performed topographic field surveying and assisted with bridge design, hydraulic analysis and roadway design for the replacement of the existing off-system bridges timber structures with slab span, concrete structures.
06/18 – 10/19	**Mid-Barataria Diversion Design, Plaquemines Parish, LA.** *Project Engineer*. Planning, engineering and design services for the creation of the Mid-Barataria sediment diversion basin to strategically reintroduce sediment and freshwater inputs into the Barataria Basin. Assisted with ***detour roadway alignment creation/selection***, TTC planning, and plan preparation.
07/13 – 10/16	**City of Thibodaux Overlay Projects, LADOTD, Lafourche Parish, LA.** *Project Engineer*. Project required chip sealing, joint & crack sealing, resurfacing and complete pavement replacement for four separate locations in the city of Thibodaux, LA. The

	goal was to prolong the life of the existing pavements by preventing future deterioration and/or rehabilitating the existing pavements. Assisted with ***roadway geometric design*** including horizontal alignments, selection of treatment type for pavements, hydraulic design for storm drains, CDP's and open ditches and roadway plan production.
09/13 – 02/17	**Pecan Island Road Bridge Over The Chenal, LADOTD, Pointe Coupee Parish, LA.** *Project Engineer*. Performed topographic field surveying and assisted with bridge design, hydraulic analysis and roadway design for the replacement of the existing off-system bridge timber structure with a customized slab span, concrete structure.
07/13 – 02/17	**Gracie Lane Bridge, LADOTD, Iberville Parish, LA.** *Project Engineer*. Performed topographic field surveying and assisted with bridge design, hydraulic analysis and ***roadway design*** for the replacement of the existing off-system bridge timber structure with a slab span, concrete structure.
04/14 – 02/17	**Lajaunie Rd/Lateral 1 Bayou St. LADOTD, Clair, Lafayette Parish, LA.** *Project Engineer*. Performed topographic field surveying and assisted with bridge design, hydraulic analysis and ***roadway design for the replacement*** of the existing off-system bridge timber structure with a slab span, concrete structure.
11/15 – 02/17	**Babin Rd./Bayou Narcisse, LADOTD, Ascension Parish, LA.** *Project Engineer*. Performed topographic field surveying and assisted with bridge design, hydraulic analysis and roadway design for the replacement of the existing off-system bridge timber structure with a slab span, concrete structure.
09/13 – 02/17	**West 15th Avenue/Mile Branch, City of Covington, St. Tammany Parish, LA.** *Project Engineer*. Performed topographic field surveying and assisted with bridge design, hydraulic analysis, and roadway design for the replacement of the existing bridge timber structure with a customized slab span, concrete structure. Included an integral pedestrian/bicycle path and custom barrier to separate pedestrians and vehicles.
02/18 – 04/18	**US 377 Cresson Relief Route, TXDOT, TX.** *Project Engineer*. TXDOT will construct a three-mile relief route west of the city of Cresson. The relief route will be a new ***four-lane divided highway on US 377*** beginning one mile south of the intersection of US 377 and SH 171 and ending one mile north of the same intersection. Assisted with plan creation including H&V alignment review, TTC plans, construction quantity estimation and roadway plan production for the realigned roadway.
06/17 –10/17	**Hwy 270 Widening Connecting Arkansas Program (CAP), CA0607, Garland County, AR.** *Project Engineer*. Contracted by AHTD, as part of their Connecting Arkansas Program (CAP), ***to assist with the design of widening approximately three miles of Hwy 270 in Garland County***. The proposed roadway is 4 lanes with a painted median from Hwy 270 to Black Snake Road, then 5 lanes curb & gutter from Black Snake Road to Hwy 227. Responsibilities include the drainage design and plan production, wetland delineation and maintenance of traffic plans. Tasks include preliminary site visits, developing hydraulic and hydrologic models for the pipes, submittal of Hydraulic Report, drainage ditch design, ***maintenance of traffic*** plan submittals and wetlands report.

Firm employed by: ARCADIS			
Name	**Garret Keller, PE**	Years of relevant experience with this employer	11
Title	Design Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		MS / 2011 / Transportation Engineering; Louisiana State University BS / 2003 / Civil Engineering; Louisiana State University	
Active registration number / state / expiration date		PE.040977 / LA / Exp. 03/31/2027	
Year registered	2012	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Roadway/Drainage Design**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Keller is a civil design engineer who has spent his entire tenured career at Arcadis. He has been involved with several Louisiana Department of Transportation and Development (LADOTD) projects and has **direct experience utilizing DOTD's Roadway Design Procedures and Details Manual.** His responsibilities have included roadway and structural detailing and design, civil design, geometrics, and cost estimating. He also oversees implementation of CAD **systems and standards for Louisiana** including MicroStation, InRoads, and CAD conform for LADOTD work.
07/15 – 06/17	**US 190B at Jefferson Avenue Roundabout Design, LADOTD, St. Tammany Parish, LA.** *Roadway Engineer*: Responsible for geometric and roadway design for replacing an existing ***four-lane signalized intersection*** with a single-lane roundabout. The project also included a Context Sensitive Solutions study to optimize benefit to the adjacent real estate and community needs.
02/19 – Ongoing	**NDRC Ohio Creek Watershed Project, City of Norfolk, VA.** *Lead Civil Engineer:* Project consists of earthen berms, reinforced concrete floodwalls, and internal stormwater pump stations, as well as, upgraded existing transportation infrastructure to provide better mobility and safety for pedestrians and bicyclists. These features include elevated roadways, new shared use paths, upgraded culverts with stormwater closure structures, and various green infrastructure treatments.
09/12 – 04/14	**US 165 Connector and Ouachita River Bridge EIS, LADOTD, Ouachita Parish, LA.** *Roadway Designer:* Responsible for roadway design support on a project that provides needed transportation system linkage in the north Monroe region.
11/12 – 04/13	**LA 594 (Millhaven Rd.) Alternatives, I-20 Economic Development Corporation, Ouachita Parish, LA.** *Primary Designer:* Roadway intersection and roundabout improvement alternatives for a ***LADOTD Stage 0 study***. Two roundabouts were evaluated in compliance with LADOTD EDSM V.1.1.5 (Analysis) and EDSM V.1.1.6 (Design).
08/11 – 09/13	**Chef Menteur Bridge and Approaches EA, LADOTD, Orleans Parish, LA.** *Roadway Designer:* Responsible for geometry and ***roadway design for a high-priority bridge replacement.*** Key issues included minimizing impacts to Bayou Sauvage National Wildlife Refuge, Fort McComb, the existing bridge that is eligible for the NRHP, and compliance with Complete Streets Policy.
02/09 – 02/13	**US 90 WBV 73- Western Tie-In Crossing Lake Cataouatche Area (Bridge/Roadway Approach/T-walls), USACE - New Orleans District, Jefferson & St. Charles Parishes, LA.** ***Project Designer:*** Preparation of Plans and Specifications for new floodwall and highway bridge in St. Charles Parish. Design of floodwalls, four-lane highway bridge, and detour roads to maintain traffic traveling on US Highway 90. The project involved ***improvement layout*** and quantity calculations in support of cost estimates.

Firm employed by: ARCADIS

Name	**Craig Raymond, PE**	Years of relevant experience with this employer	8
Title	Roadway Design Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		BS / 2013 / Civil Engineering, Louisiana State University	
Active registration number / state / expiration date		PE.0042715 / LA / Exp. 03/2026	
Year registered	2018	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Roadway/Drainage Design**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Raymond's experience encompasses permitting application including sketches/drawings, geometric design of levees, highways, streets, roundabouts, and aprons. He was worked on a wide range of roadway and civil design projects including geometric design, line and grade, and typical sections to support LADOTD Stage 0 Feasibility Studies. Responsibilities have included preparing engineering designs, plans, and specifications. preparing cost estimates. coordinating with permitting agencies. and project oversight.
04/13 – 07/14	**US 11 Environmental Assessment, Bridge Replacement, and Roadway Improvements, LADOTD, St. Tammany Parish, LA.** *Roadway Engineer*. ***Environmental Assessment for replacement of the US-11 Bridge***, which includes widening of US-11 from two lanes to four lanes from US-190 north to 1-12. Responsibilities include providing alternative development, geometric and roadway design, line and grade, and plan preparation for two alternatives.
12/13 – 06/15	**LA 3235 Stage 0 Safety Feasibility Study, LADOTD, Lafourche Parish, LA.** *Roadway Engineer*. Responsible for collection of ***roadway information and road design*** to preserve and enhance safety/mobility of the corridor. The project includes improvement considerations such as median opening channelization, turn lane storage, median closure, among others.
05/14 – 05/15	**Stage 0 Feasibility Study - Joe Sevario / Roddy Road Roundabouts, LADOTD, Ascension Parish, LA.** *Roadway Engineer*. ***Geometric and roadway design*** and cost estimates for the replacement of ten existing stop-controlled intersections with single-lane roundabouts.
11/14 – 11/15	**LA-44 and Loosemore Road Roundabout Feasibility Study, LADOTD, Ascension Parish, LA.** *Roadway Engineer*. Responsible for roadway design for the improvement of existing roadway infrastructure at the intersection of LA-44 and Loosemoore Road. The project includes design for incorporating modern roundabouts to the interchanges ***to enhance mobility and safety***, collection of data from all existing utilities and cost estimate.
01/14 – 12/14	**Pete's Highway Interchange Alternative and Environmental Assessment, LADOTD, Livingston Parish, LA.** *Roadway Engineer*for the I-12/South Range Avenue interchange improvements. Provided alternative development, typical sections, line and grade, and ***plans detailing right-of-way*** and utilities.
11/16 – 08/19	**LA 88 Roundabouts Prelim Plans, LADOTD, Iberia Parish, LA.** ***Roadway Engineer*** developing plans for two single-lane roundabouts at US 90/LA 88 ramp terminals, including service road modifications to J-Turns and new U-Turn locations.
07/15 – 06/17	**US 190B at Jefferson Avenue Roundabout Design, LADOTD, St. Tammany Parish, LA.** *Roadway Engineer.* Responsible for ***completing preliminary roadway design plans*** based on comments from the client. This involved the development of MicroStation files such typical pavement section and details, plan and profile sheets, and construction sequencing sheets.

Firm employed by. ARCADIS

Name	**Ming-Hung Teng, PE**	Years of relevant experience with this employer	2+
Title	Principal Bridge Engineer	Years of relevant experience with other employer(s)	19
Degree(s) / Years / Specialization		PhD / 2001 / Structural Engineering, Purdue University MS / 1993 / Structural Engineering, National Central University, Chung-Li, Taiwan, BS / 1991 / Civil Engineering, National Central University, Chung-Li, Taiwan	
Active registration number / state / expiration date		75274 / FL / Exp. 02/ 28/2028	
Year registered	2018	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Bridge Design**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Teng has over 20 years of experience in design of steel and concrete bridges of different levels of complexity, seismic evaluation, bridge load rating (AASHTOWare BrR/VIRTIS), bridge inspections/report preparation, retaining walls, sign structures (Mast Arm & Strain pole), and TRC member service. He previously served as in-house structures engineer for the Florida Department of Transportation, District 7 in which he designed structures and reviewed structural plans submitted by engineering consultants. **While an employee of FDOT, Ming served in a variety of roles including: Project Manager for US41 over CSX bridge (250' Steel and 150' Concrete) and Technical Review Committee Member for I-275 Operational Improvement (Design-Build) and Districtwide Miscellaneous Designs totaling $5 million. He served as Engineer of Record for FDOT 4th Street N over Big Island Gap (Superstructure) and Structure Engineer of Record - US 52 Realignment as well as other miscellaneous projects involving drilled shafts, mast arm, strain poles etc.)**
05/23 – Ongoing	**I-10 Calcasieu River Bridge P3 (Calcasieu Parish, LA).** *Senior QC Reviewer.* The I-10 Calcasieu is one of the first Public-Private-Partnership projects in Louisiana and entails the replacement of several bridges, including the main structure crossing over the Calcasieu River. The project is divided into three segments. Arcadis is leading the design of segment 1. Segment 1 includes the replacement of an access ramp; the WB I-210 Ramp over the I-10. The bridge is a ***six-span bridge*** that consists of two units, each unit is a three-span continuous curved steel plate girder bridge, and the substructure consists of concrete hammer-head piers on concrete spread footing on precast concrete piles.
06/09 – 12/09	**Russell Ironton Bridges, Ohio Department of Transportation, Ironton, OH.** *Lead Structural Engineer* responsible for three hammerhead piers substructure design. Work includes preparation of pre-final substructure design calculations and drawings.
05/15 – 08/16	**Bridge Load Ratings, Florida Department of Transportation, District 4, Districtwide, FL.** *Structural Engineer* responsible for ***load rating analysis*** as well as QC other engineers' work. MDX is used for steel bridges and CONSPAN is used for prestressed bridges.
05/15 – 08/16	**Brightline Rail Infrastructure and Rail Viaduct, All Aboard Florida, Miami, FL.** *Structural Engineer* for the inclined substructure design. Responsible for building structure models to design the footings, columns, cap beams and post-tensioning tie beams. Work also included shop drawings review and response.
04/14 – 04/15	**151st Street Pedestrian Bridge at Fort Washington Park, New York State Department of Transportation, New York City, NY.** *Structural Engineer* for the pedestrian bridge over the 151st Street. This pedestrian bridge is a 258-ft long tied steel arch

	structure. ***Responsible for building structure models*** to analyze the fundamental frequency, also check all component members and details. Work also included the design of the abutments, soldier piles, tie-backs as well as plan productions.
05/13 – 04/14	**Mount Hope Bridge, Rhode Island Turnpike and Bridge Authority, Bristol, RI.** *Lead Structural Engineer* responsible for developing 3D bridge model for seismic analysis. The type of bridge is multi continuous/simple steel floor beam stringer system. The STAAD Pro was used for a 3D computer model for all the approach spans (North and South) of this bridge.
05/13 – 04/14	**Scott Road Bridge over I-84, Connecticut Department of Transportation, Waterbury, CT**. *Lead Structural Engineer* responsible for the ***superstructures (plate girders)*** and substructures design (abutments and wall piers) of a two-span steel bridge for the replacement and widening of Scott Road over I-84 eastbound and westbound. Work also includes plan productions and QC/QA.
12/11 – 06/12	**Black Road over Du Page River, Illinois Department of Transportation, Joliet, IL.** *Structural Engineer* for the ***preparation of plans and specifications.*** This project consisted of the rehabilitation of four-span steel bridges. Work included a redecking, installation of shear connectors on existing WF beams, conversion of pile bent abutments to semi-integral type, retrofit of cover plates, and bearing replacement at abutments and piers.
01/12 – 05/13	**I-90 over Kishwaukee River, Illinois State Toll Highway Authority, Winnebao County, IL.** *Structural Engineer* responsible for the substructures design (cofferdam, wall piers, MSP footing designs) of a five-span steel integral bridge (549'-0" total span length, longest integral span length in the State), and QC/QA for superstructure designs and plan productions.
01/12 – 05/13	**I-70 over ILL Route 121, Illinois Department of Transportation, IL.** *Structural Engineer* responsible for checking of the ***rehabilitation and widening of the pre-final designs/plans of a three-span steel bridge.*** Work includes jacking and raising existing beams and then installing new abutment bearings and steel extensions.
12/09 – 11/10	**I-465 over 71st Street Bridge Replacement, Indian Department of Transportation, Indianapolis, IN.** *Lead Structural Engineer* responsible for the replacement of single span prestressed bulb-tee twin bridge project. Work includes preparation of all structural designs such as beams, deck, end bents and noise barrier and final plans.
05/13 – 04/14	**Bridge Load Ratings, Virginia Department of Transportation, Statewide, VA.** *Structural Engineer* responsible for load rating analysis as well as QC other junior engineers' work. ***AASHTOWare BrR (VIRTIS) is used for straight girder bridges*** and DESCUS is used for kinked and curved bridges.
02/02 –06/03	**I-80 (MLK) Design-Build Project, Indiana Tollway, IN.** *Structures Engineer* responsible for the special design of the design-build project***. In order to eliminate one beam line and use the existing piers, the special design was adopted (Reference: NCHRP Report 517).*** The design did not count the beam weight dead load (non-composite) by using the existing piers as temporary supports. Work includes setting up another model/input by using the LEAP CONSPAN and plan productions.

Firm employed by. ARCADIS

Name	**Pooja Rao Madku, PE**	Years of relevant experience with this employer	1
Title	Structural Transit Engineer	Years of relevant experience with other employer(s)	8

Degree(s) / Years / Specialization			MS / 2015 / Civil Engineering BTech /2012 / Civil Engineering
Active registration number / state / expiration date			PE. 24473 / DE / Exp. 06/30/2026
Year registered	2021	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities			**Bridge Design**

Experience dates	Experience and qualifications relevant to the proposed contract
	Ms. Madku is the Structural Transit Engineer for the Arcadis office in East Windsor. Pooja's experience includes extensive design of new structures, concept development, the repair and rehabilitation of existing bridges, retaining walls, load rating of new and existing bridges, and construction support services including but not limited to shop drawing reviews and response to contractor's request for information (RFI), quality assurance and quality control of design and drawings. Ms. Madku has participated in the design for major rehabilitation projects with NJDOT, NJTA, NJT, DRJTBC, PANYNJ, and other local agencies. She is experienced in using SAP 2000, STAADPRO, LARS, AASHTOWare, MathCAD, AutoCAD and MicroStation, among other software applications. She applies sound structural knowledge to perform the analysis and design of various highway and railroad bridges, including steel, reinforced concrete, and prestressed concrete; willingness to work collaboratively with different groups inside the organizational team including clients, other disciplines' engineers, and project managers within the project organization.
02/22 – 04/25	**I-10 Calcasieu River Bridge P3, LADOTD, Calcasieu Parish, LA**. *Structural Engineer* for the I-10 Calcasieu Bridge Replacement P3 project to ***replace the existing I-10 bridge over the Calcasieu River with a new bridge north of I-10***. The project also includes the construction of ***several new bridge structures*** within the project limits, both inside and outside widening of I-10, improvements and modifications to existing interchanges, and improvements to other associated roadways within the project limits.
06/17 – 06/21	**NYCEDC, Hudson Park Blvd. and Streetscape Improvements, Phase 2, Block 4 Between W36th and W37th Street, NY** *Structural Engineer.* Responsible for the design of the proposed bridge carrying Hudson Boulevard West over the existing Amtrak's track between W36th and W37th Street Bridges from Schematic, Preliminary to Final Design. The proposed bridge is a 2-span bridge with a total length of 143' and a width of 50'. ***The superstructure consists of one major structural steel girder*** with a series of steel stringers with concrete deck on top. The substructure consists of a 190' long abutment, two piers, and two 45' long retaining walls. The height of abutment wall is about 30' which will provide an ***adequate under-clearance for the Amtrak train below the bridge***. Provided support in the development of contract drawings and addressing comments from various disciplines and agencies at different stages of the project. Provided specifications and performed quality assurance and quality control of design and drawings.
08/15 – 07/22	**DRJTBC, Scudder Falls Bridge Replacement, NJ/PA.** *Structural Engineer*. The project tasks consisted of Preliminary and Final Design of two curved girder ramp bridges, 12,000 linear feet of noise walls, 3,000' of retaining walls and a 1,625' ADA-Compliant ramp and bridge from the mainline bridge to the tow path along the Delaware and Raritan Canal in New Jersey. Various concepts for this ramp were investigated including a constant slope ramp at 5% grade and an 8% sloped ramp with 5

	feet horizontal landings at 30 feet intervals as required to achieve the ADA compliance. Final design of this ramp with the recommended alternative (5% constant grade) was approved. Primarily responsible to quantify engineer's estimate for different structures. Assisted in design and development of plans and elevations for retaining walls. Involved in design and estimate calculations for retaining walls. Assured compliance with codes and reviewed the shop drawings. Involved in construction support services including but not limited to shop drawing reviews and response to contractor's request for information (RFI), quality assurance and quality control of design and drawings.
03/16 – 04/23	**NJ Transit, County Yard Improvement Program, 6-Mile Run Railway Bridge, NJT Contract No 13-041, NJ.** *Structural Engineer***.** Project intends improvement of County Yard by addition of Service & Inspection Facility and tracks, design of 200 ft long bridge at Six-mile Run Creek and 5 retaining walls. Responsible to develop structural plans and design of retaining walls. Prepared reports for the types of retaining walls that can be utilized. Responsible for design calculations for plate girders, floor beams and their connections, and load calculations for 6-Mile Run Railway Bridge in compliance with AREMA and NJ Transit manuals and guidelines.
05/15 – 03/21	**NJDOT, Pulaski Skyway Rehabilitation, Contract #5 Rehabilitation of Broadway and Kearny Ramps, Essex/Hudson County, NJ.** *Structural Engineer***.** Responsible for evaluation, seismic analysis and load rating of bridge members. Responsibilities include ***design of steel and substructure repairs and design of new deck***. Work is part of NJDOT's Pulaski Skyway rehabilitation capital program which includes re-decking and steel and substructure repairs of the entire viaduct carrying US 1/9 traffic between Newark and Jersey City.
04/15 – 08/21	**PANYNJ, Raising the Roadway of the Bayonne Bridge, Hudson County, NJ.** *Structural Engineer***.** Primarily involved in construction support services including but not limited to shop drawing reviews and response to contractor's request for information (RFI), quality assurance and quality control of design and drawings, on this project to increase the navigational clearance from ***151' to 215' above mean high water utilizing the existing arch superstructure***. The New York and New Jersey approach substructures were replaced to support the new approach superstructures. The pedestrian access includes preliminary and final design of the sidewalk with an access hatch for maintenance, railings and anti-climbing fence.
09/19 – 04/23	**NJDOT, River Road (CR 622) Bridge over NJ Route I-287, NJ.** *Senior Structural Engineer.* Responsible for the preparation of supplementary specifications (Special Provisions) as per NJDOT Standard Specifications and providing bid support services for the final design of this ***four-span superstructure replacement and substructure rehabilitation project***. The bridge spans are about 27'-3", 90'-6", 90'-6" and 27'-3", a total span length of 235.5' and an out-to-out deck width of 72.75'. The existing substructure with two abutments and three piers will be rehabilitated to achieve a Condition Rating of 7 and a 45-year service life. Also responsible for assisting in development of structural plans, and preparation and review of Engineer's cost estimate.

Firm employed by. ARCADIS

Name	**Joseph Belmonte, PE**	Years of relevant experience with this employer	1
Title	Structural Engineer	Years of relevant experience with other employer(s)	5

Degree(s) / Years / Specialization			MS / 2020 / Civil Engineering BS / 2018 / Civil Engineering
Active registration number / state / expiration date			24GE05867100 / NJ / Exp. 4/30/2026
Year registered	2022	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			**Bridge Design**

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Belmonte is a Structural Engineer for Arcadis in the Sewickley, PA office who has experience with rail and catenary structures. He has over 4 years of experience in the design and analysis of steel and concrete structures, bridge modeling and design, and catenary structure design. Joseph is proficient with several software platforms, such as STAAD, RISA 3D, and Microstation.
02/22 – 04/25	**I-10 Calcasieu River Bridge P3, LADOTD, Calcasieu Parish, LA**. *Structural Engineer* for the I-10 Calcasieu Bridge Replacement P3 project to ***replace the existing I-10 bridge over the Calcasieu River with a new bridge north of I-10***. The project also includes the construction of ***several new bridge structures*** within the project limits, both inside and outside widening of I-10, improvements and modifications to existing interchanges, and improvements to other associated roadways within the project limits.
04/22 – 07/23	**I-35E Widening, Texas Department of Transportation (TxDOT), Dallas, TX.** *Structural Engineer* for the 6.39-mile I-35E Phase 2 reconstruction and widening. Designed connections between TxDOT trusses and non-standard concrete columns with a focus on fatigue sensitivity and anchorage. Also contributed to column, drilled shaft, and connection detailing.
01/21 – 11/21	**Atlantic City Expressway AET Updates, South Jersey Transportation Authority, Atlantic City NJ.** *Structural Engineer* responsible for updating structural designs for cashless tolling, ensuring compliance with 2022 AASHTO LRFD standards. Solely designed members and connections—including welded HSS trusses or single and double gantries spanning 61 to 150 feet.
12/21 – 05/22	**Connecticut River Moveable Bridge Replacement, Amtrak, Old Lyme, CT.** *Structural Engineer.* The moveable bridge replacement project involved the replacement of a lift bridge along Amtrak's Northeast Corridor line. Modeled and checked the design of approximately half of the catenary support structures in the project area. Performed the design and modeling of two truss structures that carry significant dead-end loads of various wire types on each end of the replaced bridge.
10/19 – 12/20	**Hudson Bergen Light Rail Extension, New Jersey Transit, Jersey City, NJ.** *Structural Engineer.* The Hudson-Bergen Light Rail (HBLR) Extension is an extension of the HBLR from its current terminal station at West Side Avenue to a new station located at the Bayfront Development. The extension begins in a through-girder configuration but quickly changes to a deck girder configuration for the rest of the bridge spans. ***Responsible for the design, modeling, and detailing of the deck*** along the length of the entire viaduct extension. Worked on the design of the plate girders, diaphragms, pier caps, and piers located in the Bayfront Station Viaduct area of the project. Used STAAD.Pro software to analyze the bridge components.

Firm employed by. ARCADIS

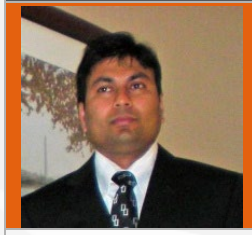
Name	**Badre Enam, PhD, PE**	Years of relevant experience with this employer	18
Title	Bridge Engineer	Years of relevant experience with other employer(s)	7
Degree(s) / Years / Specialization		PhD / 2008 / Structural Engineering, Florida State University MS / 2001 / Structural Engineering, Bangladesh University of Engineering & Technology BS / 1998 / Civil Engineering, Bangladesh University of Engineering & Technology	
Active registration number / state / expiration date		PE.037647 / LA / Exp. 09/30/2025	
Year registered	2013	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Bridge Design**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Dr. Enam has more than 21 years of experience as a Structural Engineer. His professional design experience includes (i) structural analysis and design of steel and concrete structures (using STAAD Pro, Sap 2000, RISA 3D etc.), (ii) deep foundation design using pile and drilled shaft (iii) Finite Element Analysis (using GTStrudl, ANSYS), (iv) concrete bridges as per Load and Resistance Factor Design (LRFD) specifications using pre-stressed box, bulb tees and American Association of State Highway and Transportation Officials (AASHTO) girders, (v) railroad bridge, (vi) steel plate girder bridges (LRFD) including moveable spans, (vii) dynamic effects from ship/barge impact on bridge piers (viii) hydraulic structures such as Sector gate, Vertical Lift Gate, T-wall, (ix) residential & commercial buildings (x) stability analysis of dams for seismic loading etc. His responsibilities have included structural design, FE analysis, P&S preparation, bid document preparation, shop drawing review, cost estimation, QA/QC etc.
04/13 – 04/14	**Louisiana Department of Transportation and Development (LADOTD), US 11 Norfolk Southern Railroad Overpass Replacement, St. Tammany Parish, LA.** *Lead Bridge Engineer* for replacement and widening of ***the US 11 roadway overpass of the Norfolk Southern Railroad***. Project included evaluating partial and full access intersection options and bridge alignment and type alternatives for the heavily skewed and long steel span bridge in this urban area of Slidell, Louisiana. A key feature of the project was preliminary design of a 380-ft long steel plate girder bridge span on an S curve over the Norfolk Southern right-of-way. ***Performed cost estimation*** and construction sequencing to minimize traffic delay during construction.
08/19 – Ongoing	**East Baton Rouge City-Parish, Alphonse Forbes Road at Sandy Bayou Bridge Replacement, Watson, LA.** *Bridge Design.* The Alphonse Forbes Road bridge was closed and Arcadis was selected by the city-Parish to complete a design study, topographic survey, and preliminary and final designs. The engineering responsibilities include the development of General Plans, foundation layouts, super-elevation diagrams in addition to structural design, detailing and load ratings of various bridge components such as: slab spans, bent caps, approach slabs, etc.
10/15 – 04/18	**LADOTD Off-System Highway Bridge Replacement Program, North Bayou Black Drive / Hanson Canal Bridge, Terrebonne Parish, LA.** *Designer of Record and Project Manager* responsible for providing all necessary engineering and related services required for developing plans for ***the replacement of an off-system highway bridge***. Detailed designed effort included filed surveying, right of way adjustment, crash barrier selection, hydraulic analysis, preliminary plan preparation and quantity estimation.

06/16 – Ongoing	**LADOTD, US 90 Business Signing Upgrade, Jefferson & Orleans Parishes, LA.** *Senior Structural Engineer* responsible for designing the Standard overhead and roadside signing structures following ***LADOTD and AASHTO design standards*** for the US 90 Business corridor for a length of approximately 5 miles. Investigated the as-built plans for the types, sizes and clearances of existing bridge girders, barrier, parapets, and deck overhangs to specify the sign-support attachments. Responsibility also included design of steel structures, structural quantities estimation and preparation of structural drawings.
01/12 – 08/14	**United States Army Corps of Engineers (USACE) – Memphis District, USACE IDIQ, LPV 145 Bayou Bienvenue Swing Span Bridge, St. Bernard Parish, LA.** *Bridge Designer of Record* performed P&S level structural design of a ***135-foot steel swing span*** bridge as per AASHTO LRFD specification and concrete approach slab spans (LADOTD standards) founded on pile bents. Responsible for LRFD based design of substructure items and foundation of the same bridge along with quantity takeoff.
01/14 – Ongoing	**LADOTD, Pete's Highway, I-12 Interchange EA, IMR and Alternatives, Livingston Parish, LA.** *Bridge Engineer* design alternatives included two split diamond interchange options with roundabout, partial clover leaves, and collector-distributor road components at both Range Avenue and the next existing, eastern overpass at Pete's Highway (LA 16); and a diverging diamond interchange alternative at Range Avenue. Performed preliminary ***design of a bridge spanning over I-12***, which featured ***LADOTD LG girders***. Worked on construction sequencing to widen Range Ave. under the I-12 overpass that introduced an additional lane by excavating and retaining the existing embankments and providing added vertical clearance under the bridge.
02/09 – 12/09	**USACE, US 90 – WBV 73 Western Tie-In Crossing Lake Cataouatche Area, Jefferson Parish and St. Charles Parish, LA.** *Project Structural Engineer* performed QC of design calculations and final construction plans for P&S level design of a ***2,540-foot PPC girder/pile bent bridge and roadway approaches following AASHTO specifications for coastal regions.***

Firm employed by. ARCADIS

Name	**Sharear Kabir, PE**	Years of relevant experience with this employer	5
Title	Structural Engineer	Years of relevant experience with other employer(s)	8
Degree(s) / Years / Specialization		MS / 2008 / Civil Engineering, Louisiana State University BS / 2000 / Civil Engineering / Khulna University of Engineering and Technology	
Active registration number / state / expiration date		PE.37169 / LA / Exp. 09/30/2026	
Year registered	2012	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		**Bridge Design**	

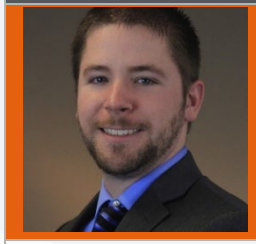
Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Kabir is experienced in bridge design and analysis for LADOTD to construction management and field supervision for private industries. He possesses good understanding of Louisiana Department of Transportation and Development (LADOTD), American Association of State Highway and Transportation Officials (AASHTO), American Society of Civil Engineers, American Conference Institute, and American Institute of Steel Construction design standards and has a demonstrated proficiency in bridge design and load rating, structural design, calculation, and documentation.
07/16 – 04/18	**North Bayou Black Drive Bridge over Hanson Canal, LADOTD, Terrebonne Parish, LA.** *Project Structural Engineer*. Completed structural design and prepared CAD drawings for a 28 ft wide and 80 ft long slab span bridge to replace the structurally deficient North Bayou Black Drive Bridge under the Off-System Bridge Replacement program of LADOTD.
04/14 – 07/16	**LA 63 Pigeon Creek Bridge, LADOTD, St. Helena Parish, LA.** *Bridge Design Engineer* responsible for replacing the existing bridge with a 32-ft by 140-ft precast slab bridge using ***phased construction***. Completed final design plans, including precast components and foundation layout, and coordinated with road design, environmental, and survey teams to finalize alignment and right-of-way.
04/16 – 07/16	**LA 506 Castor, Castor Relief, & Drain Bridges, LADOTD, Caldwell Parish, LA.** LADOTD Bridge Design Representative. Responsible for replacing six existing bridges with new cast in place slab span bridges in accordance with the most current and applicable ***LADOTD and AASHTO bridge design specifications***. Developed General Plans, foundation layouts and super elevation diagrams. Designed guard rails and conducted structural design and load ratings of various bridge components including slab spans, bent caps, and approach slabs.
04/14 – 10/15	**US 165 Bridges Near Fenton, LADOTD, Jefferson Parish, LA.** *Structural Engineer*. Four new bridges were proposed to be constructed on ***US-165 to replace the existing bridges***. Among the four bridges, Bridge 1 and 2 were proposed to be precast slab span bridges. The concrete slab panels, approach slab panels, bent cap sections for slab panel bridges were fabricated off-site and brought to the site ready to be erected in-place to form the whole structure gradually. Conducted structural design and load rating of the precast slab panels, bents, and approach slab panels for Bridges 1 and 2 as an LADOTD bridge design engineer.
07/16 – Ongoing	**US 90 Signing Upgrades, LADOTD, Jefferson and Orleans Parishes, LA.** *Project Structural Engineer*. Participated in design of the overhead and roadside signing structures following LADOTD and AASHTO design standards for the US 90 Business corridor for a length of approximately 9.8 miles. Investigated the as-built plans for the types, sizes and clearances of existing bridge girders, barrier, parapets, and deck overhangs to specify the sign-support attachments.

