Prepared for
Louisiana Department of Transportation and Development (DOTD)

May 10, 2022

AECOM

IDIQ Contracts for Bridge Preservation Statewide

Contract Numbers:
4400023921, 4400023922, 4400023923, 4400024185, 4400024186, 4400024187, 4400024188, and 4400024189

Delivering a better world

AECOM Technical Services, Inc.
8555 United Plaza Boulevard, Suite 300
Baton Rouge, LA 70809
303-941-4962

Louisiana Department of Transportation and Development (LADOTD)
Attn: Mr. Mark Chenevert, PE,
Contract Services Administrator
1201 Capitol Access Road, Room 405-E
Baton Rouge, LA 70802

May 10, 2022

RE: IDIQ CONTRACTS FOR BRIDGE PRESERVATION STATEWIDE, CONTRACT NOS. 4400023921, 4400023922, 4400023923, 4400024185, 4400024186, 400024187, 4400024188, AND 4400024189

Dear Mr. Chenevert and Members of the Project Evaluation Team:

Approximately 13% of LADOTD's 12,800+ bridges are in poor condition and in need of replacement or rehabilitation to provide safety to the traveling public. More than 90% of these poor-rated structures are not currently on the National Highway System; about 2,100 are load posted (restricting vehicle size and weight), and approximately 3,200 bridges need repair with estimated costs at $6.7 billion. LADOTD has taken great strides to maximize use of existing infrastructure and proactively invest in preventative maintenance activities; however, *help is on the way!*

With the recent passage of IIJA/BIL, LADOTD will be allocated $6 billion over the next 5 years for transportation infrastructure funding. Additionally, funding from the Bridge Formula (Highway Infrastructure) Program, the American Rescue Plan and remaining FY21/22 surplus funds will provide the resources to improve the condition of Louisiana's infrastructure systems. With this in mind, LADOTD needs to engage a full-service and experienced team, one with proven capability, and a flexible approach to help maximize the value of these transportation assets. AECOM is that team! We are ideally positioned to partner with the DOTD Bridge Design Section to support this program. **In response to this RFP and LADOTD's ongoing needs for design support for IDIQ task order contracts, AECOM offers the following benefits:**

 **Full-Service & Experienced**	AECOM provides a full-service team – ready to provide bridge preventative maintenance and full-service designs. We offer our expert and experienced resources and a design team that can provide a deep, multi-disciplinary approach to these IDIQ task order projects. We have delivered these projects using both traditional and alternative delivery methods tailored to each specific task order.
 **Proven Capability**	We have assembled our national practice leads, task managers and staff with bridge design and preservation IDIQ experience to provide support for DOTD's bridge needs. Our Project Manager, Gary Maji, PE, and the LA bridge office has worked with these bridge preservation teams on previous projects, most recently El Paso County's South Academy Boulevard Widening.
 **Flexible and Responsive**	The AECOM Team offers a project-focused staffing approach that matches our key staff and subconsultant partners to LADOTD's task order needs. Our commitment to project delivery, design efficiencies and staff development is reflected throughout each IDIQ task order.

AECOM has been successfully operating in Louisiana for nearly a half century and has a long-standing relation with DOTD providing Transportation and Bridge Design services. Our most recent major bridge project for DOTD is the I-49 Lafayette Connector Project. AECOM has nearly 200 employees in Louisiana between our Baton Rouge and New Orleans offices including Roadway, Bridge and Traffic Engineers as well as Planning and Environmental Professionals. Our local transportation staff is well integrated with our regional and national transportation professionals and experts successfully working together to complete bridge design and rehabilitation projects through the region and nationally.

We have selected subconsultant partners who will assist in meeting the expanded scope of services and delivering this project to LADOTD. Many of these firms successfully teamed with us on our previous LADOTD IDIQ contracts.

Forte & Tablada, Inc.	Bridge & Roadway Design, 3D Laser Imaging, Topographic Surveying
Ardaman & Associates, Inc.	Geotechnical
Vectura Consulting Services, LLC (DBE)	Traffic & Maintenance of Traffic
Marrero, Couvillon & Associates, LLC (DBE)	Lighting & MEP for Bridge Operator's House
CONSOR Engineers, LLC	Underwater Inspection & Imaging
T. Baker Smith, LLC	Typographic & Hydrographic Surveying, Sub-Surface Utility Investigations & Environmental
KPFF Consulting Engineers	ANSI Level 3 Services
Wiss, Janney, Eistner Associates, Inc.	Movable Bridge Inspection, Mechanical, Electrical & Design; SSPC Coating Assessments & Non-Destructive Testing Support

As both Contract and Project Manager, I will be the point of contact for this contract. I currently serve as AECOM's West Region Department Bridge Leader for our bridge services. I have more than 30 years of bridge design and IDIQ preservation experience, and am currently completing my duties as Bridge Design Lead for the I-49 Connector in Lafayette, LA.