Firm employed by. ARCADIS

Name	**Bryan D. Barnes, EI**	Years of relevant experience with this employer	3
Title	Structural Engineer	Years of relevant experience with other employer(s)	4.5
Degree(s) / Years / Specialization		BS / 2021 / Civil Engineering	
Active registration number / state / expiration date		EI.0034967 / LA / Exp. 3/31/2026	
Year registered	2021	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		**Bridge Design**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Barnes is a Bridge Engineer with experience in design and detailing of structures as per AASHTO LRFD, the Louisiana Department of Transportation Bridge Design Manual, as well as using OpenBridge Modeler and Civil3D. He is familiar with the LADOTD policies, standards, and has the ability to work cohesively within a team alongside other engineers. Alongside using the design tools available, he also uses structural knowledge to perform hand calculations for bridge structural design when necessary. His responsibilities include plans preparation, structural design for bridges, as well as CAD drawing and quantities collection.
08/22 – Ongoing	**I-10 CMAR in Baton Rouge, East Baton Rouge Parish.** *Bridge Engineer.* Responsible for part of the ***bridge design*** in all sections of the project, doing structural design calculations for substructure components, creating ***plans***, CAD drawings, updating quantites, and coordinating with the project management section of the Department for the delivery of the project, per the Louisiana Department of Transportation and Development project delivery policies. The complete bridge project has several separate components including the west bound main lanes, the east bound main lanes, the east bound ramp, and the permanent widening portions of the bridge. The superstructure consists of either prestressed concrete girders, steel plate girders, or rolled steel beams. The bridge substructure consists of concrete piers supported on columns which are supported on ***drilled shafts*** and spread footings on drilled shafts.
04/24 – 04/24	**I-10 Calcasieu in Lake Charles – Calcasieu Parish.** *Bridge Engineer.* Responsible for putting together ***quantities*** when the project was still in preliminary phase, as well as helping another firm make the deadline for Stage 0.
04/24 – 04/24	**Stage 0 Studies IDIQ – LA 22 Tchefuncte River Bridge, LADOTD, St. Tammany Parish, LA.** *Bridge Engineer.* Responsible for helping develop and create feasible alternatives for the replacement of the LA 22 Tchefuncte River Bridge in Madisonville, LA. Helped in modeling and creating plans for the ***Stage 0 Feasibility Study*** for the different alternatives Arcadis provided.

Firm employed by: ARCADIS			
Name	**Colin C. Sarratt, PE**	Years of relevant experience with this employer	10
Title	Senior Hydraulics Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	BS / 2015 / Civil Engineering		
Active registration number / state / expiration date	PE.0046542 / LA / Exp. 09/30/2026		
Year registered	2022	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities	**Drainage**		

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Sarratt has 10 years of experience on transportation projects with a focus on stormwater hydrology and hydraulics and roadway engineering. His expertise includes hydraulic analysis and hydrologic feasibility studies, open and closed conveyance system design, culvert and cross-drain design, post-construction stormwater and water quality best management practices (BMP) design, and 2D bridge hydraulic bridge analysis. He has been responsible for leading hydrology and hydraulics design for schematics, design build, and complete plans, specifications, and estimate (PS&E) plan sets. He is proficient in Microstation, GEOPAK Subsurface utilities, Inroads ,OpenRoads, StormCAD, SMS, and SRH2D.
09/21 – 04/25	**Calton Road Overpass (Webb County, TX).** *Project Manager* and *Drainage Lead* for the Calton Road Overpass project located in the City of Laredo Texas to ***construct a railroad overpass over Santa Maria Avenue, the Union Pacific Railroad*** mainline, and turnaround tracks. The project also includes widening of Calton Rd to maintain access to Santa Maria Avenu due to the proposed overpass. ***As project manager, Colin kept close coordination between multiple design disciplines and stakeholders*** including the City of Laredo, TxDOT, and UPRR. The project also included the design of a closed drainage system with additional storage capacity in order to mitigate impacts to the existing drainage system downstream of the project site and still meet hydraulic grade line requirements.
10/22 – Ongoing	**Infrastructure Investement and Jobs Act (IIJA) Off-System Bridge Replacement (OSBR) Program, District 01, LADOTD.** *Senior Drainage Engineer.* Arcadis prepared ***preliminary and final plans of six proposed bridges,*** which included plan and profile sheets, typical roadway sections and quantities, a general bridge plan, traffic detour and road closure details, and relevant signing plans, as well as channel cross-sections. As senior drainage lead for this program, ***oversaw and prepared all Hydraulic analysis and design.***
08/25—Ongoing	**LADOTD IDIQ Contract for Hydraulics Section Support, Statewide, Louisiana.** *Project Manager.* Arcadis' task under this IDIQ contract includes Hydraulics Section manuals updating, HEC-RAS 1D and 2D watershed modeling, performance and technical review of NFIP no-rise applications, ***CLOMR and LOMR applications for highway and bridge projects***, ***2D bridge hydraulic modeling*** and scour analysis utilizing Aquaveo's SMS software, and general hydrologic and hydraulic analysis.
06/17 – 03/22	**Ogeechee River Bridge Replacement (Effingham County, GA).** *Drainage Lead* for the roadway realignment and bridge replacement for 2 bridges at the SR 119 and Ogeechee River bridge crossing (1 main channel and 1 of 2 overflow bridges) in Effingham County, GA. The project involved the creation of a ***2D hydraulic model utilizing SMS and SRH-2D*** in order to design the proposed multiple bridge configuration along SR 119 in order to determine proposed bridge lengths and elevations in order to meet both GDOT bridge design standards and ***GDOT hydraulic design studies requirements*** for the proposed configuration.
02/22 – 04/25	**I-10 Calcasieu River Bridge P3 (Calcasieu Parish, LA).** Drainage Lead Segment 1 of the I-10 Calcasieu Bridge Replacement P3 project to replace the existing I-10 bridge over the Calcasieu River with a new bridge north of I-10. The project also includes the construction of several new bridge structures within the project limits, both inside and outside widening of I-10, improvements

	and modifications to existing interchanges, and improvements to other associated roadways within the project limits. Project involves the design of both ***open and closed conveyance systems for Segment 1 between Prater Rd and PPG drive, culvert and cross-drain analysis and design, and outfall analysis utilizing LADOTD HYDR design software.***
12/15 – 04/25	**GDOT MS4 Permit Compliance (State-wide, GA).** *Drainage Lead* for an ongoing contract to provide program assistance and help GDOT provide public education and outreach on stormwater impacts, public involvement/participation, illicit discharge detection and elimination, construction site stormwater runoff control, post-construction stormwater management, pollution prevention/good housekeeping for municipal-type operations, and water quality monitoring and total maximum daily load. Responsibilities include the ***research and development of GDOTs post-construction stormwater BMP details and example plan sheets for state-wide, creation and development of MS4 related standards and specifications, assisting with the development of GDOT MS4 policy, and MS4 related GDOT Drainage Report revisions.***
11/16 – 04/18	**FY-17 Bridge Bundles (Polk County, GA).** *Drainage Lead* for replacement at Mountain Loop Road over Little Cedar Creek in Polk County, GA as part of the GDOT FY-17 Bridge bundles project. The project involved the creation of a ***2D hydraulic model utilizing SM and SRH-2D*** in order to design the proposed bridge crossing due to the sever skew of the creek under the existing bridge. Responsibilities included the design of the proposed bridge lendths and elevations in order to to meet GDOT Bridge design standards and ***GDOT hydraulic design study requirements*** for the proposed configuration, ***H&H report creation, and a bridge deck drainage analysis.***
02/23 – 05/23	**Shelby Avenue Off-System Bridge Replacement (Hunt County, TX).** *Drainage Lead* for the Shelby Avenue Bridge Replacement Project located in Hunt County Texas to replace the existing bridge over Faber Creek as part of the Paris District Off-System bridge PS&E replacement project. Responsibilities included leading the ***H&H analysis*** for the bridge crossing for both the existing and proposed conditions, determined and verified peak flows at the existing crossing, performed an impact assessment due to changes in water surface elevations, ***developed HEC-HMS and HEC- RAS models***, and prepared a comprehensive drainage report to document findings.
06/21 – 12/22	**TDOT I-65 Widening (Sumner & Robertson Counties, TN).** *Drainage Engineer* for Segment 2 of the I-65 widening project located in Sumner and Robertson Counties to widen I-65 to three lanes from Highway 31w to south of New Hall Rd that included both inside and outside widening. Project involved the design of numerous ***closed drainage systems in OpenRoads*** due to proposed inside widening, determining pre-developend and post-developed peak flows for project outfalls, ***open conveyance system design, and the design and analysis of multiple culvert and cross-drains crossings throughout the project.***
03/22 – 04/24	**FM 1209 at FM 969 Intersection Improvements (Bastrop County, TX).** *Project Manager* and *Drainage Lead* for the FM 1209 at FM 969 Intersection Improvements Project located in Bastrop TX to reconstruct the existing Y-intersection into a T-intersection, provide full depth reconstruction for both roadways within the project limits, construction of a right-hand turn lane along FM 1209 EB with additional widening for a future left-hand turn lane, and the construction of a flashing beacon with the anticipation of a future signalized intersection and through lane. Project involved the multiple planning considerations due to future developments adjacent to and within close proximity to the project site including SpaceX and The Boring Company. ***The drainage design primarily included both cross-drain and open channel design.***
07/22 – 04/25	**Grant Rd Widening – Segment 4 (Harris County, TX).** *Project Manager* for the study phase to widen Grant Rd from 2 to 4 lanes with a raised median and south-side sidewalk (Cypress Rose Hill Rd to Telge Rd). Led coordination with Harris County and stakeholders on shared outfall design, stormwater channel expansion, and permitting. Managed subconsultants, traffic studies, and study phase reporting.

Firm employed by: ARCADIS			
Name	**Lina Khoury, PE, CPESC, CFM**	Years of relevant experience with this employer	3
Title	Senior Hydraulics Engineer	Years of relevant experience with other employer(s)	16
Degree(s) / Years / Specialization		MS / 2013 / Environmental Engineering / Tennessee State University BS / 2008 / Civil Engineering / Jordan University of Science and Technology	
Active registration number / state / expiration date		Professional Engineer 117663 / TN / 06/30/2027 (Also licensed in NC, SC, AR, MS, GA, IN, and TX); Certified Professional in Erosion and Sediment Control No. 9267 Certified Floodplain Manager/ US-19-11213 / Exp. 1/31/2026	
Year registered	2015	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Drainage**	

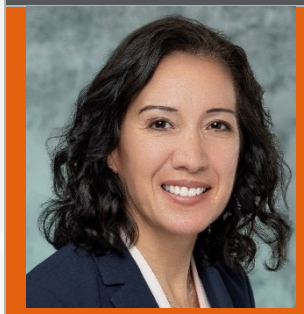
Experience dates	Experience and qualifications relevant to the proposed contract
	Ms. Khoury brings over 19 years of experience in hydrology and hydraulics, roadway drainage design, erosion prevention and sediment control design, and state and federal water quality permitting. Lina has a diverse and well-rounded project background since she worked in multiple disciplines related to roadway projects. She is licensed in multiple states and is **familiar with different state and DOT manuals and guidelines.** She has been a trusted client resource for supporting as an owner representative and provide training for the TDOT drainage staff. While reviewing **I-10 drainage design, Lina gained familiarity with LADOT manuals and drainage tools.** She is experienced with multiple design software including, HEC-RAS, HEC-HMS, HY-8, SMS-SRH-2D, FHWA Hydraulic Toolbox, MicroStation, Geopak Drainage, OpenRoads, StormCAD and ArcGIS.
02/22 – 04/25	**I-10 Calcasieu River Bridge P3 (Calcasieu Parish, LA).** *Drainage Engineer* Segment 1 of the I-10 Calcasieu Bridge Replacement P3 project to replace the existing I-10 bridge over the Calcasieu River with a new bridge north of I-10. The project also includes the construction of several new bridge structures within the project limits, both inside and outside widening of I-10, improvements and modifications to existing interchanges, and improvements to other associated roadways within the project limits. Project involves the design of both ***open and closed conveyance systems for Segment 1 between Prater Rd and PPG drive, culvert and cross-drain analysis and design, and outfall analysis utilizing LADOTD HYDR design software.***
08/25—Ongoing	**LADOTD IDIQ Contract for Hydraulics Section Support, Statewide, Louisiana.** *Project Manager.* Arcadis' task under this IDIQ contract includes Hydraulics Section manuals updating, HEC-RAS 1D and 2D watershed modeling, performance and technical review of NFIP no-rise applications, ***CLOMR and LOMR applications for highway and bridge projects***, ***2D bridge hydraulic modeling*** and scour analysis utilizing Aquaveo's SMS software, and general hydrologic and hydraulic analysis.
06/24 – Ongoing	**SR107/SR81 Progressive Design Build Bridge Replacement (Greene and Washington Counties, TN).** *Hydraulics, Drainage and Permits Engineer Lead* on the emergency progressive design build as an owner representative to ***review H&H modeling, scour analysis, deck drain design, TVA requirements, roadway stormwater design, water quality permits, environmental compliance plan, and EPSC plans.*** These projects are considered emergency projects since hurricane Helene washed both bridges and their approaches out. The review included continuous collaboration with the TDOT team and the Design-Builder.

03/21 – Ongoing	**Bridge Bundle Design Build, GDOT, Multiple Counties, GA.** *Lead Hydraulics Engineer* on the bridge bundle design build to provide owner representation for ***reviewing and commenting on bridge hydraulics*** submitted by the design build team. The bundle included ***six bridge hydraulics studies***. One of the bundles is the replacement of the existing bridge (Structure ID 037-5013-0) on County Road (CR) 134/Rice Road over Falling Creek 6.5 miles north of Morgan in Calhoun County, Georgia. Existing right-of-way (ROW) varies between approximately 100-200 feet. No ROW would be required as part of the proposed project. The length of the proposed project would be approximately 1,000 feet.
06/24 – Ongoing	**I-55 From South of Mississippi River to North of Mississippi River -CMCG (Shelby County, TN).** *Hydrology and Hydraulics Lead Engineer*- Owner Representative for the ***replacement of the I-55 bridge over the Mississippi River*** in Shelby County. The scope of work includes preparing ***two-dimensional H&H analysis in SMS-SRH2D and HEC-RAS2D and provide preliminary scour analysis to FHWA*** to assist in developing scour analysis through new and updated methodologies. This bridge is in ***FEMA AE zone, Coast Guard jurisdiction, and Army Corps jurisdiction.*** Arcadis is also in charge of obtaining a no-rise solution and assist TDOT with Coast Guard application. The project is a reconstruction and widening of I-55 for 1.65. ***The bridge length is 1.01 miles***
02/24 – Ongoing	**SR-30 (Old Washington HWY) from Near SR-29 (US-27) to West of New Union Rd./ White Oak Rd., Rhea County, TN.** *Project manager and lead H&H QC* responsible for reviewing and providing design guidance for the hydraulic modeling of the bridge over Richland Creek. The project is in ***FEMA zone AE and TVA reservoir. H&H study was completed*** for the no-structure, existing and proposed bridges. The bridge span arrangement was set to provide vertical and horizontal clearances for TVA in addition to an arrangement to obtain a no-rise solution.
06/24 – Ongoing	**SR67 Bridge over the Doe River Emergency Repair Carter County,TN.** *Hydraulics and Scour Engineering Lead* responsible for owner representation for ***reviewing H&H study and scour analysis for the bridge*****.** Flooding from Hurricane Helene severely damaged the SR-67 concrete arch bridge (Bridge Number 10SR0670029) over the Doe River. The flood caused undermining of the footings, settlement, cracking of the structure along with widespread channel bank erosion and flood debris. This Project includes the repair of the existing bridge by stabilization of the substructure, strengthening of the undermined foundations, restoration of the bridge to its original elevation, and bridge repairs.
05/22 – Ongoing	**Blue Oval G2 Segments, SR-194, New Route from Northern Interchange to SR-1 & New Route connecting I-40 to SR-59, TDOT, Fayette, Haywood & Tipton Counties, TN.** *Lead Stormwater Engineer* responsible for culvert design, ditch design, erosion prevention and sediment control design, permit sketches, coordination between drainage, roadway and structures, and assisting with water quality permit requirements on plans for the Blue Oval G2 Roadway Improvements. G2 South is approximately 3.3 miles and consists of extending SR-194 from the existing termini at SR-59 to the proposed SR-194/I-40 interchange in Fayette County. G2 South includes ***three bridges and the design of multiple box culverts***. G2 North is approximately 2.1 miles and consists of extending SR-194 from the proposed SR-194/Blue Oval Connector (Proposed SR-468) Interchange in Haywood County to existing SR-1(US-70) in Tipton County. G2 North ***contains three bridges, including a new structure over an active rail line.*** All designs and plan development are being done with Bentley OpenRoads Designer (ORD) design software. Arcadis is providing roadway design services and assisting with public involvement, while working in conjunction with other team members providing survey, geotech, material testing, hydraulic design, bridge design, and traffic engineering services.

Firm employed by. ARCADIS

Name	Antonia Donnelly, PE	Years of relevant experience with this employer	12
Title	Senior Hydraulic Engineer	Years of relevant experience with other employer(s)	15

Degree(s) / Years / Specialization			BS/ Civil Engineering / New Mexico State university / 1995
Active registration number / state / expiration date			66100 / FL / Exp. 2/2027
Year registered	2007	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities			**Drainage**

Experience dates	Experience and qualifications relevant to the proposed contract
	Antonia has a broad range of civil engineering experience and has led the design efforts on several private and public engineering projects in the Southeast US. Antonia's specialty is stormwater system design and permitting for transportation projects. She has extensive, relevant experience in hydraulic analysis, drainage systems design, and stormwater permitting through the Florida St. Johns River and the Suwannee River Water Management Districts. Her responsibilities include analysis, design, and permitting for various paving and drainage projects. Antonia has extensive knowledge in computer applications pertaining to hydraulics, water quality and quantity, and design of stormwater control systems.
08/25 – Ongoing	**LADOTD IDIQ Contract for Hydraulics Section Support, Statewide, Louisiana.** Senior Hydraulics Engineer. Arcadis' task under this IDIQ contract includes Hydraulics Section manuals updating, HEC-RAS 1D and 2D watershed modeling, performance and technical review of NFIP no-rise applications, CLOMR and LOMR applications for highway and bridge projects, 2D bridge hydraulic modeling and scour analysis utilizing Aquaveo's SMS software, and general hydrologic and hydraulic analysis.
07/17 – 04/18	**I-20 over Augusta Canal/Savannah River, Georgia Department of Transportation, Richmond County, GA.** *Senior Hydraulics Engineer:* This project involved the replacement of the existing Interstate 20 (I-20) bridges over the Augusta Canal and Savannah River in Richmond County, Georgia. The ***Federal Emergency Management Agency (FEMA)*** designated the Augusta Canal as Zone A, and established the regulatory floodplain and floodway (Zone AE) for the Savannah River through the project area. The Augusta Canal is designated a natural, historic and economic resource which attracts many recreational uses. ***This Savannah River bridge spans two states*** (Georgia and South Carolina) and the study area covers four counties. The affected Georgia counties (communities) include Richmond and Columbia, while the South Carolina counties (communities) include Aiken and Edgefield. Based on the historic nature of the Augusta Canal, the goal of the improvement project was to cause no adverse impact to the Augusta Canal capacity, towpath, or the floodplain (the low lying swamp area situated between the Canal and Savannah River), while providing the required GDOT clearance and meeting backwater limits. The goal for the hydraulic modeling of the Savannah River was to ensure no increase in the base flood elevations (a no-rise condition). The GDOT and ***FEMA hydraulic modeling was performed*** in accordance with the guidance of the GDOT Drainage Manual.

05/22 – Ongoing	**Bethlehem Road Interchange I-75 at CR 312 Design-Build, Georgia Department of Transportation, Henry County.** *H&H lead:* Responsible for reviewing ***HEC-RAS modelling associated with the Bethlehem Bottoms bridge***, and Tributaries to Bethlehem Bottoms culvert replacements. The project included realignment of Bethlehem Road to four lanes, constructing new brides across I-75 and Betlehem Bottoms, and providing additional access points to and from Bethlehem Road.
08/17 – 07/18	**SR 53 over Chattahoochee River/Lake Lanier, Georgia Department of Transportation, GA.** This project involved improvements to SR 53 and ***the replacement of the existing west-bound bridge*** over Lake Sidney Lanier in Hall County, Georgia. The Federal Emergency Management Agency (FEMA) has designated the Chattahoochee River/ Lake Lanier and its surrounding floodplains as Zone A. Lake Lanier was constructed by the U. S. Army Corps of Engineers (USACE) in the 1950's with in-flows controlled at Buford Dam, which is located approximately 18.5 river miles upstream of the SR 53 crossing. The USACE generated state-storage curve for Buford Dam was used to ***establish the boundary conditions for the HEC-RAS model*** for this project. The hydraulic modeling was performed according to the guidance provided in the GDOT Drainage Manual. A detailed hydrologic and hydraulic study was prepared to detail the design methodology used to prove that no adverse impacts would result to Lake Lanier/Chattahoochee River, based on the proposed improvements.
06/17 – 11/17	**Buena Vista Road Bridge and Spiderweb, City of Columbus, GA.** The project improved the Buena Vista Road corridor and included widening of the existing bridge over Lower Bull Creek. The ***Federal Emergency Management Agency (FEMA) Lower Bull Creek and its surrounding floodplains were designated Zone AE Special Flood Hazard Area***. Antonia was responsible for the hydrologic and hydraulic analysis to demonstrate that the proposed bridge widening at the crossing of Buena Vista Road over Lower Bull Creek would not result in an increase in the BFEs, resulting in a No-Rise condition.
06/18 – 01/19	**FY2018 Design-Build Bridge Costing Plans, Georgia Department of Transportation, Statewide, GA.** *Senior Engineer.* Costing plans were prepared for the Design-Build solicitation of the replacement of eight low impact, low volume, off system bridges across Georgia. The existing bridges were structurally deficient. All crossing were designated FEMA Flood Hazard Zone A. Existing and proposed bridges varied from single span to multi-span structures and ranged in length up to approximately two hundred feet long. ***HEC-RAS modeling was performed in accordance with the GDOT Drainage Manual to ensure the conceptual layouts met clearance and backwater criteria***, and technical memorandums drafted to provide the data, approach and design methodology for each hydrologic and hydraulic model.
06/17 – 01/18	**FY2017 Design-Build Bridge Costing Plans, Georgia Department of Transportation, Statewide, GA.** *Senior Engineer.* Project included preparation of costing plans and RFP package for replacement of 14 bridges. Antonia was responsible for the hydraulic modeling of 9 existing bridges in Districts 2, 4 and 6. Submittal documentation included technical memorandums summarizing the model results to accompany the design-build request for RFP packages.

Firm employed by. ARCADIS

Name	Amanda Check, PE	Years of relevant experience with this employer	10.5
Title	Senior Transportation Engineer	Years of relevant experience with other employer(s)	6
Degree(s) / Years / Specialization		BS / 2008 / Civil Engineering	
Active registration number / state / expiration date		PE 45736 / LA / Exp. 09/2025; GA Level II Certified Design Professional ES&PC / Exp. 03/2026	
Year registered	2012	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		**SRH-2D Modeling, FEMA Regulations, & Training**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Ms. Check has experience in drainage and hydraulic design, Municipal Separate Storm Sewer Systems (MS4), erosion control, roadway design, and geographic information systems (GIS). She has completed hydrologic and hydraulic modeling and studies on culverts, bottomless culverts, and bridges, including adhering to FEMA requirements on FEMA studied waterways. She has designed horizontal and vertical alignments, roadway drainage, MS4, and erosion control on projects ranging from rural roadways to interstates. Her knowledge and experience with GIS provide a valuable supplement to her design capabilities. Ms. Check has knowledge in multiple software programs including MicroStation, StormCAD, InRoads, OpenRoads, HEC-RAS, HEC-2, SRH-2D, HY-8, Hydraflow, FlowMaster, PondPack, SWMM, WinTR-55, WMS, and ArcGIS. She has completed the NHI SRH-2D training course (135095 Two-Dimensional Hydraulic Modeling of Rivers at Highway Encroachments) and 1D/2D Modeling with HEC-RAS training course. Ms. Check is a member of the American Society of Highway Engineers and the American Council of Engineering Companies.
07/18 – 01/21	**I-40 Bridge Replacement over the Buffalo River Tennessee Department of Transportation (TDOT), Humphreys County, TN.** *Hydraulic Engineer*. The project replaced the existing eastbound and westbound bridges of I-40 over the Buffalo River with a new bridge constructed on the same horizontal alignment. Each existing bridge was 1,765 feet long, comprised of 42 spans and the proposed bridge is 1,775 feet long, comprised of 11 spans. ***Federal Emergency Management Agency (FEMA)*** has not established a regulatory floodplain or floodway for the project site, designated on the FIRM as Zone A. Responsible for the ***hydrologic calculations, Hydrologic Engineering Center - River Analysis System (HEC-RAS) hydraulic modeling, scour calculations, abutment riprap calculations, deck drainage calculations, and report preparation.***
08/25—Ongoing	**LADOTD IDIQ Contract for Hydraulics Section Support, Statewide, Louisiana.** *Project Manager.* Arcadis' task under this IDIQ contract includes Hydraulics Section manuals updating, HEC-RAS 1D and 2D watershed modeling, performance and technical review of NFIP no-rise applications, ***CLOMR and LOMR applications for highway and bridge projects***, ***2D bridge hydraulic modeling*** and scour analysis utilizing Aquaveo's SMS software, and general hydrologic and hydraulic analysis.
12/15 – 03/23	**FY 2016 - FY 2022 Bridge Design-Build Program Georgia Department of Transportation (GDOT), Various Counties, GA.** *Hydraulic Engineer*. Program included costing plans for over fifty low impact, low volume, off system bridge replacements across Georgia where existing bridges were structurally deficient. Provided senior Quality Assurance and Quality Control (QA/QC) review of the ***hydrologic calculations, HEC-RAS hydraulic modeling, scour calculations, abutment riprap calculations, deck drainage calculations, and report preparation.***

01/21 – 03/23	**CR-122/Humpback Road over Little Satilla River GDOT, Brantley County, GA.** *Hydraulic Engineer*. The project replaced the existing 132 feet long 11 span bridge with a 180 feet long 4 span proposed bridge constructed on the same horizontal alignment. ***FEMA*** has not established a regulatory floodplain or floodway for the project site, designated on the FIRM as Zone A. The floodplain is very wide (approximately 8,000 feet) and the site and roadway are flooded during typical/non-extreme rain events throughout the year. Responsible for the ***hydrologic calculations, HEC-RAS hydraulic modeling, scour calculations, abutment riprap calculations, deck drainage calculations, and report preparation.***
01/18 – 02/21	**SR-38 over Little McMillan Creek Bridge Replacement GDOT, Wayne County, GA.** *Hydraulic Engineer*. The project replaced the existing SR-38 twin bridges over Little McMillan Creek with new bridges constructed on the same horizontal alignment. The existing bridges are 200 and 208 feet long (eight spans each bridge) and the proposed bridges are 255 and 265 feet long (six spans each bridge). The hydraulic model also includes a downstream existing CSX railroad bridge (136 feet long, 14 spans). The project site is ***located in FEMA Zone AE without a designated floodway, and the FEMA effective model*** was in Water Surface Profiles (WSPRO). Directly upstream/at the westbound bridge, Millikin Bay and Coleman Branch converge to create Little McMillan Creek. A minimal rise resulted but was within FEMA and GDOT allowable rise of one foot. Responsible for the ***hydrologic calculations, FEMA and GDOT hydraulic modeling in HEC-RAS, scour calculations, abutment riprap calculations, deck drainage calculations, report preparation, and community coordination.***
03/20 – 03/21	**I-285 Westbound Ramp Extension GDOT, DeKalb County, GA.** *Hydraulic Engineer*. The project extended an I-285 westbound off-ramp, with the widening occurring over existing box culverts at North Fork Nancy Creek and North Fork Nancy Creek Unnamed Tributary 2. The project site is located in ***FEMA Zone AE and has a designated floodway.*** The extensions of the two box culverts resulted in a minimal rise in Base Flood Elevations (BFEs). Responsible for the ***hydraulic analysis and associated Conditional Letter of Map Revision (CLOMR) application package, FEMA coordination***, and community coordination. After the initial ***CLOMR submittal to FEMA the HEC-RAS modeling*** and extension design was revised to obtain a no-rise by lining one of the culvert barrels.
02/21 – Ongoing	**I-285 at I-20 East Interchange Reconstruction GDOT, DeKalb County, GA.** *Hydraulic/Drainage Engineer*. The Design-Build project reconfigured the I-285/I-20 eastern interchange, widened and reconstructed approximately 6 miles of I-20, and reconstructed and improved approximately 2 miles of side roads. Responsible for the ***drainage and MS4 design*** and respective reports preparation, in addition to the erosion and sedimentation control design, calculations, and plans. One of the project's bridge replacements was a hydraulic crossing (I-20 over Snapfinger Creek) and is designated as ***FEMA Zone AE with a designated floodway.*** Responsible for the ***hydrologic calculations, HEC-RAS hydraulic modeling, scour calculations, abutment riprap calculations, deck drainage calculations, and report preparation.*** The bridge replacement resulted in no increase in BFEs, however, the floodway width was revised at one published cross section. Responsible for the associated ***CLOMR and LOMR application packages, FEMA coordination,*** and community coordination with DeKalb County and the City of Stonecrest.

Firm employed by. ARCADIS				Meets MPR No. 5
Name	Kirk Lowery, PE, BC.GE		Years of relevant experience with this employer	13
Title	Geotechncal Engineer		Years of relevant experience with other employer(s)	24
Degree(s) / Years / Specialization			MS / 2000 / Civil Engineering BS / 1987 / Civil Engineering	
Active registration number / state / expiration date			PE. 25665 / LA / Exp. 09/30/2026	
Year registered	1994	Discipline	Civil Engineer, Environmental Engineer	
Contract role(s) / brief description of responsibilities			**Geotechnical Engineer**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Lowery has 37 years of geotechnical planning, design, and construction experience. He has served as the geotechnical task lead ranging from preliminary design alternatives and assessment of levees, earthen dams, and concrete dams to mitigation recommendations for unstable slopes using remedial measures such as deep soil mixing and compacted stone columns. He has experience performing Flood Risk Management, Aquatic Ecosystem Restoration and Coastal Storm Risk Management projects. Training: Geostudio (SLOPE/W, SEEP/W, SIGMA/W) workshop, ENSOFT (LPile, APile, GROUP, PYWall) workshop, OpenGround USACE workshop. **Mr. Lowery meets Minimum Personnel Requirement Number 5.**
05/04 – 02/06	**Louisiana TIMED Management Program throughout Louisiana.** *Project Leader for the geotechnical* investigation of 14 separate Louisiana Timed Projects along Louisiana Highways 165, 167 and 425. Responsible for preparing all proposals and ***verifying that all geotechnical work and design were completed in accordance with LADOTD guidelines***. These projects included drilling, sampling, geotechnical testing, and ***geotechnical design for new bridges*** over waterways and ***railroad bridges***, new roadway embankments, and large excavations. Geotechnical recommendations were provided for post-tension, precast concrete bridge piles, drilled shafts, slope stability for embankments and excavations, settlement analyses of embankments, surcharge loading of embankments, possible wick drains for large embankments, settlement monitoring plans for large embankments, possible dewatering requirements for large excavations, and constructability considerations.
08/09 – 07/11	**Comite Diversion Project – US Highway 61, Baton Rouge, LA.** *Civil Geotechnical Engineer*. Lead Geotechnical Engineer for two new, permanent, highway bridges, including approaches; a temporary highway bypass (on grade); a new, permanent railroad bridge; a temporary shoofly (by-pass on grade); and USACE channel design, including disposal areas, and dewatering as required. ***Coordinated geotechnical efforts with LADOTD and proposed additional CPTs and borings to accommodate FHWA's LRFD standards.*** Additionally***, design of the railroad bridge and shoofly required the use of American Railway Engineering and Maintenance-of-way Association (AREMA) standards.*** The team provided quality control for the field and laboratory testing and conducted geotechnical analysis including slope stability, settlement, pile design using FHWA's LRFD and AREMA standards, ***retaining wall analysis for the railroad crash wall,*** and slope protection recommendations.
02/09 – 1/14	**Western Tie-In U.S. Highway 90, Jefferson Parish, LA.** *Civil Geotechnical Engineer*. Arcadis supported USACE by completing final engineering design plans and specifications for a floodwall crossing U.S. Highway 90. In addition to designing the floodwall, an approximate 2,540-foot-long bridge was designed in accordance with FHWA's LRFD standards. Kirk was the Geotechnical Task Manager for the final design. The geotechnical team reviewed existing geotechnical borings and CPTs, did preliminary geotechnical analysis and determined an additional boring and CPTs were necessary to meet FHWA's LRFD

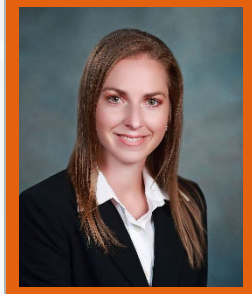
	preliminary geotechnical analysis and determined an additional boring and CPTs were necessary to meet FHWA's LRFD standards. The team provided ***quality control for the field and laboratory testing and conducted geotechnical analysis including slope stability, settlement, seepage, levee design, pile design, T-wall design,*** evaluating downdrag issues on piles due to fill placement and assisted in preparing plans, specifications, cost estimates, and report documentation of design alternatives. Led Arcadis' team to develop pile load test plans and specifications and provide an evaluation with recommendations of the pile load tests.
09/19 – Ongoing	**Rio Puerto Nuevo Channel (2D/2E) and Roosevelt Avenue Bridge Replacement (2B) Design, San Juan, PR.** *Civil Geotechnical Engineer.* Provided geotechnical QC review of all design submittals of a 1.1-mile channel wall segment capable of resisting seismic loading on the Rio Puerto Nuevo. Provided geotechnical and structural design as ***well as extensive construction sequencing drawings for the drilled shaft cantilevered channel tangent walls, a utility 36-in siphon structure and coffer cells, inlet and drop structures, channel excavation, bridge superstructure and abutments***, utility penetrations through channel walls, and a utility bridge to carry a 48-in potable watermain pipe over the canal.
01/15 – 11/15	**Louisiana Coastal Area Beneficial Use of Dredged Material (BUDMAT) Program, Plaquemines Parish, LA.** *Civil Geotechnical Engineer*. Geotechnical task leader of the selected option of this project to construct roughly 80 acres of marsh and ridge via hydraulic dredging, transport over 10 miles, and placement of approximately 1.7 million cubic yards of material from the Mississippi River near Spanish Pass. As part of the evaluation and design, borings were taken to determine an excavation plan for routing the dredge pipe under Tide Water Road in Venice, Louisiana. ***Assessed the civil layout based on right-of-way, overhead clearance and the existing structures along the roadway***, and then he analyzed the required sheeting needed to keep the excavation open.
12/15 – Ongoing	**Mecca Impoundment Design, Palm Beach County, FL.** *Civil Geotechnical Engineer*. Geotechnical Lead for the analysis and development of the design for a proposed aboveground water storage reservoir to benefit the Loxahatchee River, a national Wild and Scenic River in northern Palm Beach County. Project responsibilities included overseeing the delivery of the ***geotechnical data report, geotechnical technical memoranda, and a final geotechnical engineering report*** that summarized the technical memoranda. The field investigation included 24 initial and four supplementary borings, 44 piezometers/wells, field permeability testing, and geotechnical laboratory testing.
04/18 – 08/25	**C-139 Flow Equalization Basin Design, Hendry County, FL.** *Civil Geotechnical Engineer*. Performed geotechnical analysis and design using geotechnical modelling data, geotechnical laboratory testing, installation of piezometers, and slug tests of the piezometers. ***Analyzed seepage, slope stability, and erosion protection*** of the internal and external containment berms and designed recirculation channels for seepage and the foundation design of the inlet / outlet structures. Kirk oversaw the ***geotechnical investigations*** and prepared boring logs, performed logging in gINT, and coordinated lab testing. The soil borings included field standard penetration testing.
05/19 – Ongoing	**Helena Levee / Floodwall Design, Phillips County, AR.** *Civil Geotechnical Engineer*. Led geotechnical evaluation and design of floodwall. Reviewed historical borings and performed seepage, slope stability and settlement analysis to determine depth of sheet pile needed and to mitigate the unstable slope. Design of the replacement of 3,700 linear feet concrete floodwall and 2 gates on the Mississippi River. The design required the preparation of 100% construction plans and specifications. ***Developed geotechnical design conditions based on investigations of the subsurface conditions*** that included previous investigations provided by USACE and current investigation conducted by Arcadis.