The AECOM Team is committed to delivering a quality design to LADOTD for the Bridge Preservation IDIQ Contract, while successfully meeting the contract challenges and exceeding the requirements of LADOTD. If you have any questions, please contact me directly at 303-941-4962, or via email, **gary.maji@aecom.com**.

Sincerely,

AECOM Technical Services, Inc.

Gary Maji, PE
Contract/Project Manager
Associate Vice-President

Michael Patorno, PE
Vice-President, Business Unit Leader

AECOM

Sections
01-13

AECOM
Colorado Avenue
Deck Rehabilitation,
Colorado Springs, CO

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(Revised March 1, 2022)

DOTD FORM: 24-102

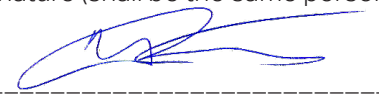
PROPOSAL TO PROVIDE CONSULTANT SERVICES

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

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

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

1. Contract title as shown in the advertisement	IDIQ Contracts for Bridge Preservation Statewide
2. Contract number(s) as shown in the advertisement	Contract Nos. 4400023921, 4400023922, 4400023923, 4400024185, 4400024186, 4400024187, 4400024188, AND 4400024189
3. State Project Number(s), if shown in the advertisement	N/A
4. Prime consultant name (as registered with the Louisiana Secretary of State where such registration is required by law)	AECOM Technical Services, 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)	AECOM Technical Services, Inc. (AECOM) LAPELS No. EF.0002331
6. Prime consultant mailing address	8555 United Plaza Blvd., Suite 300 Baton Rouge, LA 70809
7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)	8555 United Plaza Blvd., Suite 300 Baton Rouge, LA 70809
8. Name, title, phone number, and email address of prime consultant's contract point of contact	Gary Maji, PE, Associate Vice President 303.941.4962 gary.maji@aecom.com
9. Name, title, phone number, and email address of the official with signing authority for this proposal	Michael D. Patorno, PE Vice President 504.218.0865 mike.patorno@aecom.com

10. This is to certify that all information contained herein is accurate and true, and that the team presently has sufficient staff to perform these services within the designated time frame. By submitting this proposal, proposer certifies that it is not engaged in a boycott of Israel and it will, for the duration of its contract obligations, refrain from a boycott of Israel. Proposer also certifies and agrees that the following information is correct: In preparing its response, the proposer has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor or supplier, refused to transact or terminated business activities, or taken other actions intended to limit commercial relations, with a person or entity that is engaging in commercial transactions in Israel or Israeli-controlled territories, with the specific intent to accomplish a boycott or divestment of Israel. The proposer also has not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. DOTD reserves the right to reject the response of the bidder or proposer if this certification is subsequently determined to be false, and to terminate any contract awarded based on such a false response.	Signature (shall be the same person as #9):  _____ Date: May 10, 2022
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.	<u>Firm(s): Firm(s)' %:</u> Vectura Consulting Services, LLC: 2.5% Marrero, Couvillon & Associates, LLC: 1.5%

12. Past Performance Evaluation Discipline Table:
As indicated in the advertisement, insert the completed table here. The percentages for the prime and subconsultants must total 100% for **each past performance evaluation discipline**, as well as the overall total percent of the contract.

Evaluation Discipline(s)	% of Overall Contract	AECOM Technical Services, Inc.	Forte & Tablada, Inc.	T. Baker Smith, LLC	Ardaman & Associates, Inc.	Vectura Consulting Services, LLC	Marrero, Couvillon & Associates, LLC	Wiss, Janney, Eistner Associates, Inc.	CONSOR Engineers, LLC	KPFF Consulting Engineers	Totals
Roadway	20	70%	30%	0%	0%	0%	0%	0%	0%	0%	100%
Bridge	54.5	82%	11%	0%	0%	0%	0%	5%	0%	2%	100%
Traffic	5	50%	0%	0%	0%	50%	0%	0%	0%	0%	100%
Geotech	6	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
Survey	7	0%	40%	50%	0%	0%	0%	0%	10%	0%	100%
Environmental	5	80%	0%	20%	0%	0%	0%	0%	0%	0%	100%
Other	2.5	0%	0%	40%	0%	0%	60%	0%	0%	0%	100%
Total	100	65.2%	14.8%	5.5%	6.0%	2.5%	1.5%	2.7%	0.7%	1.1%	