Firm employed by. ARCADIS				Meets MPR No. 6
Name	**Ayan Mehrotra, PE, PMP**		Years of relevant experience with this employer	3
Title	Geotechncal Engineer		Years of relevant experience with other employer(s)	15
Degree(s) / Years / Specialization			MS / 2014 / Civil Engineering, Louisiana State University BS / 2011 / Civil Engineering, Louisiana State University	
Active registration number / state / expiration date			PE. 40973 / LA / Exp. 03/2027	
Year registered	2016	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities			**Geotechncal Engineer**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Mehrotra is a highly skilled Geotechnical Engineer with over 18 years of experience, specializing in project management for flood protection and coastal resiliency projects. Ayan has a proven track record of successfully leading complex geotechnical designs for flood protection, coastal resiliency, and infrastructure projects. Ayan excels in overseeing all stages of project lifecycles, from initial planning and budgeting to execution and quality control. His strong leadership, meticulous attention to detail, and effective communication skills enable him to effectively coordinate multidisciplinary teams, ensuring project objectives are met on time and within budget. Ayan's expertise in project management, combined with his extensive geotechnical engineering background, make him a valuable asset for organizations seeking a results-driven professional to drive successful project outcomes. **Mr. Mehrotra meets Minimum Personnel Requirement Number 6.**
11/18 – 04/21	**Laurel Ridge Levee, GSA, Ascension Parish, LA.** *Geotechnical Engineer*. The project involves the construction of an approximately 4-mile-long levee in east Ascension Parish, Louisiana. The geotechnical scope of services included performing 5-inch soil borings, laboratory testing, and geotechnical levee design. ***Performed settlement analysis*** to evaluate levee overbuild, and ***slope stability analysis*** in accordance with USACE HSDRRS guidelines of proposed levee sections.
07/17 – 11/18	**Sunset Levee, CB&I, Sunset Drainage District Levee – St. Charles Parish, LA**. *Staff Engineer.* The project consisted of geotechnical design of proposed improvements to 10 miles of earthen levee. The improvements included increasing the protection height of the existing levee. Responsible for performing stability analyses of proposed T-Wall sections of the levee. The T-Wall were analyzed for local and global stability utilizing an approach developed by USACE-MVN.
06/14 – 07/17	**Engineer's Road Drainage Improvements, Trigon, Plaquemines Parish, LA.** *Lead Geotechnical Engineer.* The project consisted of various drainage improvements along Engineers Road in Belle Chasse, Louisiana. The improvements consisted of removal and replacement of existing drainage pipes and culverts, regrading of existing open-channel sections, a new pump station, and installation of two outfall pipes over the Algiers Canal Levee. The Algiers Canal Levee is a part of the ***USACE HSDDRS*** system, and therefore, the pipe crossing over the levee required stability, settlement, and seepage analyses utilizing Slope/W and Method of Planes to satisfy USACE permitting requirements.
06/14 – 07/17	**Dillard University Drainage Improvements, Dillard University, New Orleans, LA.** *Project Manager.* Performed stability and seepage analysis to satisfy USACE requirements. The project consisted of various ***drainage improvements*** throughout the campus of Dillard University. Part of the project included the construction of a detention pond, and a trench to replace an

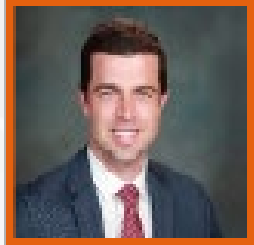
	existing storm drain, within 150 feet of the ***London Avenue Floodwall***. Stability and seepage analysis were performed with respect to the London Avenue Floodwall to satisfy USACE permitting requirements. The stability analysis was performed in accordance with USACE HSDRRS design guidelines and included full gap, partial gap, and global analysis.
07/17 – 11/18	**Port Development, Evans-Graves Engineers, Cameron, LA.** *Geotechnical Engineer*. The project consisted of the construction of a new port facility near the existing Calcaseiu Ship Channel in Cameron, LA. The port facility will be created by hydraulically dredging an entrance channel and a slip. The dredging will be performed to about El. -33 feet (existing El. +1 feet) and the slip will be constructed utilizing open-cell sheet walls. ***Manage the scope of services consisting of performing soil borings*** to depths of up to 150 feet, field vane shear tests, CPTu testing, laboratory testing, and engineering analyses. Performed engineering analyses that included creating the dredge profile, foundation analysis, slope stability analysis, pavement recommendations, settlement analysis, ground improvement recommendations, and soil design profiles.
06/14 – 07/17	**Yscloskey to Norco Pipeline Relocation, Design Engineer, Yscloskey, LA**. *Geotechnical Engineer.* Performed geotechnical analysis for this project that involved evaluating the stability of a bank of the Mississippi River due to a proposed excavation to relocate an existing pipeline. The pipeline replacement was proposed to be performed using an open trench excavation within 50 feet of the levee toe and a geotechnical stability analysis was needed to help ensure that the excavation would not impact the levee or the bank of the river. ***Performed the levee/bank stability analysis*** utilizing LMVD Method of Planes. .
07/17 – 11/18	**Cypremort Point Wave Attenuation System, Royal Engineers, Cypremort Point Park, LA.** *Geotechnical Engineer.* The project consisted of the proposed construction of a wave attenuation system (breakwater) at Cypremort Point State Park in St. Mary Parish, LA. The new wave attenuation system will replace a previous one that was damaged during Hurricane Rita. Manage the scope of services consisting of performing soil borings over open water, laboratory testing, and engineering analyses. Also performed engineering analyses that included considering two types of breakwater systems, a rock dike and Oysterbreak™. Engineering analyses was performed to consider both the ***global stability, and settlement,*** of both types of systems and aid in selection of the most practical/cost efficient solution.

Firm employed by. Ardaman & Associates, Inc.			Meet MPR No. 5
Name	**Megan Bourgeois, PE**	Years of relevant experience with this employer	19
Title	Geotechncal Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	BS / 2006 / Civil Engineering Traffic Control Supervisor / LA / 6-21-2028 DOTD Flagger / LA / 8-14-2028 Certified NHI Drilled Shaft Inspector		
Active registration number / state / expiration date	PE. 36725 / LA / Exp. 03/31/2026		
Year registered	2011	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities	**Geotechncal Engineer**		

Experience dates	Experience and qualifications relevant to the proposed contract
	Ms. Bourgeois has more than 19 years of experience with design and analyses of countless types of foundations including shallow, embankment settlement analysis, deep foundations (pile and drilled shafts), LRFD design, FHWA & GEC design, slope stability (embankment and excavation) and earth retaining structures. She also has extensive experience with geotechnical instrumentation, installation and monitoring, and construction phase testing and laboratory management. She has served as Ardaman's project manager for many LADOTD projects for bridges and roadways throughout Louisiana and completed numerous geotechnical investigations, engineering, and reporting in accordance with LADOTD standards. She has successfully overseen several major contracts for LADOTD and other clients. Ms. Bourgeois also serves as the director of our geotechnical engineering and CMT laboratories in Baton Rouge and has overseen the laboratory testing programs in accordance with LADOTD standards. In this role, she supervises the laboratory managers, oversees testing, provides guidance to laboratory staff, and ensures appropriate protocol is followed and deadlines are met in addition to providing training material and maintaining all laboratory certifications, including AMRL, CCRL, DEQ & USACE.
07/23 – Ongoing	**MRB SOUTH GBRL: LA 1 TO LA 30 CONNECTOR: West Baton Rouge, Iberville, Ascension, and East Baton Rouge Parishes, LA.** *Project Engineer.* The project consists of an Enhanced Planning investigation into S.P. No. H.013284, MRB South GBR: LA 1 to LA 30 Connector, with the objective of constructing a new Mississippi River crossing located between the I-10 and LA 70 River crossings from three proposed alignments. Helped oversee ***supervision of the field program***, development of the laboratory testing program, quality control review, and development of an interactive geotechnical database to compile all the soil borings and ECPT. The preliminary engineering analyses included caisson design, driven piles, drilled shafts, embankments, proposed alignment comparisons, environmental concerns, and testing program recommendations.
07/21 – 01/22	**I-10 CALCASIEU RIVER BRIDGE: Calcasieu Parish, LA.** *Project Manager.* Managed all aspects of this project pertaining to coordination of fieldwork including 37 deep soil borings, 39 ECPTs and 13 geophysical survey transects. A majority of the soil borings were completed from a barge over deep water, some from a marsh buggy over shallow water and thick marsh grass. Also managed and oversaw the laboratory testing program and processing and analyzing of the ECPT and ER data. Assisted with development of a geotechnical database and preparation and submittal of a geotechnical data report. This project ***consisted of obtaining geotechnical data under a strict deadline*** to be used in the design of a replacement of the existing I-10 Calcasieu River Bridge with a new structure and improvements to various other interchanges.

04/21 – Ongoing	**RURAL BRIDGE INITIATIVE PHASE II: West Feliciana, East Feliciana, Livingston, St. Bernard Parishes, LA.** *Project Engineer*. This project consists of the replacement of multiple small two-lane bridges throughout rural areas of Southeast Louisiana which generally ranged in length from 100 to 400 feet, over various size rivers and creeks. ***Leads technical reviews*** pertaining to selection of design reaches, ***geotechnical design of pile foundations***, drivability, slope stability, settlement analyses, construction testing program recommendations, and report preparation in accordance with LADOTD guidelines.
02/20 – Ongoing	**DESIGN SUPPORT SERVICES LA 23, BELLE CHASSE BRIDGE & TUNNEL: Plaquemine Parish, LA.** *Project Engineer/Laboratory Director.* Ardaman's scope consists of review and acceptance of all geotechnical services including technical design reports, field documentation, drawings, and RFI's for the P3 Project consisting of replacing the Belle Chasse bridge and tunnel. In addition, Ardaman performs acceptance verification sampling and testing during the construction for soils and concrete. Assisted in ***review and acceptance of geotechnical services as well as quality control*** and review of all acceptance verification sampling and testing during construction.
10/15 – Ongoing	**PECUE LANE I-10 INTERCHANGE: East Baton Rouge Parish, LA.** *Project Manager*. This project consists of twin bridges with MSE wall abutments for both bridges crossing Interstate I-10, a bridge crossing Ward's Creek, and on/off-ramps in south Baton Rouge. Managed all aspects of the project that included field investigations, laboratory testing, and engineering design. Performed analyses including ***settlement estimates*** with recommendations for monitoring, driven pile design including down drag considerations, ***MSE Wall design***, slope stability and pavement section recommendations; all completed according to DOTD standards. She is currently assisting with the field construction monitoring.
10/09 – Ongoing	**I-20 MISSISSIPPI RIVER BRIDGE REVIEW: Vicksburg, MS.** *Project Manager.* Manages this multi-million-dollar, highly technical project consisting of investigating movement of the I-20 Bridge in Vicksburg, MS. Managed and personally oversaw a comprehensive laboratory testing program and was involved in refining the geotechnical site characterization for the bank/bluff where there was evidence of ***shifting creating movement in the bridge structure***. The specialized testing, performed or managed included x-ray diffraction, x-ray scanning to identify existing shearing planes and stress-reversal direct shear tests to determine true residual angles of critical strata. Instrumental in designing the geotechnical instrumentation program for this project including vibrating wire piezometers, Casagrande type piezometers, SAA inclinometers, and traditional inclinometers. ***Performed seepage and drawdown analyses***, slope stability analyses, evaluation of remedial measures including design and evaluation of large foundation structures and developed technically feasible solutions to ***mitigate ground movement***. Co-authored the geotechnical analysis and design report. Currently overseeing the comprehensive monitoring program.
09/22 – Ongoing	**EVANGELINE ROAD & CN RAILROAD CULVERT: St. Charles Parish, LA.** *Project Engineer*. Ardaman completed subsurface exploration and geotechnical engineering evaluation. The project consists of the installation of two reinforced concrete box culverts (RCBCs) on the north and south sides of the CN Railroad as it crosses over Evangeline Road near Montz, Louisiana in St. Charles Parish. ***Ardaman performed the geotechnical fieldwork and engineering evaluation*** including recommendations for site preparation, shoring and bedding recommendations, and pavement design in a final report.
07/23 – Ongoing	**US 371: KCS RAILROAD OVERPASSES HBI: Webster Parish, LA.** *Project Engineer.* The project consists of construction of three bridges for US 371 KC Railroad overpasses that replaced two parallel bridges and one standalone bridge. Ardaman performed the geotechnical investigation and engineering analysis for drilled shafts and made advanced test shaft recommendations.

Firm employed by. Ardaman & Associates, Inc.				Meet MPR Nos. 6 & 7
Name	**Robert Jewell, PE**		Years of relevant experience with this employer	18
Title	Geotechncal Engineer		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization			BS / 2009 / Civil Engineering	
Active registration number / state / expiration date			PE. 38579 / LA / Exp. 09/30/2026 Traffic Control Supervisor / LA / 08/23/2028 DOTD Flagger / LA / Exp. 07/31/2029	
Year registered	2013	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities			**Geotechncal Engineer**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Jewell serves as the Manager of our Baton Rouge office and has over 15 years of experience with design and analyses of countless types of foundations including shallow, embankment settlement analysis, deep foundations (pile and drilled shafts), LRFD design, FHWA & GEC design, slope stability (embankment and excavation) and earth retaining structures. He has managed and coordinated many geotechnical field investigations, including shallow and deep borings, CPT soundings, and performed analyses and prepares design recommendation reports for LADOTD projects. Mr. Jewell has extensive experience in construction phase testing and oversight including dynamic and static testing, pile integrity testing, cross hole sonic logging, settlement monitoring, and geotechnical instrumentation. In particular, he has over 15 years of experience performing, analyzing, and reporting for PDA testing.
07/23 – Ongoing	**MRB SOUTH GBRL: LA 1 TO LA 30 CONNECTOR: West Baton Rouge, Iberville, Ascension, and East Baton Rouge Parishes, LA.** *Project Manager*. The project consists of an Enhanced Planning investigation into S.P. No. H.013284, MRB South GBR: LA 1 to LA 30 Connector, with the objective of constructing a new ***Mississippi River crossing located between the I-10 and LA 70 River crossings from three proposed alignments***. Managed supervision of the field program, development of the laboratory testing program, quality control review, and development of an interactive geotechnical database to compile all the soil borings and ECPT. Helped oversee the preliminary engineering analyses which included caisson design, driven piles, drilled shafts, embankments, proposed alignment comparisons, environmental concerns, and testing program recommendations. A data report and preliminary geotechnical assessment report were submitted.
07/21 – Ongoing	**I-10: LA 415 TO ESSEN LANE ON I-10 & I-12 (CMAR): Baton Rouge Parish, LA.** *Project Manager.* The project consists of a Construction Management at Risk (CMAR) project which includes widening of the east and westbound lanes, elevated structures, interchanges, and ramps along I-10 from LA 415 in West Baton Rouge Parish to Essen Lane on I-10 and I-12 in East Baton Rouge Parish spanning approximately 2.5 miles. Currently oversee all aspects of engineering analyses pertaining to selection of design reaches, ***geotechnical design of deep foundations***, earth retaining structures, slope stability, soil-structure interaction with existing structures and load testing recommendations.
09/22 – Ongoing	**EVANGELINE ROAD & CN RAILROAD CULVERT: St. Charles Parish, LA.** *Project Manager.* Ardaman completed subsurface exploration and geotechnical engineering evaluation. The project consists of the installation of two reinforced concrete box culverts (RCBCs) on the north and south sides of the ***CN Railroad*** as it crosses over Evangeline Road near Montz, Louisiana in St. Charles Parish. Ardaman performed the geotechnical fieldwork and engineering evaluation including recommendations for site preparation, shoring and bedding recommendations, and pavement design in a final report.

07/23 – Ongoing	**US 371: KCS RAILROAD OVERPASSES HBI: Webster Parish, LA.** *Project Manager.* The project consists of construction of three bridges for US 371 KC Railroad overpasses that ***replaced two parallel bridges*** and one standalone bridge. Ardaman performed the ***geotechnical investigation and engineering analysis for drilled shafts and made advanced test shaft recommendations***.
04/21 – Ongoing	**RURAL BRIDGE INITIATIVE PHASE II: West Feliciana, East Feliciana, Livingston, St. Bernard Parishes, LA.** *Project Manager*. The project consists of the replacement of multiple small two-lane bridges throughout rural areas of Southeast Louisiana which generally ranged in length from 100 to 400 feet, mainly over small rivers, and creeks. Oversees all aspects of engineering analyses pertaining to selection of design reaches, ***geotechnical design of pile foundations***, drivability, slope stability, settlement analyses and construction testing program recommendations.
10/18 – 11/21	**I-220 / I-20 INTERCHANGE IMPROVEMENT AND BARKSDALE AIR FORCE BASE ACCESS ROAD: Bossier Parish, LA.** *Project Manager*. This was a Design Build project which provides direct access to Interstate I-20 from the Barksdale Air Force Base (BAFB) and constructing an interchange and access road from Interstate 20 in Bossier City, Louisiana. Managed and oversaw the preparation of the preliminary design and planning report. Also oversaw the field construction ***services consisting of PDA monitoring***, bi-directional load cell load tests, and settlement monitoring.
10/15 – Ongoing	**PECUE LANE I-10 INTERCHANGE: East Baton Rouge Parish, LA.** *Project Engineer*. This project consists of twin bridges with ***MSE wall abutments for both bridges crossing Interstate I-10***, a bridge crossing Ward's Creek, and on/off-ramps in south Baton Rouge. Helped perform analyses including settlement estimates with recommendations for monitoring, driven pile and drilled shaft design including down drag considerations, ***MSE Wall design, slope stability and pavement section*** recommendations; all completed according to DOTD standards.
07/15 – Ongoing	**I-49 CONNECTOR (LAFAYETTE REGIONAL AIRPORT TO I-10/I-49/US 167 INTERCHANGE): Lafayette Parish, LA.** *Project Manager*. The project consists of construction of 5 miles of freeway consisting of a 3.5-mile elevated structure from I-10 to the Airport in Lafayette, LA. Oversaw the completion of the Phase I geotechnical investigation, which included 116 deep and shallow soil boring, and 15 CPT soundings, and laboratory testing program ***per LADOTD guidelines***. Oversaw the completion of the Geotechnical Data Report and assisted with technical reviews pertaining to selection of design reaches, geotechnical design of pile and drilled shaft foundations, drivability, slope stability, earth retaining structures, settlement analyses and construction testing program recommendations, including an advanced test pile program.
04/14 – Ongoing	**I-12 TO BUSH SEGMENT 2, LA 3241 (LA 36-LA435): St. Tammany Parish, LA.** *Project Manager.* Oversaw and coordinated the geotechnical investigation which included drilling 32 deep soil borings, 10 culvert borings, and 88 shallow roadway borings, sampling, and laboratory testing along the alignment which includes two bridges: LA 435 over Bayou Lacombe Tributary and LA 36 over Bayou Lacombe Tributary 2. Assisted in developing the geotechnical analyses and design recommendation report which included pile foundations for the bridge structures and shallow foundation design for the culverts. Oversaw the construction phase which ***included PDA testing and settlement monitoring***.
10/09 – Ongoing	**I-20 MISSISSIPPI RIVER BRIDGE REVIEW: Vicksburg, MS.** *Project Engineer*. Assisted in several aspects of engineering for this ***multi-million-dollar, high risk, high technical needs***, high visibility project consisting of investigating ***movement of the I-20 Bridge in Vicksburg***, MS. This project consisted of a comprehensive laboratory testing program and refinement of the geotechnical site characterization for the bank/bluff where there was evidence of shifting creating movement in the bridge structure. Helped managed the field investigations and instrumentation programs, along with review of the field data and engineering reporting.

Firm employed by.	Ardaman & Associates, Inc.		
Name	**Mark Woodward, PE**	Years of relevant experience with this employer	7
Title	Geotechncal Engineer	Years of relevant experience with other employer(s)	36
Degree(s) / Years / Specialization		MS / 2019 / Risk Management MS / 1986 / Civil Engineering BS / 1982 / Civil Engineering	
Active registration number / state / expiration date		PE. 24206 / LA / Exp. 9/30/2025	
Year registered	1991	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Principal Geotechncal Engineer**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Woodward served as a geotechnical engineer for 36 years in the geotechnical branch of USACE New Orleans District, retiring as the Deputy Chief of the Geotechnical Branch and Dam and Levee Safety Program Manager. He was responsible for managing all departments in the branch including engineering, drilling, soils laboratory, dredge material testing, concrete testing, and administration. Mr. Woodward has considerable experience designing and managing various types of projects on the Mississippi River, Atchafalaya Basin and Storm Surge Levees in Southeast Louisiana, Mississippi and Texas, as well as mitigation and coastal projects in Louisiana. These projects included design of major foundation elements for dams, earthen levees, hydraulic structures, floodwalls, revetments, channel stabilization, bank degrading. ground improvement, deep excavations, relief wells, wick drains, dewatering systems, seepage and stability berms, preloads, reinforced levees and marsh creation for mitigation, coastal restoration and protection and beneficial use of dredge material in marsh and coastal environments with field investigations requiring use of specialized marine and marsh drilling equipment. Since 2018, Mr. Woodward has served as Principal Geotechnical Engineer of Ardaman for Louisiana, Mississippi, Alabama, Arkansas, and Texas. Mr. Woodward provides oversight and review of design major foundation elements for transportation, industrial, commercial, and municipal projects.
04/21 – 01/2025	**RURAL BRIDGES PHASE I: Claiborne Parish, LA.** *Principal Engineer*. The Rural Bridges project initiative consists of replacing many older bridges throughout the State of Louisiana. Provided review of the geotechnical design including pile foundations for 3 bridges.
01/19 – 12/23	**CHENIERE SPILLWAY & BRIDGE REPLACEMENT: Ouachita Parish, LA.** *Principal Engineer.* Served as the ***Principal Engineer*** for this project which included the replacement of the current damaged spillway and bridge structure in Ouachita Parish, Louisiana.
10/18 – 11/21	**I-220 I-20 INTERCHANGE IMPROVEMENT AND BARKSDALE AIRFORCE BASE ACCESS ROAD: Bossier Parish, LA.** *Principal Engineer.* This ***Design Build project*** consisted of direct access to Interstate I-20 from the Barksdale Air Force Base (BAFB) and an interchange and access road from Interstate 20 in Shreveport, Louisiana. Provided quality assurance oversight for this project, reviewing the work during the design and construction phase.
05/18 – 08/19	**I-12 WIDENING (US 190 to LA 59): St. Tammany Parish, LA.** *Principal Engineer.* Provided technical oversight for this project which included the ***widening of I-12 in St. Tammany Parish***. Ardaman conducted a geotechnical investigation which included 23 deep soil borings, sampling, and laboratory testing along the 3-mile alignment between US 190 and LA 59 for lane

	widening which included four bridges structures. Provided oversight to perform additional soil borings, lab testing and engineering analyses for a retaining wall for one of the bridge abutments
07/23 – Ongoing	**US 371: KCS RAILROAD OVERPASSES HBI: Webster Parish, LA.** *Principal Engineer*. The project consists of construction of three bridges for US 371 KC Railroad overpasses that ***replaced two parallel bridges and one standalone bridge***. Ardaman performed the geotechnical investigation and engineering analysis for drilled shafts and made advanced test shaft recommendations.
05/18 – 08/19	**I-12 WIDENING (US 190 to LA 59): St. Tammany Parish, LA.** *Principal Engineer.* Provided technical oversight for this project which included the ***widening of I-12 in St. Tammany Parish***. Ardaman conducted a geotechnical investigation which included 23 deep soil borings, sampling, and laboratory testing along the 3-mile alignment between US 190 and LA 59 for lane widening which included four bridges structures. Provided oversight to perform additional soil borings, lab testing and engineering analyses for a retaining wall for one of the bridge abutments
05/18 – 09/19	**US 190: LA 437 TO USE 190 BUS (PH 1): St. Tammany Parish, LA.** *Principal Engineer.*Provided technical oversight for this project which includes the widening of US 190 to a four-lane boulevard between US 437 and US 190.
05/18 – 07/18	**IMTT ACCESS ROAD PAVEMENT, AVONDALE: Jefferson Parish, LA.** *Principal Engineer*. Served as Senior Engineer for 2,200-foot-long x 50 -foot wide rigid and flexible roadway design for ***AASHTO loading per LADOTD guidelines***, including subsurface exploration and testing, California Bearing Ratio, subbase material and thickness recommendations, wearing course thicknesses, and construction recommendations.
06/16 – 07/16	**SOUTHEAST LOUISIANA URBAN FLOOD CONTROL, LOUISIANA AVENUE PAVING: Orleans Parish, LA.** *Chief of Structural Design.* Served as decision maker as ***Chief of Structural Design,*** USACE New Orleans, for asphalt or concrete paving, looking at factors such as construction cost, durability, maintenance cycles and costs, constructability, construction duration, etc.
2014 – 2018	**DAM AND LEVEE SAFETY PROGRAM, USACE NEW ORLEANS DISTRICT: LA.** *Dam and Levee Safety Program Manager*. Served as the USACE New Orleans District Levee Safety Program Manager for over four years, responsible for Levee Evaluation Reports for Levee Certifications and the National Flood Insurance Program, Levee Inspection Reports on over 1300 miles of levee on an annual basis, Risk Assessments and Communication for all levees in the District's jurisdiction. Responsible for final Section 408 permitting approval to ensure that construction activities do not increase risk or diminish function of levees and do not cause harm to the public.
2006	**HOMEPLACE LEVEE WITH GROUND IMPROVEMENT, P24: Plaquemines Parish, LA.** *Lead Geotechnical Engineer.* In the aftermath of Hurricane Katrina, was assigned to ***USACE Task Force Guardian as Geotechnical Engineer*** for Plaquemines Parish to restore levee damage to pre-Katrina conditions. The Homeplace Floodwall had translated due to loading and had to be removed. In order to replace the risk reduction system with an earthen levee, the foundation had to be improved. Using knowledge gained from full scale test section had coordinated pre-Katrina for Deep Mixing. Designed ground improvement and reviewed/ approved all construction submittals and oversaw construction.

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Name	**Ari Deitch, PE, PTOE, PTP, RSP1**	Years of relevant experience with this employer	11
Title	Senior Transportation Engineer	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization		BS / 2012 / Biological Engineering, Louisiana State University	
Active registration number / state / expiration date		PE.0041842 / LA / Exp. 03/2026; PTOE #4346 / USA / Exp. 11/2026 PTP #690 / USA / Exp. 07/2028; RSP #37 / USA / Exp. 12/2027	
Year registered	2018	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Traffic Engineering**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Deitch is a Senior Traffic Engineer specializing in traffic engineering and design, safety, transportation management, and conceptual roadway design. Mr. Deitch has experience managing and working on projects for LADOTD and the City of Baton Rouge, as well as other DOTs across the country, pertaining to NEPA studies, interchange modification / justification reports, Stage 0 feasibility studies, transportation management plans, traffic, and safety studies pedestrian and bicycle improvements, access management, signal design, and signing and marking design. He has experience and proficiency in IHSDM, SYNCHRO, VISTRO, VISSIM, SIDRA, GuidSIGN, HCS and MicroStation software. Mr. Deitch has completed LADOTD Traffic Engineering Process and Report Training.
02/22 – Ongoing	**I-10 Calcasieu River Bridge P3 (Calcasieu Parish, LA).** *Traffic Engineer* for the I-10 Calcasieu Bridge Replacement P3 project to ***replace the existing I-10 bridge over the Calcasieu River with a new bridge north of I-10.*** The project also includes the construction of ***several new bridge structures*** within the project limits, both inside and outside widening of I-10, improvements and modifications to existing interchanges, and improvements to other associated roadways within the project limits. Ari's rold in the project involves traffic engineering, including the development of a Transportation Management Plan (TMP) and the design of permanent signage, signals, and pavement markings.
11/20 – Ongoing	**I-10 CMAR, LADOTD East Baton Rouge Parish, LA.** *Traffic Engineer*. Projet includes improvements on Interstate 10 through widening and reconstruction of the mainline from 3 to 4 lanes in each direction, including ***bridge replacement and rehabilitation***, interchange and ramp modification, shoulder widening, and auxiliary lane(s) from LA 415 to Essen Lane on I-10 and I-12. Responsible for wide range of traffic engineering tasks including development of permanent signing plans, Interchange Modification Reports, and Transportation Management Plans for the widening of I-10 from LA 415 to Essen Lane and improvements to interchanges along this segment.
01/19 – 05/20	**US 90 Ramps at LA 88 Roundabouts, Iberia Parish, Louisiana.** *Transportation Engineer.* Assisted with permanent signing and striping components of ***roadway safety design plans*** for proposed roundabouts.
07/14 – Ongoing	**Pete's Highway Traffic Study and Environmental Assessment, LADOTD, Denham Springs, LA.** *Traffic Engineer.* Responsible for ***traffic analysis*** of proposed alternatives using Vissim software. Played a key role in the development of preliminary roadway design drawings incorporate Complete Streets. Work involved completing an Environmental Assessment ***and Line and Grade*** and providing traffic engineering services related to improving operations and safety along Range Avenue at the I-12 interchange. Developed an Interchange Modification Report including traffic study results and responses to FHWA Policy Points.

02/23 – 05/24	**District 04 Pedestrian Safety Improvements, LADOTD, Caddo and Bossier Parish, LA.** *Project Manager*. Responsible for contract management and technical advisory for this Stage 0 Feasibility study to ***develop and evaluate safety countermeasures*** to address pedestrian safety needs on 7 corridors within Caddo and Bossier Parish. The study methodology was similar to that of a Road Safety Assessment, and included historical crash analysis and on-site field reviews to identify pedestrian safety needs. Countermeasures were developed in close coordination with project stakeholders including City of Bossier, City of Shreveport, NLCOG, Downtown Development Distriction, and District 04. Stakeholders also participated in virtual and on-site field reviews. Study data, methods, and results were documnted in a Stage 0 Feasibility Reports were completed for all 7 study corridors with Preliminary Scope and Budget Checklist and Environmental Checklist. Performed ***benefit-cost analysis*** to aid in prioritizing the implementation of countermeasures.
04/16 – 09/18	**New Orleans Pedestrian Safety Improvements, LADOTD, Orleans Parish, LA.** *Project Manager.* Responsible for assessing existing and future safety deficiencies related to pedestrian and bicycle modes and selecting safety countermeasures for 20 high-risk locations. Developed ***design drawings*** for proposed short-term and long-term improvement phases and conducted ***benefit-cost analysis*** to inform project prioritization. Conducted safety analysis using Highway Safety Manual predictive methods. Organized and lead project stakeholder meetings to review alternatives, obtain feedback, and develop context sensitive solutions. Completed Stage 0 documentation including Preliminary Scope and Budget and Environmental Checklists for all 20 intersections.
04/16 – 10/19	**I-12 Hard Shoulder Running Feasibility Study and Preliminary Design, LADOTD, East Baton Rouge and Livingston Parishes, LA.** *Traffic Engineer.* Conducted ***traffic analysis*** using a calibrated microsimulation model to evaluate the operational performance of HSR and HOV lane alternatives. Developed ***conceptual drawings*** and ***construction cost estimates*** to evaluate the feasibility of proposed alternatives.
02/17 – 02/18	**I-49 Interchange Safety Improvements, LADOTD, Lafayette Parish, LA.** *Traffic Engineer.* Responsible for ***data collection and analysis***, ***traffic analysis***, and ***conceptual design drawings***. Purpose was to identify ***feasible improvement alternatives*** to address safety issues along the I-49 corridor at 3 interchanges. Participated in meetings with LADOTD HQ and District 03 team members to understand project needs and develop context sensitive solutions.
08/14 – 06/15	**LA 3235 Corridor Improvements, LADOTD, Lafourche Parish, LA.** *Traffic Engineer***.** Responsible for review of existing crash data and ***traffic operations analysis***, development of ***safety countermeasures***, conceptual drawings, and ***Stage 0 documentation***. Purpose of the project was to develop ***access management strategies*** and roadway improvements that will maintain and improve mobility, improve safety, support existing and future development along the corridor. Safety performance of alternatives were estimated using Highways Safety Manual predictive methods.
10/18 – 03/21	**LA 3040 Corridor Improvements, LADOTD, Houma, LA.** *Senior Traffic Engineer.* Study to identify safety and/or operational issues along 2.5 miles of Martin Luther King Boulevard (LA 3040) in Houma, LA to ***evaluate reasonable alternatives to address any deficiencies discovered***. Arcadis performed traffic analysis using Highway Capacity Software in accordance with LADOTD TEPR Requirement.
04/21 – 06/22	**Louisiana Strategic Highway Safety Plan Update, LADOTD, Statewide, LA.** *Project Manager.* Responsible for managing project tasks and deliverables that Arcadis is responsible for and ensuring QAQC protocols are performed. Arcadis is performing all crash data analysis tasks for the SHSP update, including a statistical analysis of existing emphasis areas and evaluating potential modifications to emphasis areas.

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Name	**Kester Hollier, PE, PTOE**	Years of relevant experience with this employer	4
Title	Senior Transportation Engineer	Years of relevant experience with other employer(s)	16
Degree(s) / Years / Specialization		BS / 2004 / Civil Engineering, Louisiana Tech University	
Active registration number / state / expiration date		PE.034304 / LA / Exp. 03/2027; PTOE #3928 / USA / Exp. 11/2027	
Year registered	2009	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Traffic Engineering**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Hollier has **20 years of experience in the field of transportation engineering** including **traffic engineering**, **signal timing and design**, **roadway design**, complete street improvement projects, roadway safety analysis and design, and **construction management** and inspection. Working on a wide variety of projects from the planning and conceptual phases to the design and construction phases, has given him the experience to help identify the needs and requirements for projects. This experience allows him to understand stakeholders ranging from local public agencies to state DOTs and helps provide expertise in achieving successful solutions for a variety of projects. He has experience and proficiency in traffic engineering and safety analysis software including IHSDM, SYNCHRO, VISTRO, VISSIM, SIDRA, GuidSIGN, HCS and MicroStation software.
09/12 – 02/16	**Stage 1 EA for Replacing Belle Chasse Tunnel and Bridge, LADOTD, Plaquemines Parish, LA.** *Traffic Engineer.* Responsible for the feasibility study and traffic analysis along LA 23 (Belle Chasse Highway) between LA 428 (Behrman Highway) and LA 406 (Woodland Highway) for ***multiple 6-lane bridge alternatives proposed to replace the existing Belle Chasse Tunnel and lift bridge over the Intercoastal Waterway***. These alternatives included 3%, 4%, and 5% bridge grades that modified roadway geometry and intersection location. Responsible for the review of roadway design and costs for the ***Line and Grade Study*** along with the review of the construction sequencing and traffic maintenance of the constructability review.
11/20 – Ongoing	**I-10 CMAR, LADOTD, East Baton Rouge Parish, LA.** *Project Manager*. Responsible for ***traffic engineering tasks*** including development of permanent signing plans, traffic signal plans, interchange modification reports, and transportation management plans for the widening of I-10 from LA 415 to Essen Lane and improvements to interchanges along this segment. Extensive historical crash and safety analysis is being performed in support of the IMR and TMP. One critical component of the project is maintaining traffic during the construction of new bridge structures. Multiple scenarios are being evaluated using a calibrated mesoscopic model to ***determine the impacts during construction and mitigations that will be necessary to minimize delay***.
12/17 – 11/19	**Causeway Boulevard Widening, Jefferson Parish, LA.** *Project Manager / Traffic Engineer*. Responsible for the ***traffic and safety study*** for the proposed widening of Causeway Boulevard between Metairie Rd. and West Esplanade Blvd. in Jefferson Parish, LA. Tasks included data collection, traffic volume redistribution, left-turn placement and ***turn bay storage length***, and existing traffic analysis and future traffic analysis of a preferred alternative.
11/17 – 07/20	**LA 466 (5th Street) Improvements Traffic Study, City of Gretna, Jefferson Parish, LA.** *Project Manager / Traffic Engineer*. Responsible for the traffic study and impacts for the proposed complete streets improvements along the LA 466 corridor

	between LA 23 and Richard St. in Gretna, Louisiana. Tasks included data collection along the corridor and at designated intersections, safety and crash analysis along the corridor, trip generation/land use and performing existing traffic analysis and future traffic analysis for proposed final alternative. The traffic study was prepared to follow the Louisiana Department of Transportation and Development's ***Traffic Engineering Process and Report Guidelines***. The project also included a stand alone pedestrian study along the corridor at designated intersection and the design of accessible pedestrian signals at signalized intersections.
07/21 – 07/22	**US 61: Cardinal Drive to Bert Street Safety Improvements, LADOTD, St. John the Baptist Parish, LA.** *Traffic Engineer*. Assisted with the development of a Stage 0 Feasibility and Safety Study for the US 61 Corridor in LaPlace, LA. Responsible for ***traffic and safety analysis*** tasks for existing, no-build, and build conditions. Analyis was performed using HCS. Purpose of the study was the ***develop and evaluate feasible alternatives*** that would address operational and safety needs along the corridor.
06/13 – 04/14	**US 190 Roundabout and Ped Improvements, LADOTD, St. Tammany, LA.** *Traffic Engineer*. Responsible for roundabout ***geometric design*** and ***pedestrian and bike path design*** along the US 190 corridor in the City of Slidell and St. Tammany Parish to improve safety for motorized and non-motorized roadway users.
05/14 – 08/20	**Causeway Blvd. at Earhart Expwy. Interchange, LADOTD, Jefferson Parish, LA.** *Traffic/Civil Engineer*. Responsible for the design of ***traffic control and construction sequencing***, ***pavement marking layout***, quantity analysis, ***cost estimates***, and quality control for a new interchange at LA 3139 (Earhart Expwy.) and LA 3046 (Causeway Blvd.) in Jefferson Parish, LA. Provided review for the interchange traffic sign and traffic signal timings and design. Identified all necessary ***design waivers and design exceptions*** required for LADOTD approval. Provided ***geometric layout design***, typical section design and review, and joint layout design for several interchange ramps and underpasses.
10/18 – 01/19	**LA 22 Traffic Circulation and Corridor Analysis, NORPC, St. Tammany Parish, LA.** *Traffic Engineer*. Responsible for the ***development of three future alternatives*** along Northshore Boulevard between I-12 and US 190 in Slidell, LA. Managed the data collection process and peak period observations to determine existing traffic patterns as well as the safety analysis along the corridor. Developed three alternatives that used a combination of traffic signal retiming, J-turns, and roundabouts to provide better ***access management*** along Northshore Boulevard as well as improve traffic flow in the corridor for current and proposed future conditions with consideration given to proposed future developments using trip generation and land use analysis.
05/09 – 07/13	**LA 23 Widening (Lapalco Blvd. – Engineers Rd.), LADOTD, Jefferson and Plaquemines Parishes, LA.** *Traffic/Civil Engineer*. Responsible for the roadway design and geometrics for the widening of LA 23 in Jefferson and Plaquemines Parishes between Lapalco Blvd. (LA 428) and Engineers Rd. (LA 3017). Developed ***traffic analysis*** for the ***traffic signal timing*** and ***required turn bay lengths*** at intersections. Developed traffic signing plans, pavement marking layouts and temporary traffic control plans.
10/10 – 7/15	**Barriere Road Feasibility Study/Traffic Study, US Department of Defense, Plaquemines Parish, LA.** *Civil/Traffic Engineer.* Responsible for the geometric layout and design of the realignment alternatives of Barriere Rd. between LA 23 to the US Naval Air Station. Developed and reviewed ***traffic analysis*** for arrival and departure patterns for the South US Naval Air Station entrance gates.

Firm employed by. ARCADIS

Name	**Max Aguirre, PhD, PE, PTOE, RSP2I**	Years of relevant experience with this employer	6
Title	Transportation Engineer	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization		PhD / 2018 / Engineering Science, LSU MS / 2015 / Construction Management, LSU BS / 2013 / Civil Engineering, LSU	
Active registration number / state / expiration date		PE. 47579 / LA / 09/30/ 2027; PTOE #5291 / USA / Exp. 7/2028; RSP2I #182 / USA / Exp. 7/2027	
Year registered	2023	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Traffic Engineering**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Dr. Aguirre is a Professional Engineer specializing in **traffic engineering studies and design**. Dr. Aguirre has experience working on projects for Louisiana Department of Transportation and Development (LADOTD) pertaining to traffic and safety studies, Stage 0 feasibility studies, pedestrian and bicycle improvements, **permanent signing design**, **signal design**, and NEPA studies. He is also familiar with the Highway Capacity Manual, Highway Safety Manual, MUTCD, and AASHTO "Green Book". Dr. Aguirre is also knowledgeable in the application of several software programs including Interactive Highway Safety Design Model, SYNCHRO, Highway Safety Software (HSS), GuidSIGN, HCS and MicroStation software.
02/23 – Ongoing	**Cross Bayou Bridge Replacement, LADOTD, Caddo Parish, LA.** *Traffic Engineer.* Conducted feasibility study to ***develop and evaluate alternatives for the replacement of two existing bridges over Cross Bayou.*** Developed Stage 0 Documentation including Preliminary Scope and Budget and Environmental Checklists. The next phase of the project will be conducted under the same contract and will include the development of construction plans.
11/20 – Ongoing	**I-10 CMAR, LADOTD, East Baton Rouge Parish, LA.** *Traffic Engineer*. Assisting in ***traffic engineering*** tasks including development of permanent signing plans, Interchange Modification Reports, and Transportation Management Plans for the widening of I-10 from LA 415 to Essen Lane and improvements to interchanges along this segment. Assisted in the development of existing condition safety analysis including tasks such as crash data analysis, collision diagrams, and crash report documentation.
09/19 – Ongoing	**I-49 (Ricohoc to Berwick) Supplemental Environmental Impact Assessment, LADOTD, St. Mary Parish, LA.** *Traffic Engineer*. Assist in project tasks involving planning and evaluation of different ***interchange alternatives*** and their ***geometric design, socio-economic impacts, mobility impacts, and environmental impacts***.
12/19 – Ongoing	**MoveBR Bluebonnet Blvd (Perkins Road to Picardy Avenue), City of Baton Rouge, East Baton Rouge Parish, LA.** *Traffic Engineer.* The purpose of the project is to widen Bluebonnet Blvd from 4 lanes to 6 lanes between Perkins Road and Picardy Avenue. Responsible for assisting with the ***development of a traffic design study to develop proposed improvements and project design*** to maximize operational and safety benefits. Responsible for assisting with the ***development of signal design and timing plans*** at 7 intersections within the project limits.

01/21 – Ongoing	**MoveBR Lee Drive (Highland Road to Perkins Road), City of Baton Rouge, East Baton Rouge Parish, LA.** *Traffic Engineer.* The purpose of the project is to provide ***capacity improvements and ped/bike accommodations*** along Lee Drive. Responsible for assisting with ***developing a traffic design study*** to ***evaluate and identify the preferred alternative***, and ***developing signal design*** at the intersections of Highland Road, Boone Drive, and Hyacinth Avenue.
10/19 – 07/21	**I-10 New Orleans to Slidell Hard Shoulder Running Feasibility Study, LADOTD, Orleans Parish, LA.** *Traffic Engineer*. Purpose of the project was to evaluate the ***feasibility*** of implementing HSR lanes along I-10 to alleviate existing bottlenecks and congestion along critical segments of the corridor. Developed ***conceptual drawings and typical sections***, crash analysis, and predictive safety analysis for proposed Hard Shoulder Running (HSR) alternatives on I-10 between New Orleans and Slidell. Developed ***benefit-cost analysis*** for Preliminary Scope and Budget and Environmental Checklists.
02/23 – 05/24	**District 04 Pedestrian Safety Improvements, LADOTD, Caddo and Bossier Parish, LA.** *Traffic Engineer*. Responsible for conducting all traffic and safety tasks needed for this Stage 0 Feasibility study to develop and evaluate safety countermeasures to address pedestrian safety needs on 7 corridors within Caddo and Bossier Parish. The study methodology was similar to that of a Road Safety Assessment, and included historical crash analysis and on-site field reviews to identify pedestrian safety needs. Countermeasures were developed in close coordination with project stakeholders including City of Bossier, City of Shreveport, NLCOG, Downtown Development Distriction, and District 04. Stakeholders also participated in virtual and on-site field reviews. Study data, methods, and results were documnted in a ***Stage 0 Feasibility Reports*** were completed for all 7 study corridors with ***Preliminary Scope and Budget Checklist*** and ***Environmental Checklist.*** Performed ***benefit-cost analysis*** to aid in prioritizing the implementation of countermeasures.
10/18 – 03/21	**LA 3040 Corridor Improvements, LADOTD, Houma, LA.** *Traffic Engineer.* Study to identify safety and/or operational issues along 2.5 miles of Martin Luther King Boulevard (LA 3040) in Houma, LA to ***evaluate reasonable alternatives to address safety and operational needs***. Responsible for performing traffic analysis using Highway Capacity Software in accordance with LADOTD TEPR Requirement.
09/19 – 06/21	**Baton Rouge Pedestrian and Bicycle Safety Action Plan and Road Safety Assessments, LADOTD, East Baton Rouge Parish, LA.** *Traffic Engineer*. Assisted with the ***assessment of existing and future safety deficiencies*** related to pedestrian and bicycle modes at identified high-risk intersections and segments in East Baton Rouge Parish. Assisted with the development of ***screening criteria*** to identify high priority locations with a history of pedestrian and/or bicycle crashes. Assisted in the development of ***Road Safety Assessments (RSAs)*** at 10 priority locations to identify and evaluate safety deficiencies and develop safety countermeasures to improve safety for pedestrians and bicyclists. Evaluated alternatives to ***determine and document the feasibility of proposed countermeasures***. Developed ***benefit-cost analysis*** to prioritize implementation of proposed improvements.
08/19 – 02/20	**US 61 Access Management and Corridor Improvements (Airline Hwy), LADOTD, East Baton Rouge Parish, LA.** *Traffic Engineer*. Project purpose was to evaluate the effectiveness of proposed ***access management improvements*** along US 61 and identify feasible alternatives to ***maximize operational and safety benefits***. Evaluated the need for pedestrian and bicycle accommodations based on historical crash data and adjacent land use. Assisted in conducting ***traffic analysis*** and the development of ***benefit-cost analysis*** to compare the effectiveness of the proposed alternatives.

Firm employed by. ARCADIS

Name	**Jason Morrell, PWS**	Years of relevant experience with this employer	9
Title	Senior Environmental Planner / Ecologist	Years of relevant experience with other employer(s)	13
Degree(s) / Years / Specialization		BS / 1999 / Agriculture, University of Georgia	
Active registration number / state / expiration date		Professional Wetland Scientist – #2319 / USA / Exp. 04/2028 NHI Course No. 142005, NEPA and Transportation Decision Making	
Year registered	2013	Discipline	Wetland Science
Contract role(s) / brief description of responsibilities		**Environmental**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Morrell has more than **22 years of experience in environmental planning**, including over 18 years of consulting experience. Prior to joining Arcadis, he served as a NEPA Planner and Ecologist with the Georgia Department of Transportation (GDOT) evaluating environmental effects and **completing permitting and environmental documentation for transportation projects**. His area of expertise includes wetland delineation, biological assessment, and environmental permitting, with a focus on Clean Water Act Section 404 permitting and Section 7 Endangered Species Act (ESA) consultation. He is experienced working with the Federal Highway Administration (FHWA), US Army Corps of Engineers (USACE), US Fish & Wildlife Service (USFWS), and state resource agencies. Since 2011, Mr. Morrell has focused primarily on Transportation Ecology and is an active member of the Transportation Research Board Committee on Environmental Analysis and Ecology.
04/13 – 10/20	**LADOTD, US 11 Railroad Bridge Replacement and Corridor Improvements Environmental Assessment, St. Tammany Parish.** *Principal Planner*. Responsible for assisting with the development of the Environmental Document for proposed widening of US 11 between US 190 (Gause Boulevard) and I-12 in Slidell. Proposed improvements include the ***replacement of a bridge crossing the Norfolk Southern Railroad.*** This included technical studies to support the Environmental Assessment including wetlands and biological resource identification, Phase I Environmental Site Assessment, traffic noise and air quality analysis, socio-economic and community impact evaluation, and secondary and cumulative effects analysis.
02/23 – 05/24	**Safety Studies IDIQ - District 04 Pedestrian Safety Improvements, LADOTD, Caddo and Bossier Parish, LA.** *Environmental Planner*. Responsible for performing ***desktop and field environmental reviews*** to identify and document environmentaly sensitive areas. Purpose of study was to develop and evaluate safety countermeasures to address pedestrian safety needs on 7 corridors within Caddo and Bossier Parish. Study data, methods, and results were documnted in a ***Stage 0 Feasibility Reports*** were completed with ***Preliminary Scope and Budget Checklist*** and ***Environmental Checklist.***
04/23 – 01/25	**LA 22 Tchefuncte River Bridge Stage 0 Feasibility Study, LADOTD, St. Tammany Parish, LA.** *Environmental Planner.* Responsible for performing ***desktop and field environmental reviews*** to identify and document environmentaly sensitive areas. Purpose of project is to develop and evaluate feasible alternatives for the replacement of the LA 22 Tchefuncte River Bridge in Madisonville, LA. Environmental reviews were performed to identify any impacts to to the natural resources, historically significant locations, and community. All study methods and results were documented in a ***Stage 0 Feasibility Report*** with ***Preliminary Scope and Budget Checklist*** and ***Environmental Checklist.***
04/16 – Ongoing	**Pete's Highway Interchange Alternative and Environmental Assessment, LADOTD, Livingston Parish, LA.** *Ecologist*. Led a ***wetland delineation and protected species habitat assessment*** along Range Road in the vicinity of the I-12 interchange for

	the proposed interchange improvement project. Provided technical review of a Biological Resources and Wetland Findings Report, including required exhibits, in support of the NEPA ***Environmental Assessment***.
10/15 – 04/18	**North Bayou Black Drive/Hanson Canal Bridge (OSBP) – LADOTD, Terrebonne Parish, LA.** *Ecologist***.** Completed a technical review of the **Biological Resources and Wetland Findings Report**, including required exhibits, prepared for replacement of an off-system highway bridge. Findings from the wetland delineation report were used for a USACE Jurisdictional Determination and Section 404 permit application.
07/16 – 03/18	**Bayou Sara Streambank Restoration, West Feliciana Parish Department of Public Works, West Feliciana Parish, LA.** *Ecologist*. Project involved stabilizing the streambank along approximately 3,600 feet along Bayou Sara, where severe erosion is impacting the Town of St. Francisville's Wastewater Treatment Facility, pond levees, and the Parish's only access road (Ferdinand Street) to the Mississippi River. Completed a ***wetland delineation and protected species habitat assessment*** within the area proposed for bank stabilization, as well as adjacent staging and access areas. Provided technical review of a ***Biological Resources and Wetland Findings Report***, including required exhibits, and NWP 13 PCN, including permit sketches for bank stabilization for which ***USACE authorization was successfully obtained.***
09/19 – Ongoing	**Environmental Support Services IDIQ Contract, GDOT, Statewide, GA.** *Project Manager and Ecology Lead*. Responsible for management of embedded (support services) ecology and ***NEPA*** staff managing environmental studies on behalf of GDOT, including review of consultant documents. Design and develop ecology initiatives for the GDOT Office of Environmental Services (OES) including guidebooks and toolkits to update the ***Environmental Procedures Manual***, training materials for contractor prequalification, applications to streamline National Marine Fisheries Service Section 7 ESA and Essential Fish Habitat consultations, and other research initiatives.
07/14 – 07/19	**Statewide Ecology Services IDIQ Contract GDOT, Statewide, GA.** *Deputy Project Manager*. Responsible for managing embedded ecologists assigned management of ecology studies, permitting, and biological assessment for GDOT projects. Negotiated a menu of services task order for on-call ***environmental studies*** providing the client the flexibility to complete tasks quickly to meet project delivery schedules. Managed preparation and provided technical review of supporting ***NEPA documentation*** for federally funded ***infrastructure development and improvement projects.***
12/15 – 11/18	**Reisor Subdivision Bridge Replacements, Union Pacific Railroad, Natchitoches Parish, Louisiana and Caddo Parish, LA/Harrison County, TX.** *Lead Ecologist*. Responsible for ***wetland delineation and protected species habitat assessments*** for replacement of two structurally deficient railroad bridges on the Union Pacific Reisor Subdivision line. Completed ***wetland findings report***, including required exhibits, and calculated impacts to streams and wetlands for bridge replacements.
11/15 – 12/16	**SR 234 at Chickasawhatchee Creek Bridge Replacement GDOT, Calhoun and Dougherty Counties, GA.** *Lead Ecologist*. Responsible for ecology reporting, Section 404 permitting, and Section 7 Endangered Species Act (ESA) consultation for replacement of a load-limited, structurally deficient bridge over Chickasawhatchee Creek 8 miles north of Leary, GA. Prepared a Biological Assessment for the federally listed mussel species and designated critical habitat including development of special provisions to be included in contract documents for species protection. Based on this Biological Assessment, USFWS issued a Biological Opinion concurring with the recommended biological determination to support project ***NEPA documentation.*** Successfully obtained an Individual Section 404 Permit for stream and wetland impacts associated with bridge replacement and roadway approach improvements.

Firm employed by. ARCADIS			
Name	**Jan Hughes**	Years of relevant experience with this employer	2
Title	Senior Environmental Planner	Years of relevant experience with other employer(s)	25
Degree(s) / Years / Specialization		BA/ 1984 / Anthropology, Louisiana State University	
Active registration number / state / expiration date		N/A	
Year registered	N/A	Discipline	N/A
Contract role(s) / brief description of responsibilities		**Environmental**	

Experience dates	Experience and qualifications relevant to the proposed contract
	Ms. Hughes brings **27 years of experience with the LADOTD Environmental Section** overseeing the National Environmental Policy Act (NEPA) process for proposed transportation projects, as well as preparing NEPA, Section 106 of the National Historic Preservation Act, and Section 4(f) of the U.S. DOT Act documentation for FHWA and U.S. Coast Guard. She has taken NHI Course No. 142055, NEPA and Transportation Decision Making. Jan has primary responsibility for authoring NEPA documents, including the Airline Highway Environmental Assessment for FHWA for which a FONSI was issued, and the Oaklawn Bridge Categorical Exclusion Reevaluation approved by FHWA. In addition to the projects listed below, throughout her career Jan has provided oversight for numerous staff and consultant prepared NEPA documents for LADOTD and local entities. She has also coordinated with federal, state, and local agencies on other environmental issues. She has conducted **public involvement activities, including meetings and hearings.** Jan was a project team member in the development of the 2015 Louisiana Historic Bridge Inventory and Section 106 Programmatic Agreement for Treatment of Louisiana Historic Bridges.
02/23 – 05/24	**Safety Studies IDIQ - District 04 Pedestrian Safety Improvements, LADOTD, Caddo and Bossier Parish, LA.** *Environmental Planner*. Responsible for performing ***desktop and field environmental reviews*** to identify and document environmentaly sensitive areas. Purpose of study was to develop and evaluate ***safety countermeasures*** to address pedestrian safety needs on 7 corridors within Caddo and Bossier Parish. Study data, methods, and results were documnted in a ***Stage 0 Feasibility Reports*** were completed with ***Preliminary Scope and Budget Checklist*** and ***Environmental Checklist.***
04/24 – Ongoing	**I-20 Widening Monroe, LADOTD, Ouachita Parish, LA**. *Environmental Planner and Public Meeting Coordinator.* Assisted with required ***wetland studies*** and the development of a Wetlands Finding Report using the latest FHWA criteria. Assisted with the coordination and execution of a public meeting to obtain public and stakeholder input. ***Prepared public meeting report***.
11/22 – Ongoing	**US 11 Norfolk Southern Railroad, Route US 11, Environmental Assessment/FONSI, LADOTD, St. Tammany Parish, LA.** Coordinating with LADOTD regarding the reevaluation of the FONSI for proposed widening of US 11 between US 190 (Gause Boulevard) and I-12 in Slidell. Proposed improvements include the replacement of a bridge crossing the Norfolk Southern Railroad. This included technical studies to support the Environmental Assessment including wetlands and biological resource identification, Phase I Environmental Site Assessment, traffic noise and air quality analysis, socio-economic and community impact evaluation, and secondary and cumulative effects analysis.
4/23 – 4/23	**Airline Highway North (Florida Blvd to I-110), Route US 61, City of Baton Rouge and East Baton Rouge Parish, East Baton Rouge Parish, LA.** Assisted with preparation of the ***Stage 0 checklist*.**
10/22 – 05/23	**LA 16 (Pete's Highway)/I-12 Interchange, Route LA 16, Environmental Assessment, LADOTD, Livingston Parish, LA.** Coordinated with LADOTD to revise the draft Environmental Assessment to incorporate the rewritten construction phasing section of the document.

10/22 – 05/23	**Rural Bridges Initiative II, Districts 02, 03, 07, 61, and 62, LADOTD.** Reviewed and provided comments on draft ***Programmatic Categorical Exclusion*** documents for multiple projects.
02/94 – 08/98	**Airline Highway (US 61), Florida Boulevard to Just North of Jefferson Hwy., Environmental Assessment/FONSI, LADOTD, East Baton Rouge Parish, LA.** *LADOTD NEPA Lead.* Widening of this approximately 3.5-mile portion of Airline Highway from four lanes to six lanes. Responsible for handling the ***NEPA process*** and primary responsibility for authoring the Environmental Assessment with Programmatic 4(f) Statement for an adjacent park for FHWA for which a FONSI was issued.
01/11 – 05/15	**Bayou Teche Bridge at Oaklawn, Route LA 323, Categorical Exclusion Re-evaluation, LADOTD, St. Mary Parish, LA.** *LADOTD NEPA Lead.* Replacement of this historic, one lane, swing span bridge built in 1942 with a two-lane bridge on existing alignment. Responsible for handling the NEPA process and primary responsibility for authoring the ***NEPA document approved by FHWA***. Also handled the Section 106 Consulting Parties process, preparation of the Section 106 Memorandum of Agreement and Programmatic Section 4(f) Statement for adverse impact to the bridge, and the historic bridge marketing and draft agreement for LADOTD's first ownership transfer of a historic bridge to another entity for alternate use.
03/02 – 03/05	**Huey P. Long Bridge, Route US 90, Environmental Assessment, LADOTD, Jefferson Parish, LA.** *LADOTD NEPA Lead.* Widening of the highway portions of this historic highway/railroad bridge constructed in the 1930s from two 9-foot-wide lanes to three 11-foot-wide lanes. Responsible for oversight of the ***NEPA process*** and consultant preparation of the NEPA document for U.S. Coast Guard. Also handled coordination with the New Orleans Public Belt Railroad and Louisiana State Historic Preservation Officer and preparation of the Section 106 Memorandum of Agreement for the adverse impact to the historic bridge.
01/15 – 02/19*	**Inner Loop Extension (LA 3132), E. Flournoy Lucas Rd (LA 523) to Future I-69 Corridor, Environmental Assessment, LADOTD and City of Shreveport, Caddo Parish, LA.** *LADOTD NEPA Lead.* Extension of the Inner Loop on new alignment as a four-lane control of access facility from LA 523 to Future I-69 with interchanges and upgrades to adjacent roadways. Responsible for oversight of the ***NEPA process*** and consultant preparation of the Environmental Assessment for FHWA.
04/01 – 12/06	**I-49 South, Wax Lake Outlet to Berwick, Route US 90, Environmental Impact Statement/ROD, LADOTD, St. Mary Parish, LA.** *LADOTD NEPA Lead.* Upgrade of this 9.3-mile portion of US 90 to a four-lane facility with frontage roads meeting interstate standards. Responsible for oversight of the ***NEPA process*** and consultant preparation of the NEPA document for FHWA which was approved as a ROD.
04/01 – 10/05	**I-49 South, Lafayette Regional Airport to LA 88, Route US 90, Environmental Impact Statement/ROD, LADOTD, Iberia/Lafayette/St. Martin Parishes, LA.** *LADOTD NEPA Lead.* Upgrade of this 10.8-mile portion of US 90 to a six-lane facility with frontage roads meeting interstate standards. Responsible for oversight of the ***NEPA process*** and consultant preparation of the NEPA document for FHWA which was approved as a ROD.
07/15 – 02/19*	**I-49 South, I-10 to Lafayette Regional Airport, Route US 90/US 167, Supplemental Environmental Impact Statement (SEIS), LADOTD, Lafayette Parish, LA.** *LADOTD NEPA Lead.* Preparation of a SEIS that includes follow-up to commitments made in the 2003 Record of Decision (ROD) for the upgrade of this 5-mile portion of US 90/US 167 in urban Lafayette to a six-lane facility with frontage roads meeting interstate standards. Responsible for oversight of the ***NEPA process*** and the consultant NEPA work, which includes extensive public involvement. Also carried out the SEIS initiation process and re-initiation of the Section 106 process.

*Until retirement from LADOTD in February 2019.