The only past performance evaluation disciplines to be used are: Road, Bridge, Traffic, CE&I/OV, Geotech, Survey, Environmental, Data Collection, Planning, Right-of-Way, CPM, ITS, Appraiser and Other. The crosswalk from the old categories to the new categories can be found at the link below: **http://wwwsp.dotd.la.gov/Inside_LADOTD/Divisions/Engineering/CCS/General%20Information/CPPR%20Crosswalk%20to%20New%20Evaluation%20Disciplines.pdf.** (same link as in the advertisement)

13. Firm 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 (xxxx)" and include the classification title inside the parentheses. The DOTD Job Classification(s) to be used can be found at the following link:
http://wwwsp.dotd.la.gov/Inside_LADOTD/Divisions/Engineering/CCS/Job_Qualification/Job%20Classifications%20with%20Descriptions.pdf

Firm Name	DOTD Job Classification	Number of Personnel Committed to this Contract	Total number of personnel available in this DOTD Job Classification (if needed)
AECOM Technical Services, Inc.	Principal	2	3
	Supervisor - Eng.	8	10
	Supervisor - Other	6	8
	Engineer	9	16
	Engineer Intern	1	10
	Engineer - Other	4	12
	Environmental Manager	2	5
	Biologist/Wetlands	1	6
	Historian	2	5
	Administrative	2	5
	Senior Technician	3	10
Forte & Tablada, Inc.	Administrative		3
	CADD Technician	4	8
	Clerical		4
	Engineer	2	4
	Inspector		3
	Instrument Man	1	1
	Party Chief	2	6
	Engineer Intern		9
	Principal	1	3
	Rodman	1	11
	Senior Technician	2	3
	Supervisor Eng	1	4
	Supervisor Other		2
	Surveyor	2	5

Firm Name	DOTD Job Classification	Number of Personnel Committed to this Contract	Total number of personnel available in this DOTD Job Classification (if needed)
T. Baker Smith, LLC	Supervisor ENG		3
	Supervisor Other		20
	Engineer	2	18
	Surveyor	2	12
	Senior Technician	1	13
	Party Chief	1	20
Wiss, Janney, Elstner & Associates	CADD Technician	1	4
	Clerical	2	7
	Engineer		3
	Engineer Intern	2	28
	Engineering-Aide		1
	Engineer - Other	2	28
	Geologist		2
	Principal	4	45
	Professional	4	19
	Senior Technician	1	58
	Supervisor - Arch		1
	Supervisor - Eng	1	13
	Supervisor - Other	3	113
	Technician	1	7
CONSOR Engineers, LLC	Other (Engineer-Diver)	2	14
	Inspector-Bridge	2	60

Firm Name	DOTD Job Classification	Number of Personnel Committed to this Contract	Total number of personnel available in this DOTD Job Classification (if needed)
KPFF Consulting Engineers	Inspector-Bridge	1	6
	Engineer-Other	1	6
	Principal	1	2
Ardaman & Associates, Inc.	Administrative	1	3
	Clerical	1	1
	Engineer	1	2
	Engineer Intern	3	3
	Principal	2	2
	Senior Technician	3	6
	Supervisor-Engineering	3	3
	Supervisor-Other	2	2
	Technician	6	14
Vectura Consulting, LLC	Supervisor	2	2
	Engineer	3	5
Marrero, Couvillon & Associates, LLC	Principal	1	1
	Supervisor Engineer	1	2
	Engineer	2	2
	Designer	2	2
	Architect	1	1

AECOM

Sections 14-16

AECOM
Route 685 Truss Rehabilitation
over Craig Creek,
Botetourt County, VA

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14. Organizational Chart

Contract Manager/ Project Manager
Gary Maji, PE (2&3)

QA/QC
Ken Butler, PE (1&3)

PROJECT PRINCIPAL
Michael Patorno, PE (1)

DEPUTY PROJECT MANAGER
◆ Chris McKown, PE

Legend:

F&T = Forte & Tablada, Inc.
A&A = Ardaman & Associates, Inc.
CON = CONSOR Engineers, LLC
KPFF = KPFF Consulting Engineers
MCA = Marrero, Couvillon & Associates, LLC
TBS = T. Baker Smith, LLC
WJE = Wiss, Janney, Eistner Associates, Inc.
VEC = Vectura Consulting Services, LLC
(#) = Denotes MPR Minimal Personal Requirement Reference Number
◆ ATSSA Certified
◆ Traffic Engineering Modules
◆ PE Not Registered in LA
(CBI) NBIS Certified Bridge Inspector
SSPC Society of Protective Coatings Specialist