Firm employed by. ARCADIS

Name	**Sean Markey, PE**	Years of relevant experience with this employer	9
Title	Subsector Sales Leader	Years of relevant experience with other employer(s)	8

Degree(s) / Years / Specialization			Certificate / 1999 / Railroad Maintenance & Engineering Certificate BS / 1993 / Civil Engineering
Active registration number / state / expiration date			PE. 75190 / FL / Exp. 02/28/2027
Year registered	2012	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities			**Railroad Coordination**

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Markey is a Senior Project Manager with considerable experience in the administration, project management, inspection, rehabilitation, design, review, and construction of various freight railroad, transit, traffic, and utility design projects. His experience includes the design of various freight rail related projects and passenger rail related projects including catenary systems, catenary structures, and passenger facilities. His career has also encompassed various pipeline design projects and multiple reviews of utility projects. He has reviewed many real estate agreement documents and assists in negotiations of new terms for the agreements. He has experience in the inspection of bridge structures, signal systems and, along with environmental assessment capabilities, has the ability to coordinate and manager inspection teams on larger scale projects. Many projects that he has been involved with have short schedules and involve coordination of multiple team disciplines to achieve the project goals.
01/14 – 12/15	**Norfolk Southern, South Raleigh Siding – Design & Environmental Monitoring, Raleigh, NC.** *Principal-in-Charge* for rail design for a new 7,000' siding. ***The design included realignment of nearly 2000' of mainline track*** to achieve required minimum clearances under the existing Tryon Road overhead bridge. New crash walls and soil nail walls were designed under the bridge. Wetland and buffer impacts were addressed by coordinating with local mitigation banks for purchase of required credits and obtaining approval from United States Army Corps of Engineers and North Carolina Department of Environment and Natural Resources.
01/12 – Ongoing	**Confidential Client, General Engineering Contract, Various Locations.** *Project Manager* responsible for administering the contract and leading the client interaction and team management of handling direct contact for the client with the Northeastern Public Projects Program. Responsibilities include management of personnel assigned, both office and field, along with attendance and representation of the client at meetings with project sponsors for projects in North Carolina, Virginia, West Virginia, Maryland, Pennsylvania, New York, Massachusetts, New Jersey, and the District of Columbia. Responsible for supplying Confidential Client with engineering support on emergency task orders and engineering task orders outside of the public projects area of the contract. Over 400 separate tasks are underway for the client.
01/13 – 01/17	**Confidential Client, Intermodal Container Transfer Facility (ICTF) Design Criteria Package and Construction Management Port of Jacksonville, FL.** *Design Project Manager* for the development of the design-build criteria package. This project involved creating a 30% design for a new intermodal container transfer facility connecting to Confidential Client Transportation for JAXPORT. Responsibilities included oversight and guidance of staff preparing the bid documents for the Design-Build team competition. Coordination of meetings with the client was also required throughout the ***design criteria*** period. Project included ***four intermodal processing tracks***, two support tracks, a run around track, crane ways for operating

	rubber-tired gantry cranes, roller compacted concrete travel lanes and trailer/chassis parking, administration building, maintenance building, inbound and outbound gate, structure, stormwater management facilities, yard lighting, site utilities and relocation of a city roadway and industrial rail spur track.
04/13 – 12/16	**Confidential Client, Bridge Raise, Jessup, MD.** *Project Manager* for bridge assessment and final design for providing double-stack clearance under the bridge. The existing structure handles approximately 80,000 vehicles daily and connects I-95 and the Baltimore-Washington Parkway. Structure was raised 10-inches. Arcadis performed a traffic study and developed plans for ***raising the existing bridge structure***. Coordination with Maryland State Highway Administration took place along with two counties that have interests in the bridge location. Six alternatives to raise the highway bridge on the existing alignment were developed. The final alternative selected had the least impact to the Town of Washington Grove.
01/07 – 12/15	**Confidential Client, National Gateway, Multiple Locations.** *Project Manager* for National Gateway Vertical Clearance Improvements—a $360M component of an $850M freight initiative. Led teams on scheduling, funding (TIGER, state, ARRA), design, and procurement for 64 vertical obstructions, including 13 mountain tunnels, Virginia Avenue Tunnel replacement (DC), and several highway bridges. ***Oversaw design-build package*** development, agency coordination, and weekly project reporting.
04/12 – 12/15	**Confidential Client, Plant Bowen Capacity Expansion, Stilesboro, GA.** *Project Manager* for design coordination and rail design for relocation of 2.25 miles of mainline track, construction of 0.40 miles of new bad order tracks, relocation of 0.57 miles of bad order tracks, construction of 2.18 miles of new industry track, relocation of 1.47 miles of industry track, construction of 8 #10 turnouts, raise and resurface one #10 turnout, construction of one new #15 turnout and relocation of one double switch point derail. The project included a new 146 LF double track concrete bridge structure over the environmentally sensitive Raccoon Creek as well as a concrete utility slab to protect an existing high pressure gas line in place.
04/12 – 12/15	**Confidential Client, Second Main Track and Crossover, Coxsackie, NY.** *Project Manager* for the concept planning and design of a second track from Milepost 121 to 129. This project involved the design of two new universal interlockings and two significant railroad bridge structures over Coxsackie Creek and Hannicrois Creek. Operational planning was performed to maintain railroad operation during the construction of the structures. Performed management of the project, client interface, and staff coordination. Permitting and property were both assessed and plans appropriately developed for both efforts.
01/03 – 12/03	**Philadelphia Belt Line Railroad, SugarHouse Casino Freight Rail Corridor Assessment, Philadelphia, PA.** *Project Manager* for the development of an impact assessment report for the construction of the SugarHouse Casino through an existing right-of-way for Philadelphia Belt Line Railroad off Delaware Avenue. Study included field assessment and development of alternatives for corridor viability in the future should construction be granted through the existing rights of the PBL. Study included development of cost for each alignment alternatives and a recommendation for the PBL for negotiations with SugarHouse Casino developers.

16 STAFF EXPERIENCE.

Firm employed by. ARCADIS

Name	**William Jansen, PE, LEED AP BD+C, ENV SP**	Years of relevant experience with this employer	3
Title	National Technical Manager / Freight Rail Planning & Development	Years of relevant experience with other employer(s)	18

Degree(s) / Years / Specialization		MS / 2004 / Civil Engineering, Iowa State University BS / 2002 / Civil Engineering, Iowa State University	
Active registration number / state / expiration date		E-12773 / NE / Exp No. 12/30/2025	
Year registered	2008	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		**Railroad Coordination**	

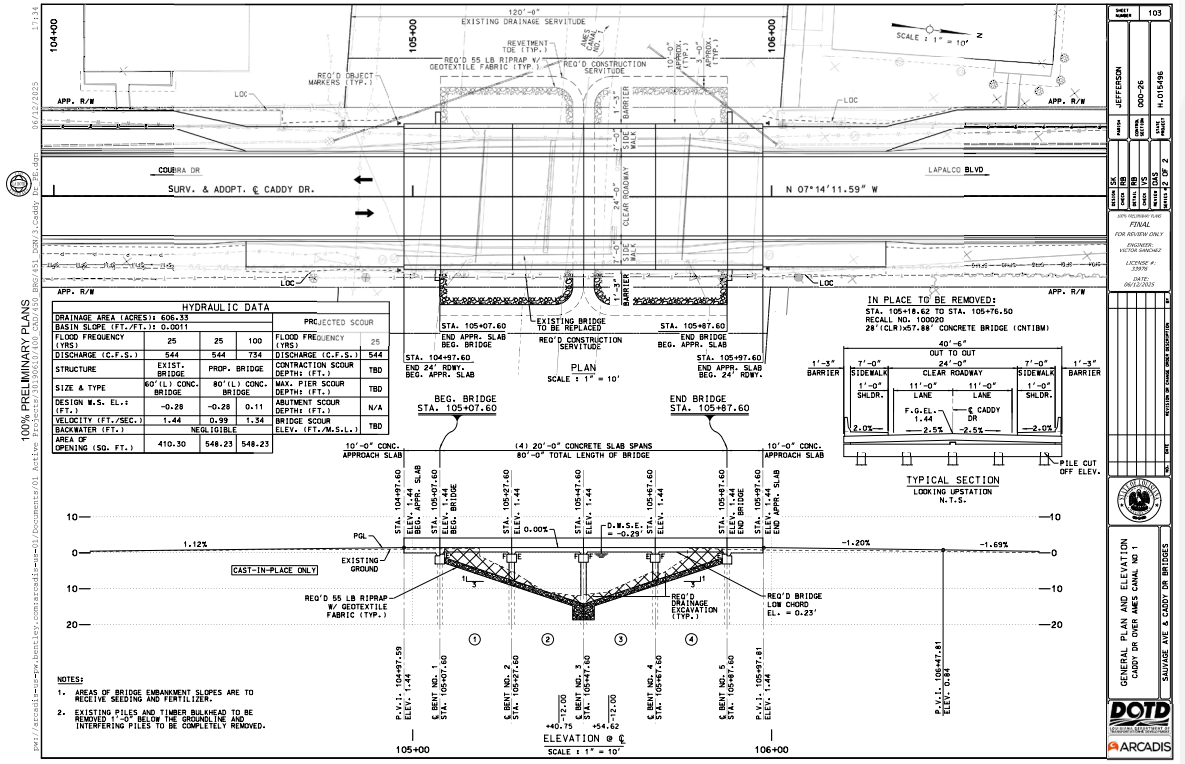
Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Jansen is a highly experienced Civil Engineer with over 20 years of expertise, predominantly within the rail industry. His extensive background involves projects of various scales for Class I railroads, regional and short-line railroads, industrial clients, and public-sector agencies. Proficient in all stages of design from concept to construction, he has contributed to main line capacity enhancements, yard and facilities projects, as well as public initiatives such as grade crossings and separations. Mr. Jansen excels in collaborating with agencies to facilitate successful project outcomes in coordination with railroad stakeholders. His profound comprehension of railroad processes enables him to navigate project approvals, design, and construction effectively. With a track record of delivering projects across urban, suburban, and rural landscapes, including those with significant right-of-way and corridor limitations, Mr. Jansen's membership in AREMA and active involvement in Committee 4 – Yards & Terminals underscores his commitment to advancing the industry.
04/22 – 09/23	**Railroad Crossover, Valero, Charles City, IA.** *Quality Control* and *Railroad Coordination*. Responsible for the construction of a 2,000-foot-long crossover between Canadian National and CPKC main lines in Charles City. The project involves establishing a new at-grade crossing of a local roadway and necessitates ***close coordination*** with the city authorities and management of multiple utility crossings to guarantee successful completion.
08/23 – Current	**Flood Protection System, USACE, Port Arthur, TX.** *Railroad Design* and *Coordination*. In charge of constructing flood gates at two CPKC track locations intersecting with a proposed flood protection system***, including a triple-track area*** at the end of a rail yard and a section with an existing at-grade roadway crossing.
10/10 – 12/18	**Chicago to St. Louis High Speed Rail, Union Pacific, Multiple Locations, IL.** *Quality Control*. Reviewed capacity improvements along the Chicago to St. Louis corridor for high-speed rail service implementation. ***Evaluated segments in urban areas*** with limited space and assessed upgrades for multiple at-grade highway crossings along the route.
11/11 – 07/17	**Council Bluffs Interstate System (CBIS) Railroad Consolidation, Iowa DOT, Council Bluffs, IA.** *Railroad Design Lead*. Responsible for the project to consolidate multiple railroad corridors as part of the CBIS improvements. The project included the realignment of rail corridors for three separate railroads, the removal of seven existing at-grade crossings, and the ***construction of two new at-grade crossings***, as well as coordination with multiple railroads, rail-served industries, and agencies.

10/13 – 11/18	**US-63 Railroad Shoofly, Iowa DOT, Waterloo, IA.** *Project Manager*. Responsible for the project to reconstruct a highway-rail grade separation, including a temporary railroad shoofly and modifications to existing adjacent at-grade crossings.
10/10 – 04/22	**Chicago to Iowa City Passenger Rail, Iowa DOT, Chicago, IL to Iowa City, IA.** *Design Lead*. Responsible for the grant application, conceptual design, and preliminary design for proposed improvements to support the proposed passenger rail service between Chicago and Iowa City. ***Coordination with host railroads (BNSF and Iowa Interstate),*** Amtrak, and the Illinois Department of Transportation.
10/11 – 12/13	**Chicago to Omaha Passenger Rail, Iowa DOT, Chicago, IL to Omaha, NE.** *Design Lead*. Responsible for the planning study to determine the necessary improvements to implement passenger rail between Chicago and Omaha. The study utilized a phased approach to service implementation, including increases in ***service frequency*** and train speeds over time, supported by phased implementation of capacity improvements along the proposed corridor.
09/19 – 08/21	**Milwaukee Area Commuter Rail, Wisconsin Transit & Realty, Milwaukee, WI.** *Design Lead*. Responsible for a planning study to determine the feasibility of operating commuter rail service in the Milwaukee area, including coordination with potential host railroads on service requirements and necessary capacity improvements.
11/20 – 04/22	**Louisiana Capacity Improvements, Union Pacific Railroad, Basile, Lawtell, & Reeves, LA.** *Quality Control*. Reviews for three siding extension projects in Louisiana on the ***Union Pacific corridor between Houston and Baton Rouge***. Projects extended existing sidings to a minimum length of 10,000 feet and included at-grade crossing modifications and coordination with local municipalities.
08/22 – Ongoing	**Rail Car Manufacturing Facility, Siemens Mobility, Lexington, NC.** *Owner's Design Manager.*Arcadis is acting as owner's representative including overall project management, design oversight, and construction management. Siemens is constructing a new manufacturing facility to support manufacturing passenger rail cars but with the potential to expand to other product lines including locomotives and light-rail vehicles. The facility consists of approximately 500,000 SF of area spread among 12 manufacturing and servicing areas in eight buildings on a 200-acre site. The facility will be served by rail and includes a connection to the North Carolina Railroad and a seven-track railyard for receiving materials and staging outbound shipments of completed passenger cars. The project involved close coordination with the multiple divisions within NCDOT.
07/23 – Ongoing	**Russell Street Improvements, City of Fayetteville, NC.** *Rail Task Manager.*Arcadis developed a Master Plan for the Blount's Creek Watershed to help address flooding concerns for the City of Fayetteville. As a result the City asked Arcadis to further develop one of the proposed solutions identified in the ***study including widening four bridges*** over the creek near the city center ***including a roadway bridge*** on Person Street as well as two roadway bridges and a railroad bridge on Russell Street. The project includes extensive coordination with CSX Transportation, who owns the railroad in the median between the eastbound and westbound lanes of Russell Street to determine how to phase construction of the lengthened roadway and railroad bridges over the creek in a corridor with significant right- of-way constraints.
09/11 – 04/13	**East Industrial Park Rail Access Study, City of Columbus, NE.** *Rail Design Lead*.A study for access to a planned industrial park. The rail access study included coordination with multiple potential stakeholders to identify project needs and potential tenants for the industrial park. The rail access concept was designed to allow for the potential for dual rail service to the park, provide for adequate rail car staging and storage, and rail access to individual parcels within the overall park. Also included the potential for a transload facility allowing for other industrial facilities without rail service in the area to more readily access rail service without trucking a significant distance from other facilities in the region.

Firm employed by. ARCADIS			
Name	**Keith Kunst, PE**	Years of relevant experience with this employer	20
Title	Senior Transportation Engineer	Years of relevant experience with other employer(s)	5
Degree(s) / Years / Specialization	BS / 1996 / Civil Engineering, Georgia Institute of Technology-Main Campus MBA / 2000 / Finance, Georgia State University		
Active registration number / state / expiration date	PE. 027070 / GA / Exp. 12/31/2025		
Year registered	2021	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities	**Alternative Project Delivery Specialist**		

Experience dates	Experience and qualifications relevant to the proposed contract
	Mr. Kunst has 25 years of diverse project management experience coupled with a construction and design background. Prior to joining Arcadis, He served as an **Assistant Area Engineer at GDOT in charge of more than $100 million in bridge and highway construction projects. This collective knowledge gives him a unique understanding of the staging and constructability requirements for the projects he manages and allows him to successfully lead and mentor teams of engineers and environmental staff.** He only serves the transportation market and has focused his entire career on designing and implementing safe, thoughtful transportation solutions for the traveling public. For the last 12 years, He has been involved in almost all of the firm's largest and most technically challenging projects both for the owner and the contractor. His expertise includes managing and designing complex freeways and interchanges, major urban and rural bypass or widening projects and railroad and roadway bridges. His innovative design and management solutions have effectively lowered costs, reduced environmental and property impacts, and gained interagency and public consensus to streamline project delivery. These solutions have directly resulted in shortened project schedules and has saved clients tens of millions of dollars. He is a hands-on manager who is directly engaged with his client, project team, local governments, project stakeholders.
08/08 – 02/15	**I-285 At SR-400 Interchange Design-Build-Finance Owner's Representative, GDOT, Metro Atlanta, GA.** *Senior Technical Advisor and Conceptual Lead*. Responsible for the reconstruction of the I-285 at SR 400 interchange. In early 2014, the I-285 at SR 400 Interchange project was placed on the State of Georgia's top priority list since it is expected to handle almost 600,000 vpd by 2039. Under this $460 Million project, GDOT sought a solution to improve interchange geometry and improve operational efficiency and used an alternative Design-Build-Finance delivery method to cut delivery time from 8-10 years to under 6 years. ***Pre-Construction Activities***: ***Arcadis developed the preferred alternative, NEPA document***, System Interchange Modification Report and costing plans required to solicit the bid. All of this was accomplished under an unprecedented 12-month schedule to allow for maximum construction time. This project was a team effort across multiple Arcadis offices, including Ohio, Georgia, and Florida. Proposed improvements included constructing parallel collector/distributor (C/D) lanes and braided ramps along I-285 and SR 400 for improved traffic operations and safety. Interchange reconfiguration included two new flyover movements as well. Procurement and Post Award Activities: Arcadis assisted GDOT with the development of the Design-Build-Finance contract and reviewed all ATC submittals from contractors. After award, Arcadis served GDOT on the Independent Quality Firm team. This team developed project-specific Quality Assurance Manuals to guide the reviews for all DBF team submittals and is independently reviewing all submittals from an engineering standpoint and for contract compliance.

07/13 – 10/14	**I-75 South Managed Lanes Design-Build, C.W. Matthews Contracting Co., Henry County, GA.** *Project Manager.* Responsible for the design of variable rate toll lanes along I-75 between SR 155/McDonough Road and SR 138/ Stockbridge Highway utilizing GDOT's innovative design-build approach to expedite project delivery. The $176 Million project included two reversible lanes in the I-75 center median from SR 138 in south Clayton County to just north of SR 20; and one reversible lane also in the center median, extending to SR 155 in Henry County. The project used three slip access locations to provide ingress/egress from the managed lanes to/from I-75 general purpose lanes. A new dedicated "express-lane only" access interchange was created south of Jonesboro Road with a connector road back to Jonesboro Road. A flyover ramp to I-675 on northern terminus was included which provides slip ramps on I-675 near SR 138. The project design/permitting was completed 4 months ahead of schedule and construction was completed January 2017. According to GDOT, this is the largest design-build project to open to traffic in the State of Georgia to date, and the only Georgia project in which a section of the interstate was converted to include two managed lanes in the center of the freeway.
07/15 – 07/16	**I-85 N Express Lanes Extension Design-Build, C.W. Matthews Contracting Co., Gwinnett County, GA.** *Project Manager*. Led the design consultant team on this large-scale, ***technically complex design-build project***. C.W. Matthews Contracting Company (CWM) chose Arcadis as Lead Engineer for this project due to our ***turn-key design expertise*** of tollway facilities and our prior success on ***major design-build projects***. This $130 million project includes 10 miles of newly constructed bi-directional express lanes as an extension of the existing I-85 express lanes north of Atlanta. Three slip-ramp access points are being provided along with new general-purpose auxiliary lanes between several ramps to improve merging safety and to prevent bottlenecks. As lead designer, Arcadis ***performed more than 90% of the design work,*** including 100% of all roadway, drainage, bridge, ITS and tolling design. This work includes the replacement of the I-85 over I-985 SB bridge, a new NB express lane-only flyover bridge over I-985 and widening the I-85 bridges over SR 20. Additionally, Arcadis completed all environmental permitting; re-evaluation coordination; land surveying; utilities coordination; design of tolling and ITS-related infrastructure including new fiber trunk lines; site design for hub buildings; MS4 permitting; and maintenance of traffic plans. All design was completed, and construction started 2 months ahead of schedule. Since quality is paramount, Arcadis used a project-specific QA/QC plan during design which included independent reviews and peer reviews of all work as well as full ***independent structural design of all bridges.***



Since 2022, Arcadis has provided bridge project management, site visits, hydraulic analysis, preliminary plan development, roadway and bridge design, final plans preparation, cost estimation and construction support for the **LADOTD IIJA Off-System Bridge Program.** Our bridge team prepared preliminary and final plans for proposed bridges, which included plan and profile sheets, typical roadway sections and quantities, and a general bridge plan. Additionally, our initial services under this program were researching eligible structures for the program.

Section 17

17 FIRM EXPERIENCE:

Firm name	ARCADIS	Past Performance Evaluation Discipline(s)*	Planning, Environmental, Traffic, Road, Bridge
Project name	US 11 Norfolk Southern Railroad Environmental Assessment	Firm responsibility (prime or sub?)	Prime
Project number	H.000688.2	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	St. Tammany Parish, LA	Owner's Project Manager	Sara Moss, PE
Owner's address, phone, email	1201 Capitol Access Rd, RM 602-L, Baton Rouge, LA 70802; 225 379 1331, sara.moss@la.gov		
Services commenced by this firm (mm/yy)	04/13	Total consultant contract cost ($1,000's)	$768
Services completed by this firm (mm/yy)	12/24	Cost of consultant services provided by this firm ($1,000's)	$716

Firms Role: LADOTD contracted Arcadis and its sub-consultants to prepare an Environmental Assessment for the replacement of an historic railroad overpass and the upgrade of the existing undivided highway to a four-lane superstreet in Slidell, LA. The project goal was to promote mobility and safety along the corridor.

Firm Members Involved: **Akhil Chauhan, Ari Deitch, Badre Enam, David Fulks, Jan Hughes, Jason Morrell**

Relevant Services

- Alternative Screening
- Preliminary Roadway and Bridge Design
- Line and Grade
- Environmental Assessment
- Construction Cost Estimates
- Public Involvement
- Agency Coordination

Preliminary Roadway and Bridge Design: Arcadis performed all engineering services including ***roadway and bridge line and grade and geometric design***, railroad track, ballast, and maintenance road design to evaluate clearance requirements with future planned rail additions, 3D design modeling of existing terrain, railroad full-build condition, and bridge and ***roadway typical sections and geometric layouts*** for improvements. Design drawings were used to accurately determine earthwork, construction limits, required right-of-way, and construction cost estimates.

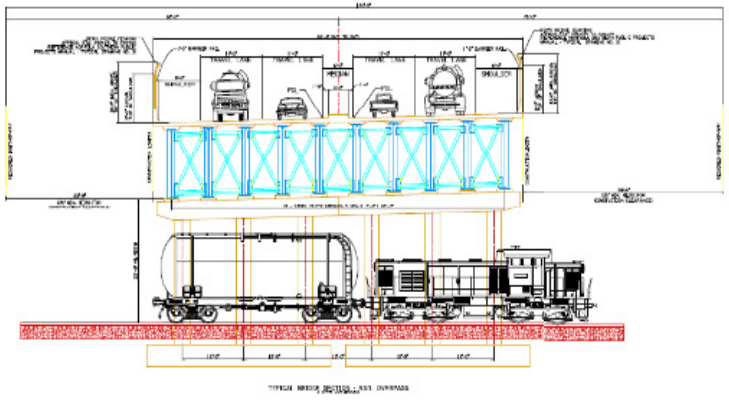


Figure: Proposed US 11 bridge typical section and railroad clearance.

Context Sensitive Design: The design includes ADA compliant curb ramps and crosswalks to incorporate the existing sidewalks and accommodate pedestrian traffic. Sufficient space was included within the roadway border for the future installation by the City of Slidell of a multi-use path to accommodate bicyclists. Finally, access to existing businesses was carefully balanced within the requirements of the ***LADOTD Access Management Policy***.

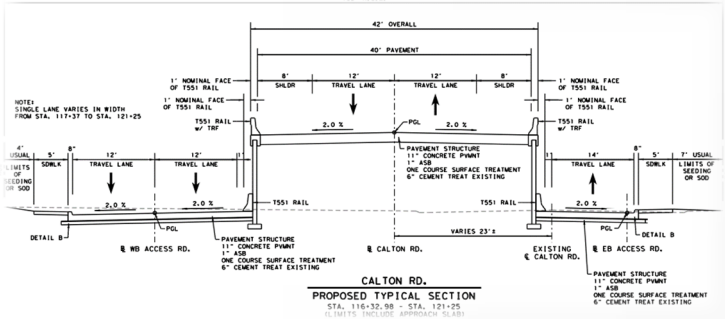
Planning and Environmental: Arcadis completed technical studies to support the Environmental Assessment including wetlands and biological resource identification, Phase I Environmental Site Assessment, traffic noise and air quality analysis, socio-economic and community impact evaluation, and secondary and cumulative effects analysis. Additional studies and coordination completed for the project included a Phase I Cultural Resource Survey and Reporting and Public Involvement requiring public information meetings and a public hearing for the Environmental Assessment. The results of technical studies and public involvement were summarized in the Environmental Assessment to support a Finding of No Significant Impacts (FONSI). FHWA approved the Finding of No Significant Impact (FONSI) for the project in August 2022 and Arcadis worked with DOTD to prepare the FONSI re-evaluation for FHWA approval.

Firm name	ARCADIS	Past Performance Evaluation Discipline(s)*	Bridge, Road, Environment
Project name	Calton Road Overpass	Firm responsibility (prime or sub?)	Prime
Project number	30102048	Owner's name	City of Laredo, Texas
Project location	Laredo, Texas	Owner's Project Manager	Gloria Saavedra
Owner's address, phone, email	1110 Houston Street, Laredo, Texas 78040, 956-791-7346, gsaavedra@ci.laredo.tx.us		
Services commenced by this firm (mm/yy)	03/06	Total consultant contract cost ($1,000's)	$344
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$344

Relevant Services

- Preliminary and Final Roadway Design and Bridge
- Railroad Coordination
- Retaining Wall Design

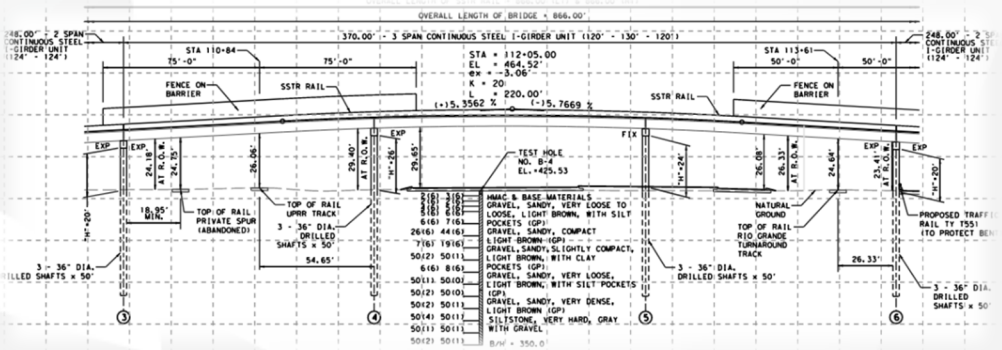
Firms Role: Overpass Bridge design, roadway design, retaining wall design, hydrology and hydraulic analysis, ***railroad coordination***, and Exhibit A for preliminary and final plans preparation. Geotechnical investigation and report, environmental documentation, utility coordination, and construction cost estimate for final bidding.

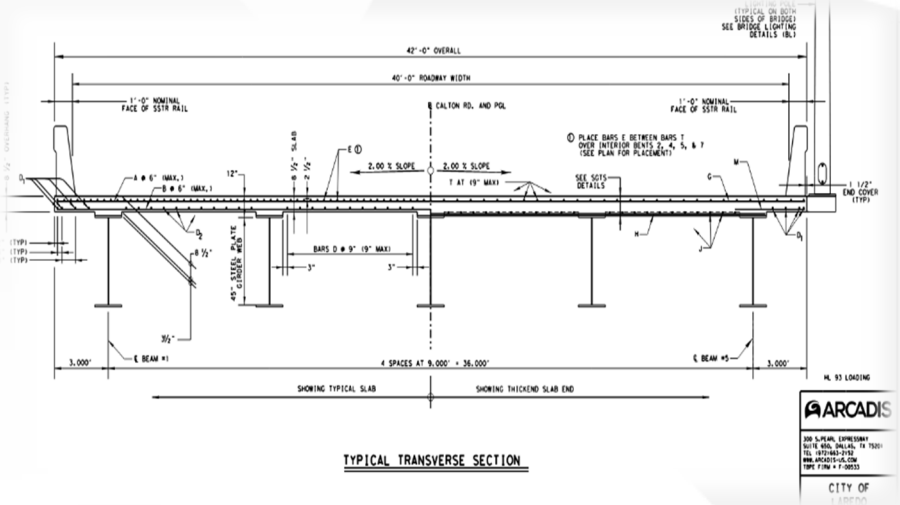


Firm Members Involved: **Osama Shahawy, Colin Sarratt**

Preliminary Design Plans and Report

Arcadis provided all engineering design services and environmental documentation for converting an existing 2-lane roadway into the creation of a ***new overpass spanning 3 Union Pacific Railroad tracks***, while maintaining 3 at-grade lanes in Laredo, Texas, under TxDOT Laredo District design oversight. The team overcame the challenge for providing utility adjustments and proposed storm sewer system within a 105' ROW.





Final Design Plans and Cost Estimate

Arcadis developed the ***final design plans for the bridge and roadway***, along with a detailed ***construction cost estimate***. The new overpass bridge is situated along a straight stretch of roadway, followed by a single curve with a standard crown. Due to challenging site conditions, the bridge and roadway design teams worked closely to create a safe and constructible solution that fit within the existing right-of-way and complied with the railroad's minimum vertical clearance requirements. The bridge spans a total of 866 feet and features a 248-foot, two-span continuous steel I-girder unit supported by column bents. The typical roadway section across the bridge includes two 12-foot travel lanes and 8-foot shoulders. Arcadis also prepared the necessary environmental documentation and ***coordinated with Union Pacific Railroad (UPRR) for review and approval.***

17 FIRM EXPERIENCE:

Firm name	ARCADIS	Past Performance Evaluation Discipline(s)*	Bridge, Road, Environment
Project name	**IIJA OSBR Program District 02**	Firm responsibility (prime or sub?)	Prime
Project number	H.015334.5	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	District 01, LA	Owner's Project Manager	Kurt Brauner
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802, kurt.brauner@la.gov		
Services commenced by this firm (mm/yy)	10/22	Total consultant contract cost ($1,000's)	$1450
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$780

Firms Role: Project Management, Site Visit, Topographic Survey and ROW determination, Hydraulic analysis, Environmental Services, Geotechnical Investigation and Design, Preliminary Plan Development, Plan-in-hand Review, Roadway and Bridge Design, Final Plans Preparation, Cost Estimation, Construction Support related engineering services during the construction phase.

Firm Members Involved: **Osama Shahawy, Jose Rodriguez, Victor Sanchez, Jason Morrell, Colin Saratt**

Arcadis provided all engineering and related services required for ***developing plans to replace the bridges shown in the table below***. Initial services included researching eligible structures, coordinating with local stakeholders, and selecting structures for inclusion in the IIJA Off-System Bridge Program. Provide a Preliminary Screening Matrix of the selected structures list, grouped by project and parish, with an anticipated ***cost estimate.***

Relevant Services

- Research eligible structures for the IIJA Program
- Environmental studies and documentations
- Hydraulic Analysis / Design
- Preliminary and Final Bridge and Roadway Design Plans
- Contract Management

Project No.	Recall No.	Project Name	Parish
H.015334	200851	9th Street Over St. Louis Canal	Terrebonne
H.015496	100019 / 100020	Sauvage Ave and Caddy Dr. Over Ames Canal	Jefferson
H.015497	010146	JACK EGLE BRIDGE ROAD Over Canal	Lafourche
H.015498	102225	Park Rd. (Joe Brown) Over Lagoon	Orleans
H.015499	000023	Charles Court Over 20 Arpernt Canal	St. Bernard
H.015500	103011	Adema Ln. Over Drainage Canal	Plaquemines

Bridge Design Plans Arcadis prepared ***preliminary and final plans*** of the proposed bridge, which included plan and profile sheets, typical roadway sections and quantities, a general bridge plan, traffic detour and road closure details, and relevant signing plans, as well as channel cross-sections. Arcadis participated in plan-in-hand and final plan reviews, which included review teams from both the Parish and the LADOTD. Arcadis prepared ***bridge and roadway design criteria***, ***design reports, design waivers, and exceptions***. Disposition of comments response following each plan submittal.

Firm name	ARCADIS	Past Performance Evaluation Discipline(s)*	Bridge, Road, Traffic, Environment
Project name	**Chef Menteur Bridge and Approaches, Route US 90**	Firm responsibility (prime or sub?)	Prime
Project number	H.000263.2	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Orleans Parish, LA	Owner's Project Manager	Nikki Leon / Irina Sorset
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802, 225 242 4514, nikki.leon@la.gov (irina.sorset@la.gov)		
Services commenced by this firm (mm/yy)	08/11	Total consultant contract cost ($1,000's)	$1,118
Services completed by this firm (mm/yy)	11/14	Cost of consultant services provided by this firm ($1,000's)	$879

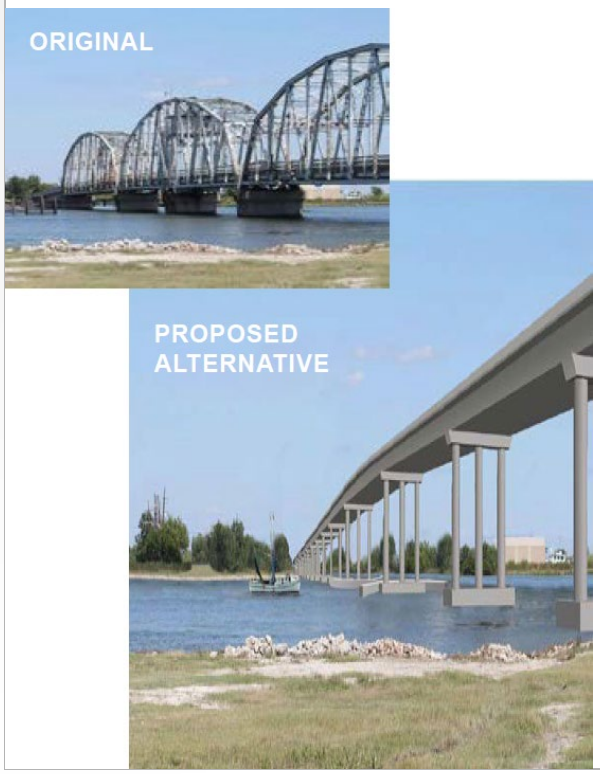
Firms Role: Arcadis was contracted by LADOTD to evaluate bridge design alternatives to replace the existing US 90 swing- span bridge over Chef Menteur Pass in Orleans Parish as part of an National Environmental Policy Act (NEPA) Environmental Assessment. Both movable - and fixed-span designs were considered along with three preliminary alignments.

Firm Members Involved: Akhil Chauhan, David Fulks

Line and Grade Study - As part of the Environmental Assessment, Arcadis completed a ***line and grade study*** to determine the ***vertical and hortizontal geometry***, bridge and roadway typical sections, utility and ROW impacts and ***construction cost estimates***.

Relevant Services

- Geometric Design of Roadway and Bridge
- Line and Grade Study
- Roadway and Bridge Typical Sections
- Local Access Connections
- Bridge type / Lifecycle Cost Assessment
- Construction Cost Estimate
- LADOTD Design Guidelines and EDSM's
- LADOTD Road Design and Bridge Design Manuals
- Stakeholder and Agency Coordination



Key Challenges - The challenges were to ***minimize impacts*** to abutting Venetian Isles subdivision, while also avoiding or minimizing effects to the Fort Macomb structure and state parkland, terrestrial and submerged archaeological sites, and the Bayou Sauvage National Wildlife Refuge. From an engineering perspective, the project site posed notable challenges. The Chef Menteur Pass experiences ***swift tidal flows that have resulted in substantial scour and increased potential for vessel collisions***.

Project Approach - The approach identified the schedule's critical path, including a post-Katrina ***vessel height study update***, a remote sensing of Chef Menteur Pass to identify submerged cultural resources and to ascertain bathometric data, and early coordination and approval of the design criteria to adequately address the mixed-use in the vicinity of the bridge. In accordance with the ***LADOTD Complete Streets Policy***, this project queried and incorporated comments from New Orleans bicycle representatives, who recognize US 90 as the only bicycle route between New Orleans and the state line. Arcadis followed good ***access management principles*** to address local mobility needs. Private access connections (driveways) were minimized by providing interconnectivity and shared driveways among residential, commercial, and park properties. With nearly 10 stakeholder and agency meetings over the first two months of the contract, the ***team was aggressive with early outreach and continuous coordination with both agencies and the public***.

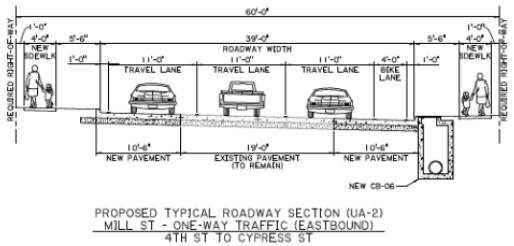
Firm name	ARCADIS	Past Performance Evaluation Discipline(s)*	Bridge, Road, Traffic, Environment
Project name	**US 165 Connector and Ouachita River Bridge EIS, Line and Grade and Toll Study**	Firm responsibility (prime or sub?)	Prime
Project number	4400004807 / H.004782	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Ouachita Parish, LA	Owner's Project Manager	Rhonda Braud
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802, 225 242-4532; Rhonda.Braud@la.gov		
Services commenced by this firm (mm/yy)	05/2012	Total consultant contract cost ($1,000's)	$1,981
Services completed by this firm (mm/yy)	11/21	Cost of consultant services provided by this firm ($1,000's)	$1,363

Firms Role: Alternatives development for NEPA compliance; ***Line and Grade***; extensive wetland analysis; socioeconomic / environmental Justice; visual imagery; toll study coordination; air and noise analysis / modeling; phase I ESA; Stakeholder / public outreach; USCG navigable waterway coordination; traffic engineering & analysis.

Firm Members Involved: **Akhil Chauhan, David Fulks, Garret Keller, Kirk Lowery, Jason Morrell**

Relevant Services

- Line and Grade Report
- Preliminary Roadway and Bridge Design
- Utiility / ROW/ Hydraulics Review
- Typical Sections
- Construction Cost Estimates
- Phase Construction / Implementation
- Traffic Engineering
- Stakeholder/Agency Coordination



PROPOSED TYPICAL ROADWAY SECTION (UA-2)
MILL ST - ONE-WAY TRAFFIC (EASTBOUND)
4TH ST TO CYPRESS ST

Project Background: Discussed for more than 40 years, the "4th Bridge" in Monroe will provide needed transportation system linkage in the north region, whose population density and development continues to grow. The proposed bridge and approaches would connect LA 143 to US 165, which both serve as main north-south arterials for Ouachita, Union, and Morehouse parishes. This facility would also provide a section of independent utility for a future planned loop roadway around the cities of Monroe and West Monroe, Louisiana.

Line and Grade Study: A ***detailed line and grade study*** was performed for the preferred alternative to determine ***roadway alignment (horizontal and vertical geometry)***, ***typical sections***, and layout for the corridor. A detailed review of existing utilities and right-of-way was performed to determine utility and right-of-way impacts. A detailed assessment of drainage was also performed to determine drainage improvement that would be needed. ***Cost estimates*** were developed to document construction cost, ROW aquisition / relocation costs, and utility relocation costs.

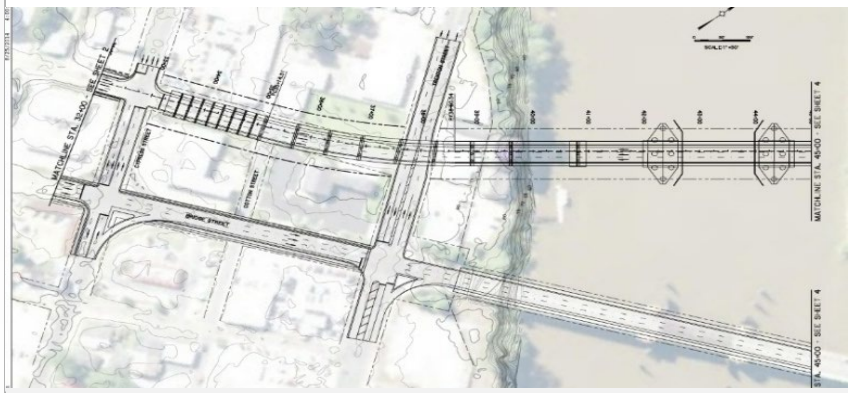


Figure: Oachita River Bridge Line and Grade – West Approach Alternative

A ***line and grade study report*** was prepared to document the ***development of roadway and bridge sections***, establish ***design criteria*** and other factors for design consideration, horizontal alignment, vertical alignment, and roadway geometrics.

Phase Construction Approach: Fiscal limitations may require a phased approach to construction of any build alternative. Therefore, Arcadis' engineering and planning analysis ***identified phased implementation opportunities and alternative construction methods to minimize costs and impacts***. The challenge was to identify the overall, least environmentally-damaging, practicable alternative crossing and approach alignment of the Ouachita River between LA 143 and US 165.

17 FIRM EXPERIENCE:

Firm name	Ardaman & Associates, Inc.	Past Performance Evaluation Discipline(s)*	Geotech
Project name	**I-20 Mississippi River Bridge Review**	Firm responsibility (prime or sub?)	Prime
Project number	H.004646 09-L1049; H.010603.6 13-3720; H.010612.6 20-3729; H.004647.6 22-3746, 22-3753, 24-3707	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Madison Parish, LA	Owner's Project Manager	Chris Nickel
Owner's address, phone, email	1201 Capitol Access Rd, RM 602-L, Baton Rouge, LA 70802; 225.379.1100; Chris.Nickel@la.gov		
Services commenced by this firm (mm/yy)	10/09	Total consultant contract cost ($1,000's)	$10,881
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$10,881

Firm Members Involved: **Megan Bourgeois, Robert Jewell, Jarmon King, Casey Floyd, Jessica Litt**

Ardaman conducted a geotechnical study to develop a list of technically feasible remedial alternatives to decrease the potential for ground movements to occur at the site of the I-20 Bridge. Movement of the east abutment of the bridge was first realized in 2001 during an inspection. Over the years Mississippi DOT has retained several consultants who have studied the problem, but no viable solution was identified. ***Ardaman conducted a comprehensive review of past slope stability evaluations and recommendations.*** This task was followed by developing a refined geotechnical site characterization plan for the bank/bluff area for further analyses. Drilling operations included obtaining extremely sensitive samples containing prehistoric shear planes from the river via barge and on land, all with extremely difficult access conditions. The drilling program also included installation of geotechnical instrumentation such as Shape Accelerator Arrays, inclinometers, and vibrating wire piezometers. Engineering analyses performed included seepage and drawdown analyses and both equilibrium and finite element numerical modeling slope stability analyses. As part of the project, ***Ardaman developed a full slope stabilization design and construction remediation strategy and a monitoring program for the bluff instability and ground movements*** affecting the existing I-20 Mississippi River Bridge.

Ardaman is currently managing a phase of the project which involves upgrading the entire instrumentation communication system. It also includes gathering and continuously monitoring various types of instrumentation data, inspects of the site and monitoring changes in topography by obtaining periodic survey data.

17 FIRM EXPERIENCE:

Firm name	Ardaman & Associates, Inc.	Past Performance Evaluation Discipline(s)*	Geotech
Project name	**I-10: LA 415 to Essen Lane on I-10 & I-12 (CMAR)**	Firm responsibility (prime or sub?)	Prime
Project number	SP No. H.004100.5	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	East Baton Rouge Parish, LA	Owner's Project Manager	Nicholas Olivier
Owner's address, phone, email	1201 Capitol Access Rd, RM 602-L, Baton Rouge, LA 70802; 225.379.1133, nicholas.olivier@la.gov		
Services commenced by this firm (mm/yy)	07/21	Total consultant contract cost ($1,000's)	$44,000
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$1,217

Firm Members Involved: **Robert Jewell, Megan Bourgeois, Jarmon King, Mark Woodward, Casey Floyd, Jessica Litt**

The Construction Management at Risk (CMAR) project scope consists of widening of the east and westbound lanes, elevated structures, interchanges, and ramps along I-10 from LA 415 in West Baton Rouge Parish to Essen Lane on I-10 and I-12 in East Baton Rouge Parish spanning approximately 2.5 mile. Ardaman is the ***Geotechnical Consultant on the CMAR team and is currently providing geotechnical support*** for Segment 1 which starts near the I-10 and I-110 split between Napoleon and St Joseph Streets to Acadian Thruway entrance and exit ramps.

Ardaman previously completed 58 soil borings and associated laboratory testing based on LADOTD standards, and 11 electronic cone penetration tests (ECPT) in the preliminary portion of the widening project between Napoleon Street and Louise Street under our current retainer contract in support of the project. In addition, Ardaman performed electrical resistivity (ER) geophysical survey transects along the entire alignment, which allowed for survey of the subsurface conditions between the boring locations. Ardaman is currently performing additional soil borings along the Segment 1 area to supplement existing data along the alignment.

Engineering services include supervision of the field program, development of the laboratory testing program, quality control review, and ***development of an interactive geotechnical database to compile and analyze all the supplied soil boring data*** provided by LADOTD and the additional borings that are currently being performed. The engineering analyses consist of detailed selection of design reaches and design soil parameters, slope stability and settlement of earth retained structures, soil-structure interaction with existing structures, deep foundation design, load testing recommendations, review of load test results and refinement of design. A preliminary geotechnical assessment report was prepared, and a ***final geotechnical design*** report will be submitted.

17 FIRM EXPERIENCE:

Firm name	Ardaman & Associates, Inc.	Past Performance Evaluation Discipline(s)*	Geotech
Project name	**US 371: KCS Railroad Overpasses HBI**	Firm responsibility (prime or sub?)	Sub
Project number	H.012030	Owner's name	Louisiana Department of Transportation and Development (LADOTD)
Project location	Webster Parish, Louisiana	Owner's Project Manager	Hamed Babaizadeh
Owner's address, phone, email	1201 Capitol Access Rd, RM 602-L, Baton Rouge, LA 70802; 225-379-1937, Hamed Babaizadeh@la.gov		
Services commenced by this firm (mm/yy)	07/2023	Total consultant contract cost ($1,000's)	$956.8
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$231.4

Firm Members Involved: **Megan Bourgeois, Robert Jewell, Jarmon King, Casey Floyd, Jessica Litt**

The project consists of a geotechnical subsurface exploration and recommendations for S.P. No. H.012030, US 371: KC Railroad Overpasses HBI, with the objective of ***replacing two parallel bridges and one standalone bridge located on US 371 between Minden and Sibley, Louisiana. The bridges cross over Kansas City (KC) Railroad at each site.*** The standalone bridge near Sibley, LA was later removed from the project to be placed under another state project, however the geotechnical exploration that was performed for this site will be included in this description. The three bridges range from approximately 200 feet to 250 feet in length including 4 bents per bridge supported on drilled shafts with varying diameters.

For the geotechnical exploration phase of work, ***Ardaman performed 8 soil borings to a maximum depth of 110 feet below existing ground surface (bgs), targeting the proposed bridge foundations on either side of the KC railroad.*** Two of the soil borings were performed through the existing bridge deck within the ROW of the KC railroad while occupying one lane of US 371. Coordination with temporary traffic control services and the KC railroad temporary construction requirements was necessary to perform these soil borings.

Engineering services include supervision of the field program, development of the laboratory testing program, quality control review, and development of an interactive geotechnical database to compile all the soil borings. The engineering analyses included drilled shaft design and advanced test shaft program recommendations. A data report, geotechnical interpretation report, and test shaft memorandum were submitted.

Arcadis' partner, **Ardaman and Associates, Inc.** will provide geotechnical services for this project. Their Baton Rouge office has provided geotechnical expertise in Louisiana since 1974. Ardaman's local staff of engineers, technicians and drillers conducts field investigations, laboratory tests and engineering evaluations which span the entire spectrum of geotechnical engineering. Their onsite geotechnical laboratory is accredited by AASHTO and the LA Department of Environmental Quality and also validated by the US Army Corps of Engineers.

Sections 18-23

18 APPROACH AND METHODOLOGY:

Arcadis is well suited to provide both initial and additional engineering services for this contract. As the author of the approved Environmental Assessment (EA), our team possesses intimate knowledge of the corridor and the project's environmental commitments, stakeholder agreements, and rationale behind the selected alternative.

Arcadis, along with our geotechnical subconsultant, **Ardaman & Associates,** will ensure that design work performed is in accordance with the EA document, the current LADOTD Roadway Design Manual, the Bridge Design and Evaluation Manual, and applicable AASHTO standards. Additionally, our design team will help integrate LADOTD's Access Management policies, Complete Streets guidance, ADA requirements, and railroad design constraints.

The approach and methodology discussed below focuses on the initial services detailed in the scope of work. However, **the Arcadis Team has been assembled to deliver additional services that may be supplemented based on the outcome of the line and grade study.** As such, the following sections also include details applicable to preliminary and final design services for the project.

CONTRACT SCOPING MEETING

After selection, the Arcadis Team will schedule a scoping meeting with the relevant LADOTD technical and support personnel to create a Project Work Plan. This plan will ensure that all scope and design elements are included in the final contract, facilitating a smooth transition for project delivery.

PROJECT MANAGEMENT / KICKOFF MEETING

Project management will include a formal kick-off meeting, development of a baseline project schedule, and monthly coordination updates with the LADOTD Project Manager. Arcadis will conduct regular meetings to **review progress, address risks, and confirm key design decisions**. A quality assurance and quality control (QA/QC) plan will be implemented.

The kick-off meeting will serve to (1) confirm project design criteria, (2) schedule a site visit and routine coordination meetings, and (3) review questions that the project team may have after reviewing project data.

Arcadis will develop a Critical Path baseline schedule using decisions made in the kick-off Meeting. Before finalizing the schedule, we will hold a railroad coordination meeting to discuss project submittals and review times times by LADOTD and Norfolk Southern Railroad.

The following sections present the Arcadis Team's approach to providing the initial services for the project, and outlines our strategy for identifying effective transportation solutions. Our team is also prepared to provide additional services for preliminary and final design of the project.

RAILROAD COORDINATION

Arcadis recognizes the importance of effective coordination with the railroad. To facilitate this, Arcadis will assign William Jansen, a specialized railroad engineer, to ensure compliance with Norfolk Southern standards and to streamline the approval process. Early and continuous engagement with the railroad will help secure a design that meets all requirements, including foundation sizing and protective features, thereby minimizing delays, and integrating railroad needs.

The Norfolk Southern review process will focus on critical elements such as minimum clearances, the strategic positioning of piers and abutments, the assessment of construction impacts on rail service, and effective drainage management away from the railroad.

The Arcadis Rail Coordination Team has a strong understanding of the review process of Norfolk Southern. **We recommend scheduling an**

initial meeting with Norfolk Southern, the project team, and LADOTD to establish communication and formalize the project review agreement.

DETAILED LINE AND GRADE STUDIES

The initial services for the project will be to development two detailed line and grade (L&G) studies with a dedicated focus on evaluating **cost-efficient alternatives that comply with the approved Environmental Assessment (EA)**. The first will evaluate the entire project as described in the EA, which involves widening US 11 to a four-lane, access-managed corridor with full bridge replacement. The second will evaluate a reduced scope consisting only of replacing the bridge with a two-lane structure and necessary approaches that meet current standards, while ensuring that the interim improvements are fully compatible with and do not impede future widening. A critical objective for both scenarios will be to explore **value-engineering solutions that address the cost of the extended center span over the railroad**. We will investigate optimizing the crossing angle and utilizing available railroad right-of-way to reduce span length and girder depth, ensuring all alternatives comply with the approved EA to prevent the need for its reconsideration. For both scenarios, Arcadis will first **establish and document design criteria**, comparing those identified in the EA with current LADOTD and AASHTO requirements and updating as necessary. The criteria will cover design class, design speed, lane and shoulder widths, horizontal curvature, vertical clearances, superelevation, side slopes, and control of access. A table of design criteria and a list of any anticipated design exceptions will be submitted to LADOTD for review and approval. Using these criteria, Arcadis will then develop typical roadway sections for each scenario. These will be compared with those from the EA and revised as needed to meet current design guidelines and future-widening considerations. Horizontal alignments will be evaluated to address sight distance, superelevation, access management, utility conflicts, drainage needs, and constructability. Alternatives will be screened against safety, operational, environmental, and right-of-way considerations to identify the preferred alignment. Vertical profiles will be developed to meet stopping sight distance, maximum and minimum grade, and clearance requirements, while also considering utilities and drainage structures. Both the horizontal and vertical alignments will be designed to ensure that the reduced-scope bridge replacement option can tie seamlessly into future widening.

Alignment for the bridge will include the development of type, size, and location (TS&L) alternatives using the **Bridge Design and Evaluation Manual and AASHTO LRFD Specifications**. Arcadis will identify the most cost-efficient and constructible bridge solution that accommodates the railroad's clearance and crash-wall requirements while considering span arrangement, substructure type, and reasonably sized foundation elements. **This analysis will specifically target the high cost of the center span** by evaluating a more perpendicular crossing angle and the use of straddle bents to minimize span length. We will also conduct a thorough evaluation of foundation options, including drilled shafts versus piles, in consultation with geotechnical experts and the railroad to determine the most cost-effective and constructible solution. Recommendations will be coordinated with the Norfolk Southern Railroad and presented in a Type, Size and Location, (TS&L) memorandum. Utility information provided by the LADOTD's SUE investigation will be reviewed, with conflicts identified and avoidance strategies incorporated whenever feasible. A utility conflict log will be maintained, and any required relocations will be documented. Right-of-way needs will be determined for each scenario, including temporary construction servitudes, drainage and utility easements, and railroad requirements, with parcel impacts documented in a property impact list. Our analysis will be constrained by the approved EA to ensure that all proposed solutions avoid new environmental impacts or additional right-of-way acquisitions that could trigger a formal reassessment.

CONSTRUCTION COST ESTIMATE

Construction cost estimates will be prepared for both scenarios based on conceptual quantities for pavement, structures, drainage, utilities, traffic

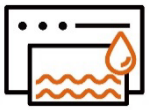
control, and temporary works. Estimates will use recent DOTD bid history and include allowances for mobilization, contingencies, and railroad protective measures.

LINE AND GRADE REPORT

Arcadis will document all findings in a comprehensive Line and Grade Report for each scenario. These reports will include the design criteria table, typical sections, plan and profile sheets, Bridge TS&L recommendations, drainage and utility evaluations, right-of-way impacts, traffic control and sequence of construction concepts, constructability considerations, and preliminary cost estimates. Each report will also include a comparison of alternatives and a **recommendation matrix highlighting the trade-offs between the two line and grade alternatives** in terms of safety, cost, schedule, constructability, and long-term compatibility. Final deliverables will include signed L&G reports, roll plots, digital plan sets, and supporting documentation in accordance with LADOTD standards.

CONSTRUCTION SEQUENCE

Arcadis will also develop a conceptual sequence of construction for each scenario. This will include staged temporary traffic control plans that maintain one northbound lane and one southbound lane at all times, **minimize disruptions to businesses and residences**, and **address railroad constraints**. Conceptual staging will account for temporary pavement, barriers, crossovers, and construction phasing at the bridge to ensure safety and constructability. The maintenance of traffic approach will emphasize minimizing temporary or "throw-away" work, particularly for the reduced-scope bridge scenario, so that interim improvements remain compatible with the ultimate four-lane widening.



HYDRAULIC ANALYSIS

To meet the hydraulic design criteria based on functional classification and the 20-year projected annual average daily traffic, our team will use the 50-year design event. We will assess the design flood stage to ensure LADOTD clearance requirements are met based on field conditions at the bridge site. The 100-year storm **event will be evaluated to ensure compliance with Norfolk Southern** hydraulic requirements along the adjacent railroad, and the 500-year overtopping storm event will be evaluated for scour. Despite the fact this bridge location is within a FEMA AE floodplain zone, the **hydraulic requirements of Norfolk Southern are likely to dictate the design due to their more stringent standards**.

Given the complexity of the location and the existing floodplain, our team proposes utilizing HEC-RAS 6.6 software to analyze the two existing bridge culverts within the project site. We recommend employing a 2D model, in line with FHWA's Hydraulic Design of Safe Bridges Second Edition (HDS-7), due to the wide floodplain and the roads skew parallel to it. This modeling approach offers several advantages for the project:

- Enhanced representation of existing flow patterns and storage areas.
- Accurate determination of headwater elevation along railroad ROW.
- Detailed velocity information to assess impacts along railroad ROW.

To evaluate the feasibility of the selected alternative, an existing model will be developed and then duplicated and modified to represent the proposed design. The proposed design will ensure that backwater levels do not increase by more than one foot during a 100-year event and will **fully comply with local and FEMA requirements**. Additionally, the proposed design will maintain water surface elevations within the railroad right-of-way at or below pre-existing conditions.

BRIDGE DESIGN: Norfolk Southern Overpass

Our team will evaluate the feasibility of a phased construction approach based on the selected alternative from the Environmental Assessment (EA) for this project. Arcadis will develop bridge design criteria per the LADOTD Bridge Design and Evaluation Manual for the following two alternatives. First, widening US 11 from Powel Drive to four lanes (access managed corridor) and replacing the existing bridge along its current alignment. Second, replacing the existing bridge with a two-lane bridge and shoulders within

the project limits. This alternative will consider future widening of the bridge and reconstruction of the corridor.

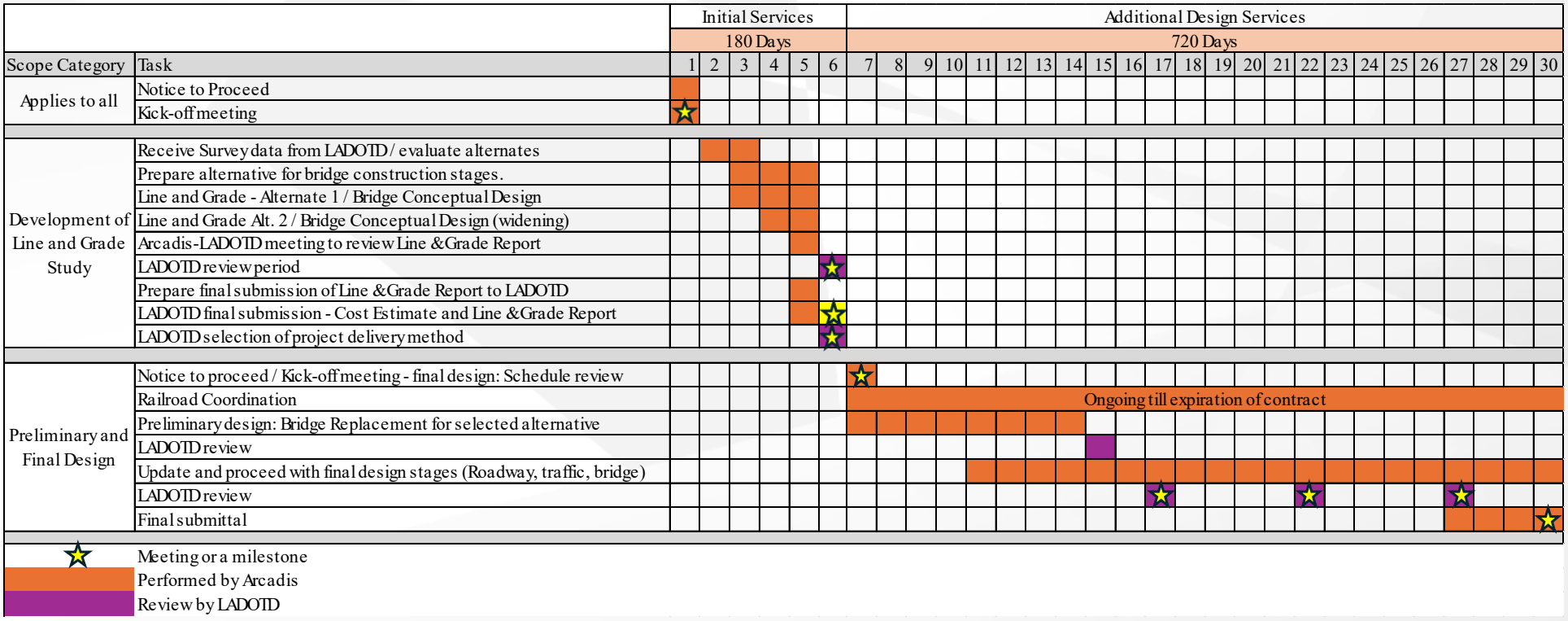
For the bridge structure, our team will assess the use of a series of straddle bents as substructure components. Straddle bents offer the advantage of **reducing the length of the main span over the railroad** tracks, thus maintaining the necessary horizontal clearance from the structures to the center of the tracks, as well as fulfilling the required minimum vertical clearance within the Norfolk Southern right-of-way. Additionally, we will explore the feasibility of using steel caps in straddle bents compared to post-tensioned concrete caps.

The bridge's superstructure will consist of curved steel plate girders for the longest spans and precast prestressed girders for the shorter spans. For the bridge approaches, we will evaluate the need for retaining walls to ensure compliance with railroad requirements regarding embankment slope encroaching on the railroad right-of-way.

QUALITY ASSURANCE / QUALITY CONTROL (QA/QC)

Arcadis will implement a structured QA/QC process throughout the project duration to ensure that all deliverables meet LADOTD standards, AASHTO requirements, and industry best practices. **The QA/QC program will be led by a senior engineer independent of the design team** to provide an objective review of all critical project elements, including line and grade studies, design criteria, horizontal and vertical alignments, typical sections, drainage, utility conflict identification, right-of-way requirements, and bridge design concepts. Reviews will be conducted at key milestones to verify accuracy, consistency, constructability, and compliance with LADOTD guidelines. This proactive QA/QC process will minimize design errors, reduce the risk of rework, and provide LADOTD with a reliable, well-documented basis for decision-making and project advancement.

SCHEDULE



19 WORKLOAD:

Firm(s) ALL FIRMS MUST BE REPRESENTED IN THIS TABLE	Discipline	Contract Number and State Project Number	Project Name	Remaining Unpaid Balance
ARCADIS	Traffic	4400029193 / H.004100.5 and H.004100.6	I-10: LA 415 to Essen Lane on I-10 and I-12 ***(50% of remaining work is complete and invoiced but awaitng payment)***	$880,338
		4400019379 / H.013797	LA 30: EBR PL – I-10	$232,048
		4400024307 / H.015052	I-20: Widening/Ovrly (Vancil Rd-LA 34)	$19,422
		4400021325 / H.012837.5	I-10 New Orleans Master Plan	$58,758
		4400023690 / H.015590.5	LA 494: LA 6 To Blanchard Rd	$176,132
		4400025625 / H.014622.2	St. Nazaire Road Ext: LA 96 – Corne Road	$159,563
		4400024084 / H.009300.5	CMAR Contract for Hooper Road Widening (LA 3034 – LA 37)	$13,510
		H.003931	I-10 Calcasieu River Bridge P3 Project ***(Majority of remaining work to be completed within 9 months)***	$1,260,000
		4400025047 / H.011358.2	US 190 (Vine Street) Reconstruction	$102,564
	Road	4400007175 / H.011328.2	I-49 South (Ricohoc to Berwick)	$269,615
		4400024307 / H.015052	I-20: Widening/Ovrly (Vancil Rd-LA 34)	$12,261
		4400019010 / H.010116.5	LA 1088: Soult and Trinity Roundabouts	$96,233
		4400025022 / Multiple State Project Nos	IJJA Off System Bridge Program – Road Task Orders	$26,082
		H.003931	I-10 Calcasieu River Bridge P3 Project ***(Majority of remaining work to be completed within 9 months)***	$1,680,000

ARCADIS	ITS	4400025921 / H.015938.1	Transportation Systems Management and Operations (TSMO) Program	$80,680
		4400029193 / H.004100.5 and H.004100.6	I-10: LA 415 to Essen Lane on I-10 and I-12 ***(50% of remaining work is complete and invoiced but awaitng payment)***	$207,138
		4400026457 / H.013868.5	ITS MGMT, OPERATIONS, & MAINT	$183,227
		4400026457 / H.013868.6 (A)	ITS MGMT, OPERATIONS, & MAINT	$42,031
		4400026457 / H.013868.6 (B)	ITS MGMT, OPERATIONS, & MAINT	$100,462
		4400026457 / H.013868.5 (2025 Renewal)	ITS MGMT, OPERATIONS, & MAINT	$861,255
		4400026457 / H.013868.6 (A) (2025 Renewal)	ITS MGMT, OPERATIONS, & MAINT	$943,804
		4400026457 / H.013868.6 (B) (2025 Renewal)	ITS MGMT, OPERATIONS, & MAINT	$228,024
		H.003931	I-10 Calcasieu River Bridge P3 Project ***(Majority of remaining work to be completed within 9 months)***	$294,000
	Environmental	4400007175 / H.011328.2	I-49 South (Ricohoc to Berwick)	$926,274
		4400019338 / Multiple State Project Nos	Rural Bridge Replacement Initiative Phase II	$52,764
		4400009281 / H.009932	US 80 Widening: Vancil Road to Well Road EA	$5,343
		4400025022 / H.015498.5 Recall 102225	Park Road Over Lagoon	$35,000
		4400025022 / Multiple State Project Nos	IJJA Off System Bridge Program – Env. Task Orders	$183,549
		4400025625 / H.014622.2	St. Nazaire Road Ext: LA 96 – Corne Road	$56,062
		H.003931	I-10 Calcasieu River Bridge P3 Project ***(Majority of remaining work to be completed within 9 months)***	$336,000
		4400025047 / H.011358.2	US 190 (Vine Street) Reconstruction	$8,509
	Bridge	4400029193 /H.004100.5 and H.004100.6	I-10: LA 415 to Essen Lane on I-10 and I-12 ***(50% of remaining work is complete and invoiced but awaitng payment)***	$431,538

ARCADIS		4400025022 / Multiple State Project Nos	IJJA Off System Bridge Program – Bridge Task Orders	$20,498
		H.003931	I-10 Calcasieu River Bridge P3 Project ***(Majority of remaining work to be completed within 9 months)***	$630,000
	CE&I/OV	4400029193 / H.004100.5 and H.004100.6	I-10: LA 415 to Essen Lane on I-10 and I-12	$207,138
		4400027361 / H.011220.6, H.012901.6, H.010634.6	US 90 Engineering Support	$256,767
		4400016923 / H.012901.6, H.010634.6	US 90Z (Bodenger Blvd. – Stumpf Blvd.)	$192,319
		4400025046 / H.013710.6	I-10: US 61 to LaPlace ITS Deployment (CE&I)	$35,297
		4400025665 / H.013482.6	I-10 WBR Queue Warning System ***(Waiting on a supplement)***	186,918
	Data Colle-ction	4400021325 / H.012837.5	I-10 New Orleans Master Plan	$3,751
		4400023812 / H.015377.5	Weigh Station Assessment	$358,375

Firm(s) ALL FIRMS MUST BE REPRESENTED IN THIS TABLE	Discipline(s) *	Contract Number and State Project Number	Project Name	Remaining Unpaid Balance**
Ardaman & Associates, Inc.	Geotech	4400029193 / H.004100.5	I-49 Connector, Lafayette	$338,752
		44-18899; H.004791	LA 23: Belle Chasse Bridge & Tunnel (HBI)	$40,897
		44-19013; H.004100.5 & .6	I-10 CMAR Design Continuation: LA 415 TO ESSEN ON I-10 & I-12	$692,204
		H.004435	I-12 to Bush Construction Phase	$47,370
		44-8671; H.009266	I-10 Widening: LA 73 to LA 30	$25,760
		44-19013; H.002244.5	Boudreaux Canal Bridge (LA 56)	$180
		44-17438; H.013284	MRB GBR LA 1 to LA 30 Connector	$2,781
		44-6189; H.004647.6	I-20 Mississippi River Bridge at Vicksburg	$1,651,052

Ardaman & Associates, Inc.	Geotech	4400029193 / H.004100.5 and H.004100.6	LA 47 @ Bayou Bienvenue Bridge Replacement PDA	$23,059
		44-25025; H.015337, H.015452, H.015453, H.015454, H.015455, H.015456, H.015457, H.015458, H.015459, H.015460, H.015461, H.015462, H.015463	IIJA	$77,119
		44-24652; H.014265.5	N River Road Irving Branch	$65
		44-24652; H.012533.5	LA 1252 Bayou Pt Brule Bridge	$39
		44-24652, H.012607.5	Henderson Bayou Bridge LA 933	$65
		44-24652, H.015568.5, H.015569.5	Pelican Point Roundabout	$45,870
		44-24652; H.012842.5	LA 124 Ext. Larto Lake	$152
		44-21519; H.012030.5	KCS RR Overpasses US 371	$44,036
		44-21887; H.012542, H.012453, H.012544,	Replacement of 15 Bridges	$579,165
		44-6189; H.016313.5, H.016314.5, H.016315.5, H.016316.5, H.016317.5, H.016318.5, H.016319.5, H.016320.5, H.016325.5	Culvert Replacements	$187,765
		H.015429, H.015430, H.015432	IIJA	$14,545

20 CERTIFICATIONS/LICENCES

STAFF CERTIFICATION CHART SUMMARY

Names	Firm	Relevant Certification
Akhil Chauhan, PE, PTOE, PTP, PMP *Meets MPR No. 1 & 2*	ARCADIS	Traffic Engineering Analysis Process & Report Module 1, 2, & 3
Jose L. Rodriguez, PE *Meet MPR No. 3*		ATSSA Traffic Control Supervisor
Ari Deitch, PE, PTOE, PTP, RSP1		Traffic Engineering Analysis Process & Report Modules 1, 2, & 3 ATSSA Traffic Control Supervisor Highway Safety Manual Workshop
David Fulks, PE		Highway Safety Manual Training (Completed 2011)
Kester Hollier, PE, PTOE		Traffic Engineering Analysis Process & Report Modules 1, 2, & 3
Max Aguirre, PhD, PE, PTOE, RSP2I		ATSSA Traffic Control Supervisor Traffic Engineering Analysis Process & Report Modules 1, 2, & 3
Meredith Guidry, PE, RSP		Traffic Engineering Analysis Process & Report Modules 1, 2, & 3
Jason Morrell, PWS		Professional Wetland Scientist - #2319 / Exp. 04/2028
Megan Bourgeois, PE	Ardaman & Associates, Inc.	ATSSA Traffic Control Supervisor ATSSA Certified Flagger
Robert Jewell *Meets MPR No. 6 & 7*		PDCA – Dynamic Measurement and Proficiency Test ATSSA Traffic Control Supervisor ATSSA Certified Flagger
Jarmon King		PDCA – Dynamic Measurement and Proficiency Test ATSSA Traffic Control Supervisor ATSSA Certified Flagger
AASHTO Certificate of Accreditation		

Certificate of Completion

presented to

Akhil Chauhan

for completing the

Traffic Engineering Analysis Process & Report
Module 1

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

Professional Development Hours (PDHs) Awarded: 4

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Akhil Chauhan

for completing the

Traffic Engineering Analysis Process & Report
Module 2

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

Professional Development Hours (PDHs) Awarded: 4

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Akhil Chauhan

for completing the

Traffic Engineering Analysis Process & Report
Module 3

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

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

ATSSA
Safer Roads Save Lives

Jose Rodriguez

has attended
Louisiana Traffic Control Supervisor Refresher

Completed: 29-MAR-2024

CEU (If Applicable): 0.75

ATSSA provides training and certification but neither constitutes employment by ATSSA.

This certificate provides proof of training, not certification.

American Traffic Safety Services Association
ATSSA.com

Certificate of Completion

presented to

Ari Deitch

for completing the

Traffic Engineering Analysis Process & Report
Module 1

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

Professional Development Hours (PDHs) Awarded: 2

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Ari Deitch

for completing the

Traffic Engineering Analysis Process & Report
Module 2

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

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Ari Deitch

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: October 15, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

ATSSA

Safer Roads Save Lives

Ari Deitch

has attended
Louisiana Traffic Control Supervisor

Completed: 22-FEB-2024

CEU (If Applicable): 1.5

ATSSA provides training and certification but neither constitutes employment by ATSSA.

This certificate provides proof of training, not certification.

ATSSA CERTIFIED

American Traffic Safety Services Association
ATSSA.com

Certificate of Professional Development Hours

presented to

Ari Deitch

for attending the

Highway Safety Manual Workshop

12 PDHs

on

May 2-3, 2013 Baton Rouge, Louisiana

Authorized By

Research, Technology Transfer, Education and Training

The American Traffic Safety Services Association

Hereby recognizes that

David Fulks

has attended

Traffic Control Supervisor

Training Course

10/26/2012
Date

Baton Rouge, LA
Location

ATSSA
SAFER ROADS SAVE LIVES

Training & Products Dept. Director

President, CEO

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DOTD

DESTINATION ZERO DEATHS

This certificate of training is presented to

DAVID FULKS

In Recognition of Attending

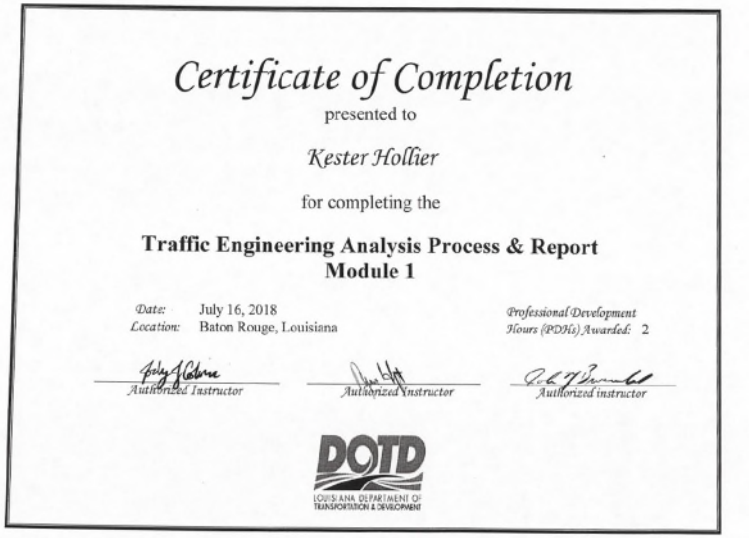
Highway Safety Manual Workshop

Baton Rouge, Louisiana

18.0 Professional Development Hours

Elizabeth Wemple, PE
Eric Tang, PE
Instructor

June 1-3, 2011
Date



Certificate of Completion

presented to

Kester Hollier

for completing the

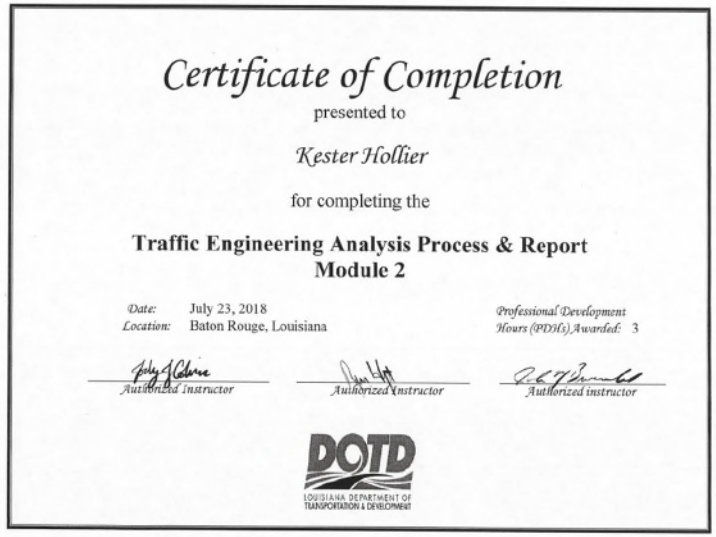
Traffic Engineering Analysis Process & Report
Module 1

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

Professional Development Hours (PDHs) Awarded: 2

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



Certificate of Completion

presented to

Kester Hollier

for completing the

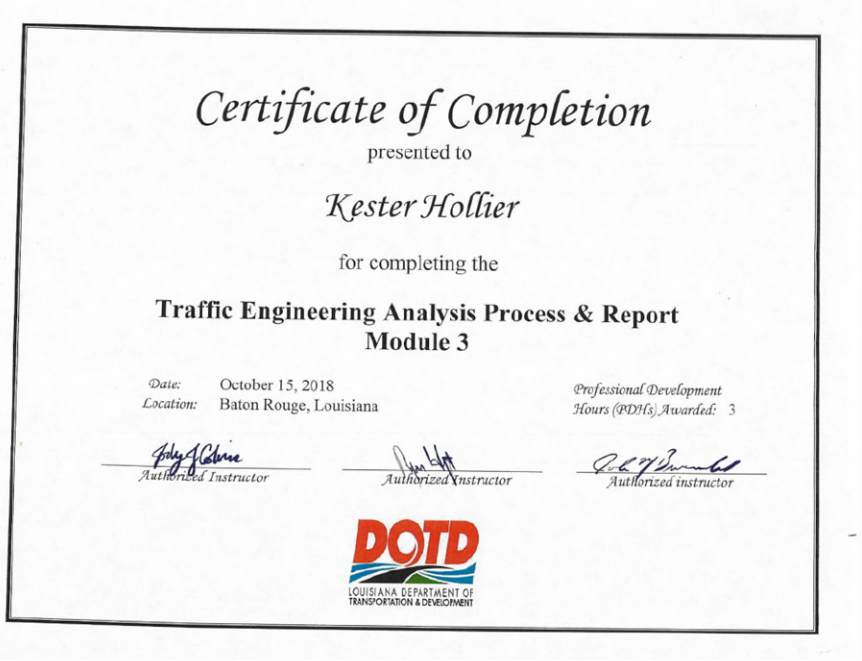
Traffic Engineering Analysis Process & Report
Module 2

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

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



Certificate of Completion

presented to

Kester Hollier

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: October 15, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized Instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Transportation Professional Certification Board, Inc.

certifies that

Max Aguirre

has met all of the requirements established by the Certification Board to use the title of

Road Safety Professional

unless withdrawn by the Certification Board and subject to the provisions for renewal.
Certificate number 636 issued in Washington, DC, USA

8/3/2021

Deborah L Snyder
Deborah Snyder
Chair

RSP1 ROAD SAFETY PROFESSIONAL

Jeffrey F. Paniati
Jeffrey F. Paniati
Executive Director

ATSSA TRAINED

PROOF OF TRAINING

THIS CERTIFICATE HEREBY RECOGNIZES THAT

Max Aguirre
has attended
Traffic Control Supervisor-LA State Specific
Training Course

9/8/2021 to 9/9/2025
Training Valid Through

Director of Training

Baton Rouge, LA
Location

President, CEO

ATSSA provides training and certification but neither constitutes employment by ATSSA.

ATSSA American Traffic Safety Services Association ATSSA.com

Certificate of Completion

presented to

Max Aguirre

for completing the

Traffic Engineering Analysis Process & Report
Module 1

Date: January 29, 2020
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 2.5

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Max Aguirre

for completing the

Traffic Engineering Analysis Process & Report
Module 2

Date: January 29, 2020
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3.5

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Max Aguirre

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: January 30, 2020
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3.5

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Transportation Professional Certification Board, Inc.

certifies that

Meredith Guidry

has met all of the requirements established by the Certification Board to use the title of

Road Safety Professional

unless withdrawn by the Certification Board and subject to the provisions for renewal.
Certificate number 861 issued in Washington, DC, USA

7/13/2022

Deborah L Snyder
Deborah Snyder
Chair

RSP ROAD SAFETY PROFESSIONAL

Jeffrey F. Paniati
Executive Director

Certificate of Completion

presented to

Meredith Guidry

for completing the

Traffic Engineering Analysis Process & Report
Module 1

Date: March 10, 2021
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Meredith Guidry

for completing the

Traffic Engineering Analysis Process & Report
Module 2

Date: March 10, 2021
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Certificate of Completion

presented to

Meredith Guidry

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: March 11, 2021
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Society of Wetland Scientists
Professional Certification Program, Inc

renews the designation

Professional Wetland Scientist

For

Jason E. Morrell

In recognition of all the professional requirements approved by the Society of Wetland Scientists Certification Renewal Program, and verified by the Society's Certification Renewal Review Panel.
Professional Wetland Scientist Number 2319 issued on 4/1/2013 and recertified on 5/2/2023.
Due to recertify again by 4/1/2028.

Rob McInnes, PWS
President

Pat Frost, PWS
Certification Renewal Chair

U.S. Department of Transportation
Federal Highway Administration

National Highway Institute

Certificate of Training

JASON MORRELL

has participated in

FHWA-NHI-142005 NEPA and the Transportation Decisionmaking Process

hosted by

LA DOTD/LTRC

Date: *December 3-5, 2018* ***Hours of Instruction:*** 18
Location: *Baton Rouge, LA*

Instructor

Instructor

Local Coordinator

Valerie Briggs, Director
National Highway Institute

U.S. Department Of Transportation
Federal Highway Administration

National Highway Institute

NATIONAL HIGHWAY INSTITUTE
Training Solutions for Transportation Excellence

Certificate of Training

Jason Morrell

has participated in

FHWA-NHI-142047 Water Quality Management of Highway Runoff

hosted by

Georgia Department of Transportation

Date: *October 25-26, 2011* ***Hours of Instruction:*** *12 hours*
Location: *Atlanta, GA*

Instructor

Instructor

Local Coordinator

Richard Barnaby, Director
National Highway Institute

AASHTO ACCREDITED

Certificate of Accreditation

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AASHTO

Ardaman & Associates, Inc.

in

Baton Rouge, Louisiana, USA

has demonstrated proficiency for the testing of construction materials and has conformed to the requirements established in AASHTO R 18 and the AASHTO Accreditation policies established by the AASHTO Committee on Materials and Pavements.

The scope of accreditation can be viewed on the Directory of AASHTO Accredited Laboratories (aashtoresource.org).

Jim Tymon,
AASHTO Executive Director

Matt Linneman,
AASHTO COMP Chair

This certificate was generated on 08/14/2025 at 3:48 PM Eastern Time. Please confirm the current accreditation status of this laboratory at aashtoresource.org/aap/accreditation-directory

Scope of AASHTO Accreditation for:

Ardaman & Associates, Inc.

in Baton Rouge, Louisiana, USA

Quality Management System

Standard:		Accredited Since:
R18	Establishing and Implementing a Quality System for Construction Materials Testing Laboratories	11/09/2009
C1077 (Aggregate)	Laboratories Testing Concrete and Concrete Aggregates	09/17/2021
C1077 (Concrete)	Laboratories Testing Concrete and Concrete Aggregates	09/17/2021
D3740 (Soil)	Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction	12/26/2013

This certificate was generated on 08/14/2025 at 3:48 PM Eastern Time. Please confirm the current accreditation status of this laboratory at aashtoresource.org/aap/accreditation-directory

Scope of AASHTO Accreditation for:

Ardaman & Associates, Inc.

in Baton Rouge, Louisiana, USA

Soil

Standard:	Accredited Since:
T288 Minimum Soil Resistivity	01/31/2019
D421 Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test	11/09/2009
D422 Particle Size Analysis of Soils by Hydrometer	11/09/2009
D698 The Moisture-Density Relations of Soils Using a 5.5 lb [2.5 kg] Rammer and a 12 in. [305 mm] Drop	06/16/2016
D854 Specific Gravity of Soils	02/14/2012
D1140 Amount of Material in Soils Finer than the No. 200 (75-µm) Sieve	02/14/2012
D1557 Moisture-Density Relations of Soils Using a 10 lb [4.54 kg] Rammer and an 18 in. [457 mm] Drop	06/16/2016
D2166 Unconfined Compressive Strength of Cohesive Soil	06/16/2016
D2216 Laboratory Determination of Moisture Content of Soils	11/09/2009
D2434 Permeability of Granular Soils (Constant Head)	04/27/2022
D2435 One-Dimensional Consolidation Properties of Soils Using Incremental Loading	02/14/2012
D2487 Classification of Soils for Engineering Purposes (Unified Soil Classification System)	12/26/2013
D2488 Description and Identification of Soils (Visual-Manual Procedure)	12/26/2013
D2850 Unconsolidated, Undrained Compressive Strength of Cohesive Soils in Triaxial Compression	02/14/2012
D2937 Density of Soil in Place by the Drive-Cylinder Method	01/31/2019
D2974 Determination of Organic Content in Soils by Loss on Ignition	02/14/2012
D4318 Determining the Liquid Limit of Soils (Atterberg Limits)	11/09/2009
D4318 Plastic Limit of Soils (Atterberg Limits)	11/09/2009
D4643 Determination of Water (Moisture) Content of Soil by Microwave Oven Heating	01/31/2019
D4972 pH Testing of Soils	12/26/2013
D5084 Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter	12/26/2013
D6913 Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis	04/27/2022
D6938 In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)	01/31/2019

This certificate was generated on 08/14/2025 at 3:48 PM Eastern Time. Please confirm the current accreditation status of this laboratory at aashtoresource.org/aap/accreditation-directory

Scope of AASHTO Accreditation for:

Ardaman & Associates, Inc.

in Baton Rouge, Louisiana, USA

Aggregate

Standard:	Accredited Since:
C117 Materials Finer Than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing	01/31/2019
C127 Specific Gravity and Absorption of Coarse Aggregate	09/17/2021
C128 Specific Gravity (Relative Density) and Absorption of Fine Aggregate	09/17/2021
C136 Sieve Analysis of Fine and Coarse Aggregates	01/31/2019
C566 Total Moisture Content of Aggregate by Drying	01/31/2019
C702 Reducing Samples of Aggregate to Testing Size	01/31/2019
D75 Sampling Aggregate	01/31/2019

Scope of AASHTO Accreditation for:

Ardaman & Associates, Inc.

in Baton Rouge, Louisiana, USA

Concrete

Standard:		Accredited Since:
C31 (Cylinders)	Making and Curing Concrete Test Specimens in the Field	09/17/2021
C39	Compressive Strength of Cylindrical Concrete Specimens	09/17/2021
C138	Density (Unit Weight), Yield, and Air Content of Concrete	09/17/2021
C143	Slump of Hydraulic Cement Concrete	09/17/2021
C172	Sampling Freshly Mixed Concrete	09/17/2021
C231	Air Content of Freshly Mixed Concrete by the Pressure Method	09/17/2021
C511	Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the testing of Hydraulic Cements and Concretes	01/12/2022
C1064	Temperature of Freshly Mixed Portland Cement Concrete	09/17/2021
C1231 (6000 psi and below)	Use of Unbonded Caps in Determination of Compressive Strength of Hardened Concrete Cylinders	09/17/2021

ATSSA
Safer Roads Save Lives

Megan Bourgeois

has attended
Louisiana Traffic Control Supervisor Refresher

Completed: 21-JUN-2024

CEU (If Applicable): 0.75

ATSSA provides training and certification but neither constitutes employment by ATSSA.

This certificate provides proof of training, not certification.

American Traffic Safety Services Association
ATSSA.com

ATSSA
Safer Roads Save Lives

Megan Bourgeois

has attended
National Flagger Certification Training Course

Completed: 15-AUG-2024

CEU (If Applicable): 0

ATSSA provides training and certification but neither constitutes employment by ATSSA.

This certificate provides proof of training, not certification.

American Traffic Safety Services Association
ATSSA.com

ATSSA

Safer Roads Save Lives

Robert Jewell

has attended
Louisiana Traffic Control Supervisor Refresher

Completed: 23-AUG-2024

CEU (If Applicable): 0.75

ATSSA provides training and certification but neither constitutes employment by ATSSA.

This certificate provides proof of training, not certification.

American Traffic Safety Services Association
ATSSA.com

ATSSA
Safer Roads Save Lives

ATSSA Corporate Office
15 Riverside Parkway
Fredericksburg, VA 22406
540-368-1701 | ATSSA.com

ATSSA Washington D.C. Office
512 8th Street, SE
Washington, DC 20003

Dear Certified Flagger:

Enclosed, please find your card signifying you as an ATSSA Certified Flagger. This card should be carried and presented to employers while performing work on our nation's roadways. Please be aware that the card is not valid without a photo I.D.

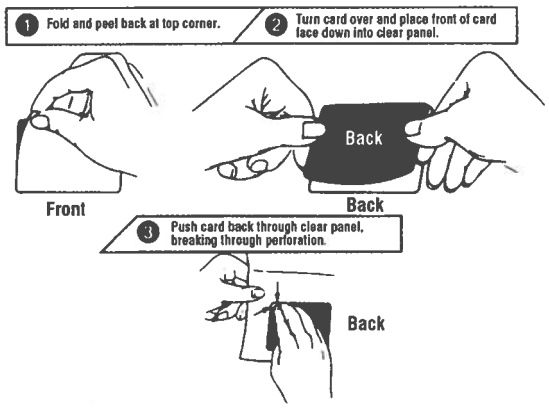
We commend you on your decision to become an ATSSA Certified Flagger. This distinction reflects that you have been trained by the leader in roadway safety and entitles you to be listed on our National Flagger Database. Please review your state requirements for expiration of your flagger card.

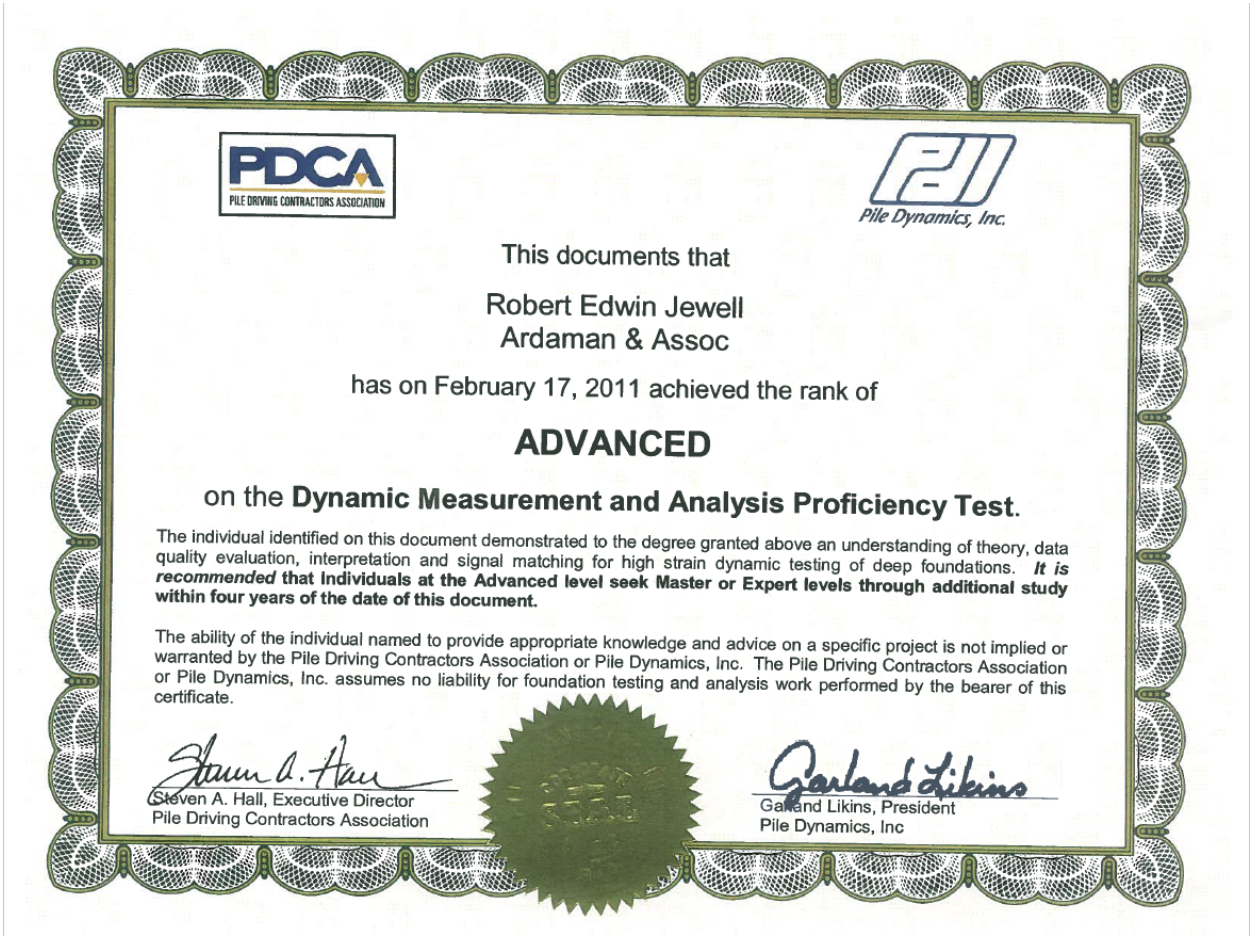
Once again, ATSSA thanks you for your dedication to ensuring that our work zones are safe and that lives will be saved with proper training. Please visit our website at ATSSA.com for additional training courses and work zone safety products.

Sincerely,

Clark Thomas
VP of Learning

Laminating the front of your card with Dual Laminate:





PDCA
PILE DRIVING CONTRACTORS ASSOCIATION

Pile Dynamics, Inc.

This documents that

Robert Edwin Jewell
Ardaman & Assoc

has on February 17, 2011 achieved the rank of

ADVANCED

on the **Dynamic Measurement and Analysis Proficiency Test.**

The individual identified on this document demonstrated to the degree granted above an understanding of theory, data quality evaluation, interpretation and signal matching for high strain dynamic testing of deep foundations. ***It is recommended* that Individuals at the Advanced level seek Master or Expert levels through additional study within four years of the date of this document.**

The ability of the individual named to provide appropriate knowledge and advice on a specific project is not implied or warranted by the Pile Driving Contractors Association or Pile Dynamics, Inc. The Pile Driving Contractors Association or Pile Dynamics, Inc. assumes no liability for foundation testing and analysis work performed by the bearer of this certificate.

Steven A. Hall, Executive Director
Pile Driving Contractors Association

Garland Likins, President
Pile Dynamics, Inc

ATSSA TRAINED

PROOF OF TRAINING

THIS CERTIFICATE HEREBY RECOGNIZES THAT

Jarmon King

has attended

Louisiana Traffic Control Supervisor

Training Course

11/8/2023 to 11/8/2027
Training Valid Through

Baton Rouge, LA
Location

Vice President of Education and Technical Services

President, CEO

ATSSA provides training and certification but neither constitutes employment by ATSSA.

ATSSA American Traffic Safety Services Association ATSSA.com

ATSSA
SAFER ROADS SAVE LIVES

Dear Certified Flagger:

Enclosed, please find your card signifying you as an ATSSA Certified Flagger. This card should be carried and presented to employers while performing work on our nation's roadways. Please be aware that the card is not valid without a Photo I.D.

We commend you on your decision to become an ATSSA Certified Flagger. This distinction reflects that you have been trained by the leader in roadway safety and also entitles you to be listed on our National Flagger Database. Please review your state requirements for expiration of your flagger card. Also, please inform us of any errors or changes in your name or address so we may keep our records up to date.

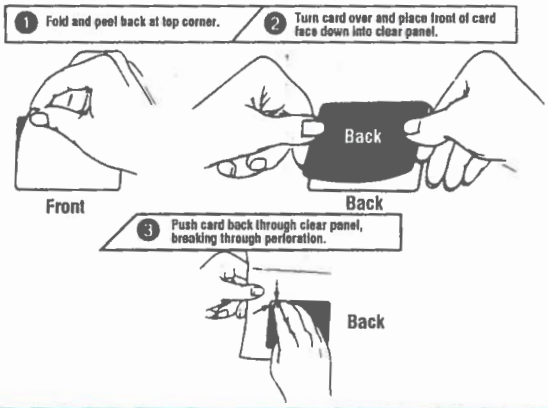
Once again, ATSSA thanks you for your dedication to ensuring that our work zones are safe and that lives will be saved with proper training. Please visit our website at www.atssa.com for additional training courses and work zone safety products.

Sincerely,

Donna M. Clarke

VP of Education and Technical Services

Laminating the front of your card with Dual Laminate:



ATSSA American Traffic Safety Services Association
SAFER ROADS SAVE LIVES

This is to affirm that

JARMON KING

has satisfied the requirements to be designated as a

CERTIFIED FLAGGER

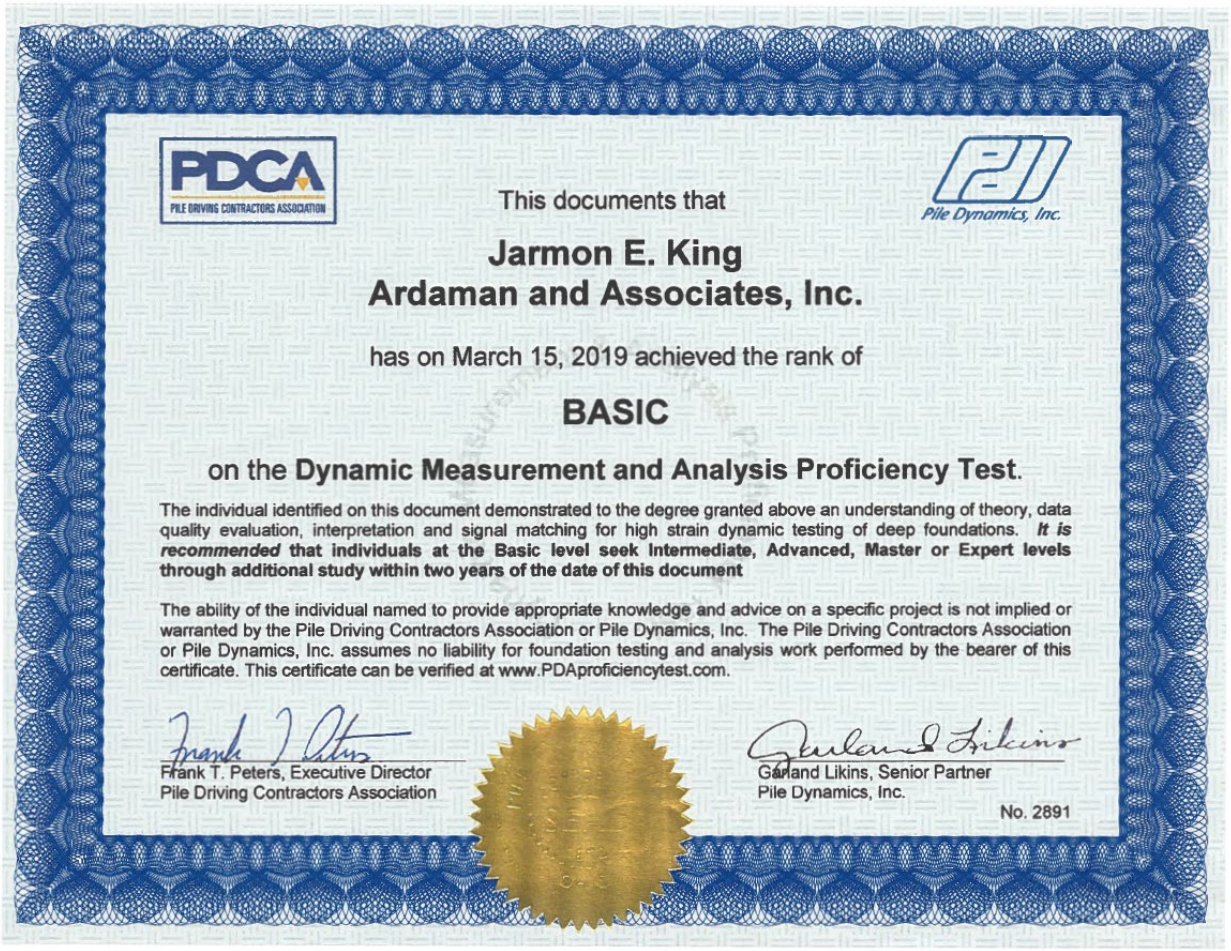
Issue Date 5/29/2024 — **Debbie Purcella**

Exp. Date 5/29/2028 — *Instructor Name*

State Issued LA — Debbie Purcella — *Instructor Signature*

V0000258173 — Verify at Flagger.com

American Traffic Safety Services Association
15 Riverside Parkway, Suite 100 • Fredericksburg, VA 22406-1077
Office: 540-368-1701 • Toll-Free: 800-272-8772 • Fax: 540-368-1717
www.atssa.com



PDCA
PILE DRIVING CONTRACTORS ASSOCIATION

This documents that

Pile Dynamics, Inc.

Jarmon E. King
Ardaman and Associates, Inc.

has on March 15, 2019 achieved the rank of

BASIC

on the **Dynamic Measurement and Analysis Proficiency Test.**

The individual identified on this document demonstrated to the degree granted above an understanding of theory, data quality evaluation, interpretation and signal matching for high strain dynamic testing of deep foundations. ***It is recommended*** **that individuals at the Basic level seek Intermediate, Advanced, Master or Expert levels through additional study within two years of the date of this document**

The ability of the individual named to provide appropriate knowledge and advice on a specific project is not implied or warranted by the Pile Driving Contractors Association or Pile Dynamics, Inc. The Pile Driving Contractors Association or Pile Dynamics, Inc. assumes no liability for foundation testing and analysis work performed by the bearer of this certificate. This certificate can be verified at www.PDAproficiencytest.com.

Frank T. Peters, Executive Director
Pile Driving Contractors Association

Garland Likins, Senior Partner
Pile Dynamics, Inc.

No. 2891

State of Louisiana Secretary of State

COMMERCIAL DIVISION
225.925.4704

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

Name	Type	City	Status
ARDAMAN & ASSOCIATES, INC.	Business Corporation (Non-Louisiana)	ORLANDO	Active

Previous Names

Business: ARDAMAN & ASSOCIATES, INC.
Charter Number: 34396031F
Registration Date: 12/13/1991

Domicile Address
8008 SOUTH ORANGE AVENUE
ORLANDO, FL 32809

Mailing Address
3475 E. FOOTHILL BLVD.
PASADENA, CA 91107

Principal Business Office
8008 SOUTH ORANGE AVENUE
ORLANDO, FL 32809

Registered Office in Louisiana
3867 PLAZA TOWER DR.
BATON ROUGE, LA 70816

Principal Business Establishment in Louisiana
316 HIGHLANDIA DR.
BATON ROUGE, LA 70816

Status

Status: **Active**
Annual Report Status: **In Good Standing**
Qualified: 12/13/1991
Last Report Filed: 11/19/2024
Type: Business Corporation (Non-Louisiana)

Registered Agent(s)

Agent: C T CORPORATION SYSTEM
Address 1: 3867 PLAZA TOWER DR.
City, State, Zip: BATON ROUGE, LA 70816
Appointment Date: 12/13/1991

Officer(s)

Additional Officers: No

21 QA/QC PLAN:

ARCADIS Design & Consultancy for natural and built assets

QUALITY CONTROL / QUALITY ASSURANCE

Bridge Design

US 11 Norfolk Southern RR Overpass (HBI)

Contract No. 4400032800

State Project No. H.000688.5

F.A.P. No. H000688

Route: US 11

St. Tammany Parish, LA

,

ARCADIS Design & Consultancy for natural and built assets

TABLE OF CONTENTS

1. Introduction

Project Description

The Consultant shall provide engineering and related services to reconstruct and widen US 11 from I-12 to US 190, including replacement of the US 11 bridge over the Norfolk-Southern Railroad. The engineering services will be primarily in accordance with the design and phasing presented in the Environmental Assessment (EA) document.Project Team Organization

Arcadis U.S., Inc. will be the prime consultant for the project. Arcadis will manage the contract and is responsible for Bridge Design, Roadway Design, Traffic, and overall QA/QC of the design documents.

, Ardaman Engineers will be responsible for As the prime, Arcadis will be fully responsible for the overall QA/QC of the project. The key team members and roles are described below, but listed here for easy reference:

Title/Role	Name	Company
Project Manager	Victor Sanchez, PE	Arcadis
Bridge Design Lead	Osama Shahawy, PE	Arcadis
Roadway Design Lead	Jose L. Rodriguez, PE	Arcadis
Quality Review	Bob Beasley, PE	Arcadis

Staff qualifications for QC/QA roles and qualification information for team support staff are described in the 24-102 form for this proposal.

Project Team Communications/Coordination. As Project Manager, Mr. Victor Sanchez, PE will be the team's administrative and technical point of contact for LADOTD. All team communications to LADOTD will be through Mr. Sanchez or his designee on a case-by-case basis or as requested by LADOTD.

The details of the QC/QA plan described below apply to the current project based on the scope of services requested. The overall QC/QA plan shall be amended in case additional services are added to the contract through amendments or extensions.

2. Design Criteria

The design criteria and the project objectives will be discussed in the Consultant Kick-Off Meeting. The design criteria will be created in accordance with the latest versions of the following documents:

- AASHTO LRFD Bridge Design Specifications
- AREMA – Manual for Railway Engineering
- LADOTD Bridge Design Manuals
- LADOTD Bridge Design Technical Memoranda
- LADOTD Minimum Design Guidelines
- AASHTO Geometric Design of Highways and Streets

The design criteria shall include.

- Governing Design and Construction Specifications and Other References
- Design Assumptions and Design Exceptions
- General Information
- Design Factors
- Design Loads
- Limit States
- Bridge Barrier
- Guardrail
- Approach Slab
- Deck and Deck Drainage
- Superstructure
- Substructure
- Piles/Drilled Shafts
- Walls
- Geotechnical Design
- Software

3. Design Team

As project manager, **Victor Sanchez, PE** of Arcadis; will be responsible for Quality Assurance, i.e., assuring that the QC Plan is implemented. He will also serve as the administrative and technical point of contact for the Arcadis team.

Mr. Osama Shahawy, PE of Arcadis, will lead the structural design team and for the replacement of the existing overpass on the US 11. Mr. Shahawy's qualifications are clearly summarized in the attached 24-102 forms. He will be responsible for the preliminary and final design, as well as the cost estimation, of the superstructure and substructure for the new bridge structures.

Mr. Jose L. Rodriguez, PE, will lead the roadway design efforts for the project. He and his team are responsible for carrying out the roadway and geometric design. His credentials are also well highlighted in the relevant section of the 24-102 form

Mr. Bob Beasley, PE from Arcadis, will lead the overall QA/QC review team. Mr. Beasley will perform a detailed review of the contract documents, including plan sets, specifications, etc. Their credentials are also highlighted in the relevant section of the 24-102 form.

The design teams mentioned above are responsible for the development of the plan & profile plans, preliminary and final design calculations, special provisions, and cost estimates for their respective disciplines. The designers are also required to follow the design criteria that will be developed for the project.

4. Preliminary and Final Bridge Plans Development

Before design efforts are initiated, detailed design criteria for roadway and bridge structures shall be proposed and approved by the LADOTD. Approval will be memorialized in a meeting/email or call record. Any changes to the design criteria will be reflected in a revised version of the design criteria that conforms to the expectations outlined in LADOTD Policy Appendix A. Any changes will be distributed to team members via the Project Manager. Calculations used in the design process will be maintained by the designer and will be consistent with the LADOTD calculation book checklist in Appendix B of the LADOTD QA/QC Policy. Key meeting decisions and communicated information will be memorialized in meeting records and shall be circulated via email to the design team.
Both the designer and detailer are responsible for conducting an initial self-check of their own work product. They and other support staff preparing work product will be required to affix their name at "prepared by" to denote responsibility on the Arcadis QC/QA Acknowledgement Form. (See Section 6 for an example of form)

5. QC Team

Quality Control (QC) activities are those related to checking the accuracy and consistency of materials developed for the contract. The team of Arcadis and its sub-consultants is wholly responsible for all QC activities of team deliverables. LADOTD is not responsible for the quality of any contract deliverables. The preliminary and final design plans for the bridge structure and traffic will be checked by Mr. Beasley of Arcadis. Mr. Beasley has vast experience in LADOTD plans & specification preparation for a wide variety of projects nationwide. His qualifications are clearly summarized in the attached 24-102 form. He will also lead the QC effort to ensure compliance with the LADOTD design guidelines. As a design checker, he will perform a full technical review of the plan and profile drawings and the cost estimate. He will also ensure that the plans reflect the most current information shown in the design criteria.

6. QC Review

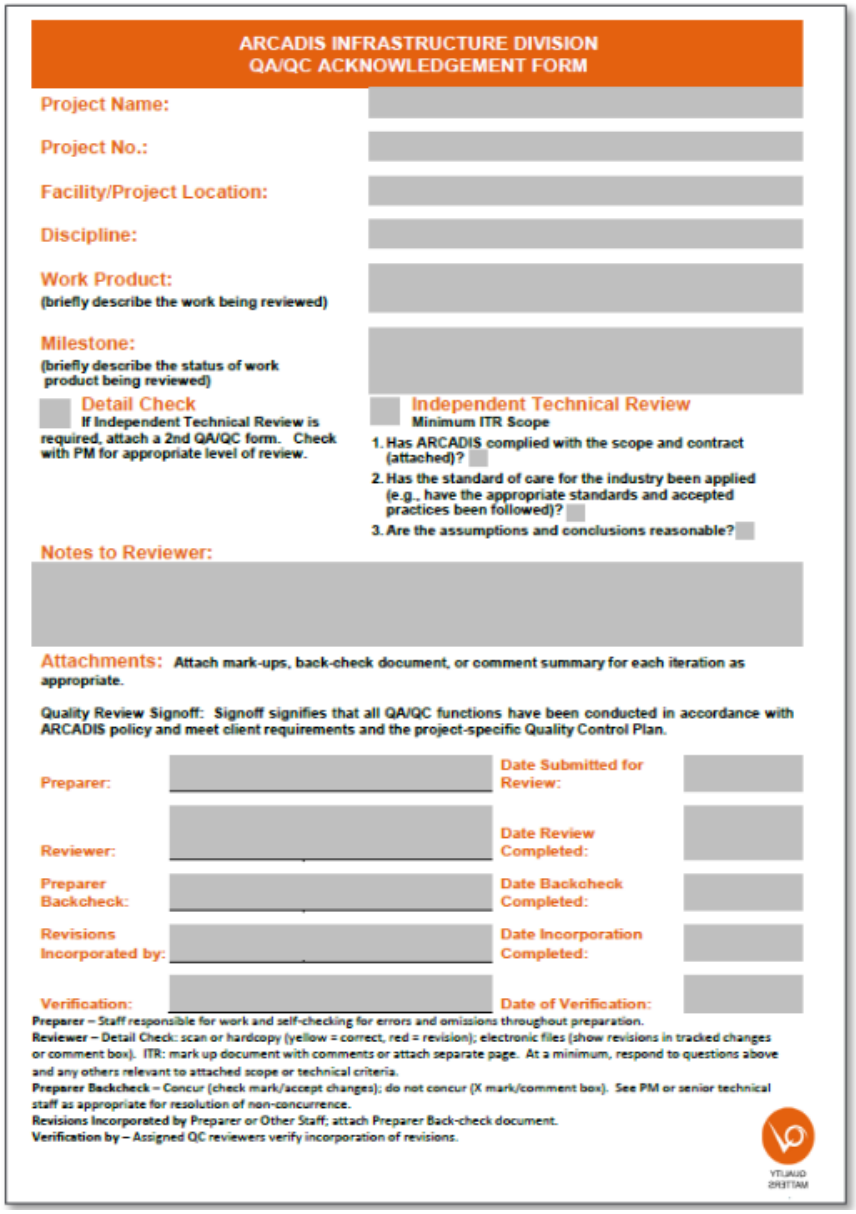
Based on Arcadis' established practice and workflow from previous LADOTD projects, it is recommended that the review be initiated and completed at the end of each phase. Individual pieces of the design, carried out throughout the project, shall be subjected to QC review before being transmitted or presented to LADOTD. A color-coding procedure will be used on plans, calculations, and report work products for the purpose of documenting responsibility and completion of work checking, back checking, comment incorporation, and change verification. The Arcadis Infrastructure Bridge Group color codes will be implemented for this entire project, which is explained below:

Color Code	Action	Responsibility
Yellow Highlight	Item is Correct	Checker/reviewer
Red Pencil	Delete, Error and Correction, Addition, Comment	Checker/reviewer
Green Pencil	Has been resolved, (use check); additional changes	Designer
Blue Pencil	Resolution of error or comment addressed and corrected on original document	Checker/reviewer
Orange Highlight	Revision has been made	CADD/other

LADOTD checklists will be used by both the design and QC teams in the preparation and review of project design criteria, final calculations, and the QA Packet. Arcadis utilizes the use of a Quality Matters QA/QC Acknowledgement Form to document milestone reviews, which is used in combination with QC stamps, providing lines for checker, author/designer resolution, and comment incorporation verification. This form will be used extensively during each QC review of individual design components involved in the project.

Proper QC procedures should minimize superseding calculations. However, any such calculations will be carefully coordinated by the Designer to ensure proper disposition. All such changes will be documented as appropriate on the Project Activity Log Sheet.

QUALITY MATTERS



ARCADIS INFRASTRUCTURE DIVISION
QA/QC ACKNOWLEDGEMENT FORM

Project Name:

Project No.:

Facility/Project Location:

Discipline:

Work Product:
(briefly describe the work being reviewed)

Milestone:
(briefly describe the status of work product being reviewed)

☐ Detail Check
If Independent Technical Review is required, attach a 2nd QA/QC form. Check with PM for appropriate level of review.

☐ Independent Technical Review
Minimum ITR Scope
1. Has ARCADIS complied with the scope and contract (attached)? ☐
2. Has the standard of care for the industry been applied (e.g., have the appropriate standards and accepted practices been followed)? ☐
3. Are the assumptions and conclusions reasonable? ☐

Notes to Reviewer:

Attachments: Attach mark-ups, back-check document, or comment summary for each iteration as appropriate.

Quality Review Signoff: Signoff signifies that all QA/QC functions have been conducted in accordance with ARCADIS policy and meet client requirements and the project-specific Quality Control Plan.

Preparer:		Date Submitted for Review:	
Reviewer:		Date Review Completed:	
Preparer Backcheck:		Date Backcheck Completed:	
Revisions Incorporated by:		Date Incorporation Completed:	
Verification:		Date of Verification:	

Preparer – Staff responsible for work and self-checking for errors and omissions throughout preparation.
Reviewer – Detail Check: scan or hardcopy (yellow = correct, red = revision); electronic files (show revisions in tracked changes or comment box). ITR: mark up document with comments or attach separate page. At a minimum, respond to questions above and any others relevant to attached scope or technical criteria.
Preparer Backcheck – Concur (check mark/accept changes); do not concur (X mark/comment box). See PM or senior technical staff as appropriate for resolution of non-concurrence.
Revisions Incorporated by Preparer or Other Staff; attach Preparer Back-check document.
Verification by – Assigned QC reviewers verify incorporation of revisions.

7. QA Information Package

Upon satisfactory completion of the design and detail checks, the designer is required to prepare the QA Information Package utilizing the LADOTD-approved checklist (Appendix C). This package includes the following items:

- QA information package checklist
- Calculation book
- Plans
- Special provisions including Non-Standard items
- Cost estimate
- Relevant documents, such as checklists, review comments, etc., that were used by the designer, design checker, detailer, and detail checker

The designer is responsible for providing this package to the Reviewer for his further use to submittal milestones. Should there be any revisions to the plans or calculations after this submittal, the designer shall revise the QA Information. Package and inform the Reviewer of the changes and provide him with the revised information.

8. QA Process

Quality Assurance (QA) activities are those related to reviewing work to ensure QC procedures are in place and effective. Arcadis is wholly responsible for all QA activities of team deliverables. Project Manager Victor Sanchez, PE, is ultimately responsible for ensuring that the QC Plan is implemented and that the Reviewer has completed all steps of the review. LADOTD is not responsible for assuring that the QC Plan is implemented or for maintaining documentation of QC reviews and related information. The team of Arcadis and its sub-consultants is solely responsible for maintaining all administrative and technical files for project archives.

Mr. Sanchez will coordinate with the Reviewer as required and maintain a record of QC forms including the LADOTD required checklists, QC/QA certification, Arcadis review forms, and other relevant information. Once the project manager confirms that the Reviewer has completed the QA process, design documents including design calculations, plans, special provisions and cost estimate shall be considered as final.

9. QC/QA Certificate

At the completion of the QA process by the Reviewer, the QC/QA certificate (Appendix D of the LADOTD Policy) shall be signed by the designer, design checker, detailer, detail checker, and reviewer. This form will be included in the project central files maintained by the Project Manager.

10. Archiving Design Files

Mr.Victor Sanchez,PE shall be responsible for transmitting all deliverables to the LADOTD. He will maintain all final deliverables' digital files on a USB thumb drive and ProjectWise. Paper copies of these materials will also be maintained by the Project Manager in the repository of project files and moved to off-site archives in accordance with LADOTD document retention policy and Arcadis' retention policies, as appropriate. Retained files will include final, approved deliverables, calculation books, plans, special provisions, cost estimate, and other pertinent documents in accordance with the Bridge Design Section records retention policy, as well as contract documentation, QC/QA records, correspondence, and other materials per Arcadis' records retention policy.

11. Reference Material

Arcadis will use the following reference materials in our QC/QA process:

- AASHTO LRFD Bridge Design Specifications
- LADOTD Bridge Design & Evaluation Manual
- LADOTD Bridge Design Technical Memoranda
- AREMA Manual for Railway Engineering
- LADOTD Roadway Design Procedures and Details
- LADOTD Minimum Design Guidelines
- AASHTO Geometric Design of Highways and Streets
- LADOTD Policy on Quality Control and Quality Assurance
- Arcadis Policy on Records Retention and Management
- Arcadis Infrastructure Division Quality Matters Program

12. Software

Computer based calculations will be completed only with use of the following list of pre-approved LADOTD Bridge Design Section software programs:

Software Name	Developer
Bridge Design	AASHTOware
Bridge Rating	AASHTOware
ConSpan	Bentley LEAP
MIDAS Civil	MIDAS USA
FB-Multiplier	BSI/Univ. of Florida
LEAP Bridge Enterprise	Bentley LEAP
L-Pile	Ensoft, Inc.
Mathcad	PTC, Inc.
RC-Pier	Bentley Leap
MicroStation	Bentley
CadConform	Altiva
Power Inroads	Bentley
Staad Pro	Bentley

Should other software be needed during the course of the contract, needs will be identified at the earliest opportunity, and a synopsis of the software, including its purpose, industry use, limitations, and other germane information, will be submitted to the State Bridge Design Engineer Administrator for consideration and approval for use.

13. Deliverables

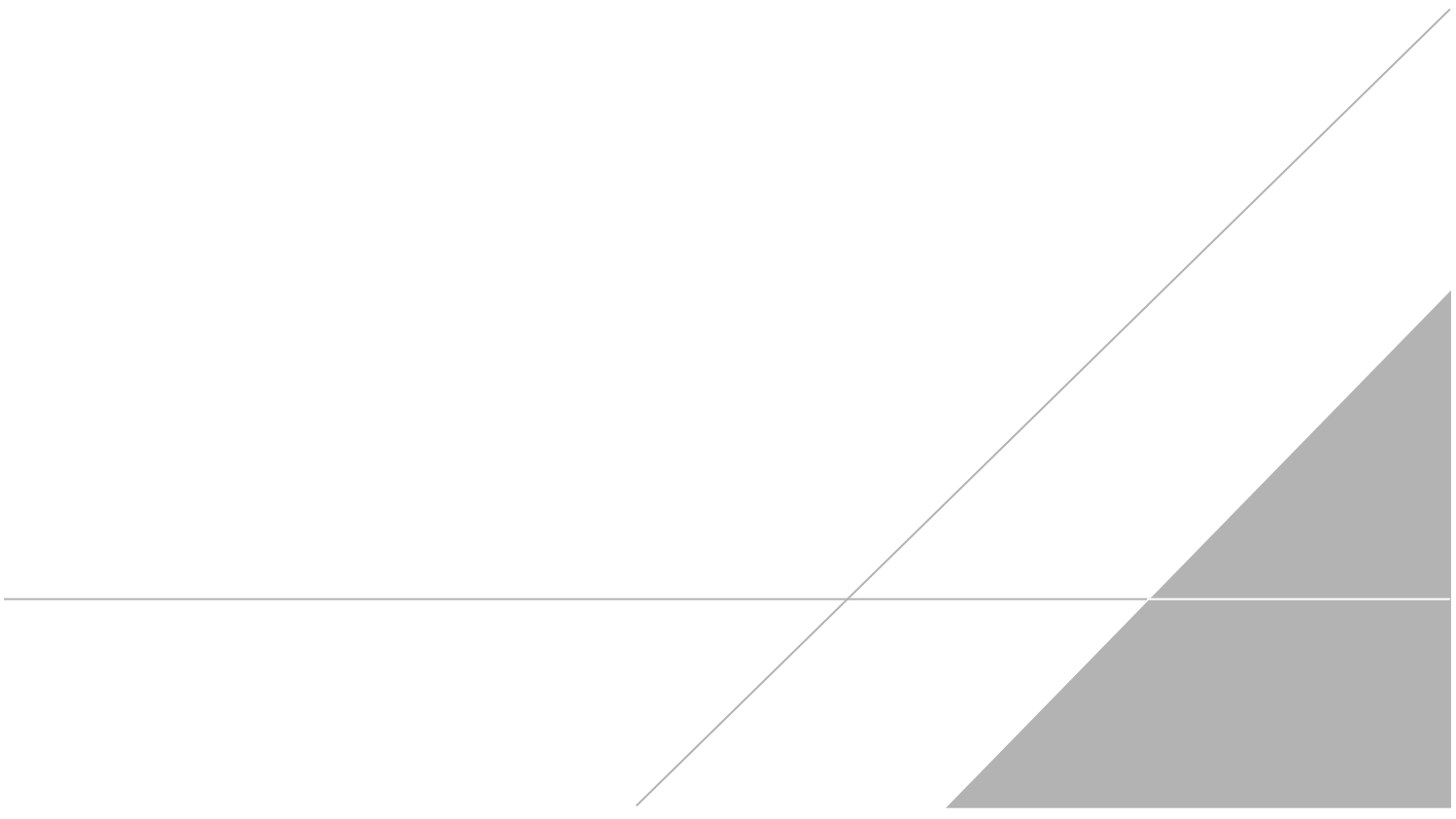
A deliverables schedule will be developed at the Consultant Project Kick-Off Meeting in accordance with other actions listed in the Consultant Project Kick-Off Meeting Agenda Checklist (Appendix H) of the

LADOTD Policy. This schedule will be reviewed regularly by the Project Manager, Mr. Victor Sanchez, PE for opportunities to reduce activity durations and expedite delivery.

Deliverables schedules, quality reviews, financials, and other topics are addressed on a monthly basis between Arcadis Project Managers and Operations Managers in a Monthly Project Progress Review Meeting near the monthly financial close period. An internal consultant QC milestone schedule will also be developed in association with this deliverable schedule. It will be maintained by the Project Manager for use by the consultant team for review scheduling. Deliverables will be internally reviewed for correctness and completeness prior to LADOTD submittal and will be accompanied by a Consultant Submittal (QC/QA) Certification form (Appendix I of the LADOTD Policy).

APPENDICES

LADOTD POLICY ON QUALITY CONTROL AND QUALITY ASSURANCE



ARCADIS Design & Consultancy for natural and built assets

Design Criteria Checklist

(Appendix A of LADOTD Policy on Quality Control and Quality Assurance)

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 ŋD, redundancy factor ŋR, and operational importance factor ŋI 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

(Appendix B of LADOTD Policy on Quality Control and Quality Assurance)

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)**

Final calculation book shall be submitted to LADOTD 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**

QA Information Package Checklist

(Appendix C of LADOTD Policy on Quality Control and Quality Assurance)

Project No.: H.000688.5

Project Name: US 11 NORFOLK SOUTHERN RR OVERPASS (HBI), ROUTE: US 11

Project Description: The Consultant shall provide engineering and related services to reconstruct and widen US 11 from I-12 to US 190, including replacement of the US 11 bridge over the Norfolk-Southern Railroad. The engineering services will be primarily in accordance with the design and phasing presented in the Environmental Assessment (EA) document..

_____ **Calculation Book**

_____ **Plans**

_____ **Special Provisions**

_____ **Cost Estimate**

_____ **Other Documents:** _____

QC/QA Certification

(Appendix D of LADOTD Policy on Quality Control and Quality Assurance)

Project No.: H.000688.5

Project Name: US 11 NORFOLK SOUTHERN RR OVERPASS (HBI), ROUTE: US 11

Project Description: The Consultant shall provide engineering and related services to reconstruct and widen US 11 from I-12 to US 190, including replacement of the US 11 bridge over the Norfolk-Southern Railroad. The engineering services will be primarily in accordance with the design and phasing presented in the Environmental Assessment (EA) document. 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 this 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
Designer						
Designer						
Designer						
Designer						
Design Checker						
Design Checker						
Design Checker						
Detailer						
Detail Checker						
Reviewer						
Hydraulic Engineer						
EOR						

QC/QA EVALUATION

APPENDIX E of LADOTD Policy on Quality Control and Quality Assurance

Project No.: H.000688.5

Project Name: US 11 NORFOLK SOUTHERN RR OVERPASS (HBI), ROUTE: US 11

Project Description: The Consultant shall provide engineering and related services to reconstruct and widen US 11 from I-12 to US 190, including replacement of the US 11 bridge over the Norfolk-Southern Railroad. The engineering services will be primarily in accordance with the design and phasing presented in the Environmental Assessment (EA) document.

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 Project Bridge Design Kick-Off Meeting Agenda Checklist

(Appendix H of LADOTD Policy on Quality Control and Quality Assurance)

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

_____ **Introduce LADOTD Bridge Task Manager and the Consultant's Key Team Members**

(The EOR and Key Designers/Design Checker/Reviewer).

_____ **Discuss Consultant's Staffing Plan and Implementation of QC/QA Plan Document**

(The staffing plan should include names and responsibilities of the designers, detailers, checkers, reviewers, and the EOR.)

_____ **Determine Schedules for Project Submittals**

(Design Criteria, TS&L, 30%, 60%, 90%, 100% of Preliminary Plans and Final Plans, Final Calculations, etc.)

_____ **Share Expectations and Consultant Rating Criteria**

(Consultant rating will be performed for all project submittals shown on the project submittal schedule.)

_____ **Discuss Design Criteria**

_____ **Discuss Budget, Supplemental Requests, Invoices, and Importance of Avoiding Claims**

(Staff shown on invoices will be reviewed in accordance with the staffing plan.)

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Consultant Submittal QC/QA Certification

(Appendix I of LADOTD Policy on Quality Control and Quality Assurance)

Project No.: H.000688.5

Project Name: US 11 NORFOLK SOUTHERN RR OVERPASS (HBI) ROUTE: US 11

Project Description: The Consultant shall provide engineering and related services to reconstruct and widen US 11 from I-12 to US 190, including replacement of the US 11 bridge over the Norfolk-Southern Railroad. The engineering services will be primarily in accordance with the design and phasing presented in the Environmental Assessment (EA) document.

We, the Engineers of Record for this project, certify that the information included in this submittal has been prepared in accordance with the QC/QA plan documents and the information presented is accurate and meets the requirements of this submittal.

Submittal Description		
Engineer of Record (Bridge Design)	Signature	Date
Engineer of Record (Roadway Design)	Signature	Date

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Project Activity Log Sheet

(Appendix J of LADOTD Policy on Quality Control and Quality Assurance)

Project No.: H.000688.5

Project Name: US 11 NORFOLK SOUTHERN RR OVERPASS (HBI) ROUTE: US 11

Bridge Task Manager: Osama Shahawy, PE

Date	Project Activity	Comments

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Consultant Submittal Review Checklist

Items	Design Criteria	TS&L	30% PP	60% PP	90% PP	100% PP	30% FP	60% FP	90% FP	100% FP	Final Calculation Book	Plan Revisions	Change Orders
Consultant Submittal QC/QA Certification													
Design Criteria	C												
TS&L		C											
Bridge Index			D	D	D	D	D	D	C	S			
General Notes			D	D	D	D	D	D	C	S			
Summary of Estimated Quantities			D	D	C	C	D	D	C	S			
General Plans			D	D	C	C	C	C	C	S			
Typical Sections			D	D	C	C							
Super elevation Diagram				D	D	C	C	C	C	S			
Construction Phasing Details				D	D	C	C	C	C	S			
Traffic Control Details				D	D	C	C	C	C	S			
Foundation/Pile Layout				D	D	C	C	C	C	S			
Pile Loads/Details					D	D	D	C	C	S			
Pile Data Table							D	D	C	S			
Bent Details							D	D	C	S			
Fender Details							D	D	C	S			
Girder Details							D	D	C	S			
Span Details							D	D	C	S			
Joint Details								D	C	S			
Bearing Details								D	C	S			
Approach Slab								D	C	S			

Items	Design Criteria	TS&L	30% PP	60% PP	90% PP	100% PP	30% FP	60% FP	90% FP	100% FP	Final Calculation Book	Plan Revisions	Change Orders
Guardrail Details								D	C	S			
Bridge Barrier/Railing Details								D	C	S			
Detour Bridge Details								D	C	S			
Revetment Details								D	C	S			
Signing/Lighting Details								D	C	S			
Year Plate								D	C	S			
Rebar Support								D	C	S			
Misc. Details								D	C	S			
Electrical Details								D	C	S			
As-built Plans								D	C	C			
Special Provisions							D	D	C	C			
NS-Items							D	D	C	C			
Cost Estimate					D	D	D	D	C	C			
Final Calculations											S		
Revised Plans/Calculations												S	S

LEGEND:

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

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

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

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

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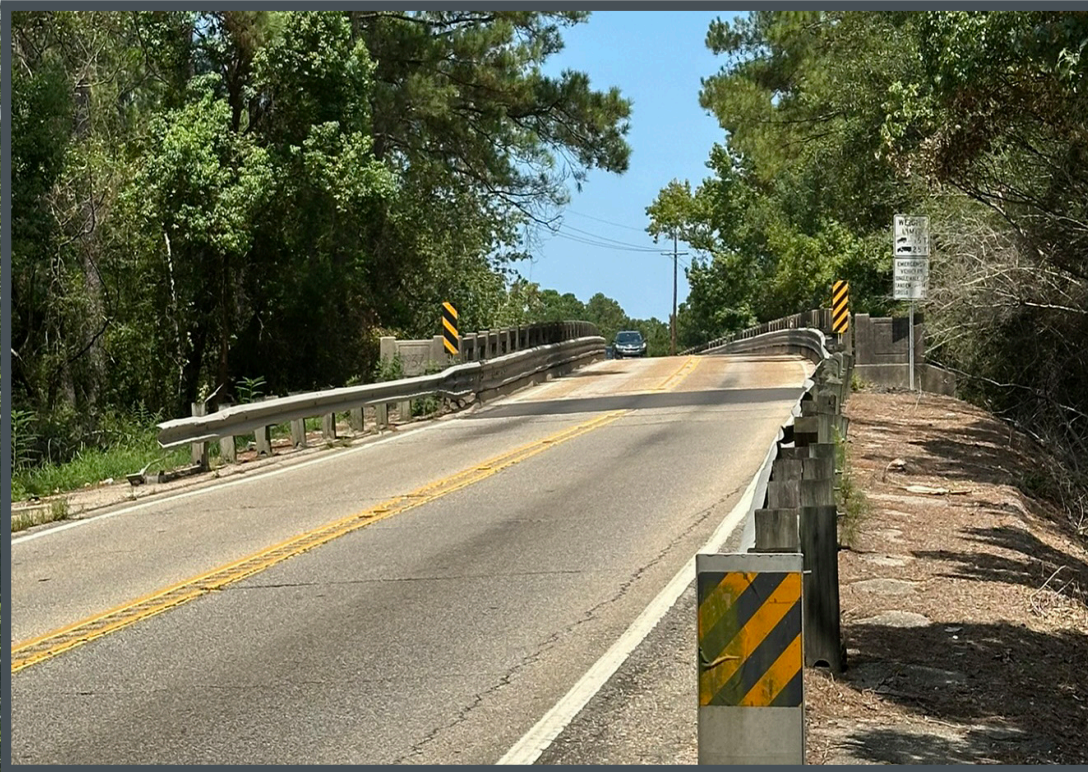
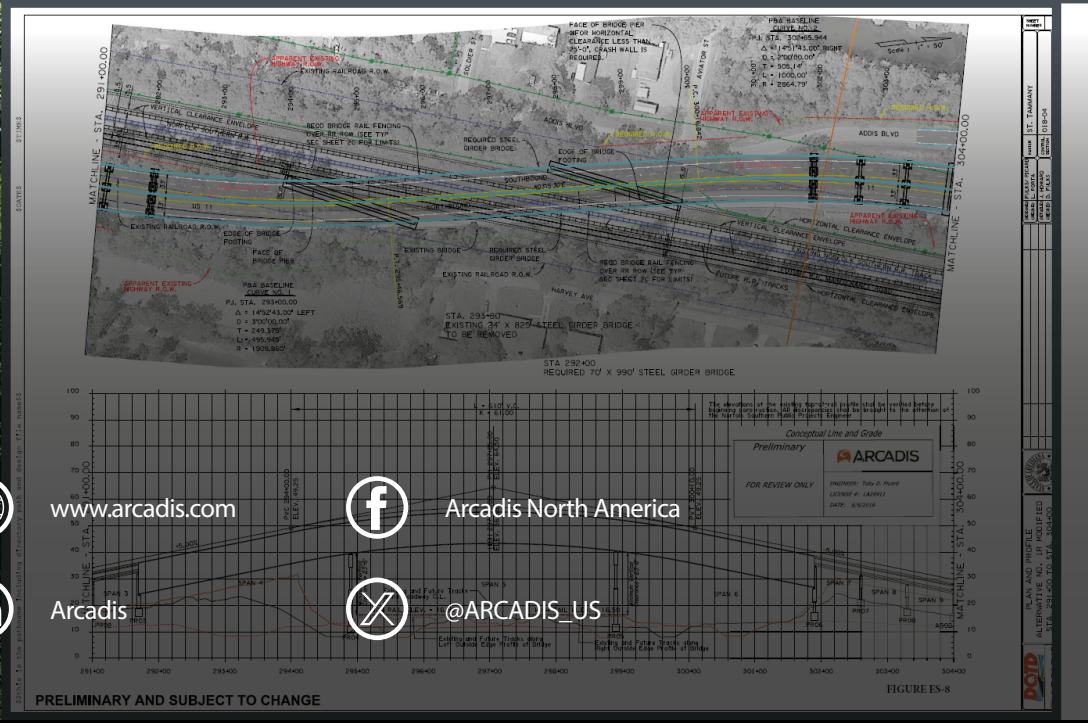
22 SUB-CONSULTANT INFORMATION:

Firm Name (Name must match exactly as registered with Louisiana's Secretary of State (SOS): including punctuation, include screenshot(s) from SOS at the end of Section 20)	Address	Point of Contact and email address	Phone Number
ARDAMAN & ASSOCIATES, INC.	316 HIGHLANDIA DR. BATON ROUGE, LA 70816	Jerry Outlaw, PE JOutlaw@Ardaman.com	(225) 324-7527

23 LOCATION:





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