AECOM TEAM TASK MANAGERS
Gary Maji PE (2&3), Rob Dean PE, Craig Parent PE, SE, Daniel Boyd PE, Ed Zhou PE, Landon Whitton PE

BRIDGE DESIGN
Task Leader
Rob Dean, PE

Bridge Design
◆ Chris McKown, PE
Daniel Boyd, PE
Steve Haynes, PE
Sean Voisinet, PE
Patrick Hays, PE, SE
◆ Ian McElhone, PE
Joffrey Easley, PE (F&T)

Bridge Rehabilitation
Rob Dean, PE
Landon Whitton, PE (CBI)
◆ Bobby Prince, PE
◆ Chris McKown, PE
Steve Haynes, PE
Levi Yandis, PE (F&T)

LRFR Load Ratings
Jason Zimpfer, PE (CBI) (4)
Landon Whitton, PE (CBI)
◆ Craig Parent, PE, SE
Kendra VanGorp, EI
Levi Yandis, PE (F&T)

Bridge Lighting
Gregory DeCoursey, AIA (MCA)

Architectural Feasibility
Bradley Touchstone, FAIA
Brian Miller, PE (MCA)

MOVABLE BRIDGES
Task Leader
Michael Delemont, PE (7)

Mechanical
Bradley Kopping, PE (5)
John Williams, PE (WJE)

Electrical
Gareth Rees, PE (WJE) (6)
Carlos Turcios, PE

Structural
Michael Delemont, PE (7)
Don Yetter, PE

INSTRUMENTATION
Task Lead
◆ Ed Zhou, PE

Sampling
Curtis Schroeder, PE, SE, AWS, NHI, NDT (WJE)

Material Testing
Mark Powlison (ANSI Level 3) (KPFF)

Corrosion Detection
Jonathan McGormley, PE (WJE)

Bridge Deck NDT
◆ Brady Seston, PE

ROADWAY/TRAFFIC
Task Leader
◆ ◆ Jonathan McDowell, PE (2&8)

Roadway Design
◆ ◆ Greg Trahan, PE
Allison Schilling, PE (F&T)
David Wymore, PE

Hydrology/Hydraulics
Sarah McEwen, PE, CFM
Sreeni Bollu, PE

Traffic Engineering
◆ ◆ Laurence Lambert, PE, PTOE (VEC)
◆ ◆ Brin Ferlito, PE, PTOE, PTP (VEC)
◆ ◆ Prasanth Malisetty, PE, PTOE, PTP, RSP1 (VEC)

Maintenance of Traffic/TMP
◆ ◆ Daniel Helms, PE, PTOE, RSP2i
◆ ◆ Jonathan McDowell, PE (2&8)

Railroad Coordination
◆ Audra Rodgers, PE

GEOTECH
Task Leader
Robert Jewell, PE (A&A)

Megan Bourgeois, PE (A&A) (9)
Robert Rousset, PE (A&A)

SURVEY/TITLE WORK
Task Leader
Bradley Holleman, PLS, EI (F&T)
Rene Hebert, PLS (TBS)

Topo Survey/Construction
Ross Wilson, PLS (F&T)

3D Laser Scanning
Spencer Rimes, PLS (F&T)
Brent M. Campbell (F&T)

Underwater/Acoustical
Michael Dukes, PE (CON)

Property/Boundary
Rene Hebert, PLS (TBS)

Title Work/Research
Jean Reulet, PLS (TBS)

SUE/Utility Coordination
T.J. Stokes, PE (TBS)

BRIDGE INSPECTION
Task Leader
Landon Whitton, PE (CBI)

NBIS Inspections/Reporting
Jason Zimpfer, PE (CBI) (4)
SSPC Specialists
Len Phelps, SSPC (WJE)
Underwater Inspections
Heath Pope, PE,
ADCI Dive Supervisor, (CBI) (CON)
Dustin Noel, PE, ADCI Diver, (CBI) (CON)

ENVIRONMENTAL
Task Leader
Jonathan Vavasseur, PWS

Coast Guard Permitting/ Agency Coordination
Gary Kassoff
Victor Hernandez (TBS)
Section 106/HABS/HAER
Trina Meiser
Tanya McDougall
Bradley Touchstone, FAIA
NEPA
Derek Chisholm, AICP, LEED
Lou Costa
Wetlands/Sect. 404/Water Quality
Jonathan Martinez
Jonathan Vavasseur, PWS
Victor Hernandez (TBS)
Brady Trahan, PWS (TBS)
Coastal Use
Jonathan Martinez
Brady Trahan, PWS (TBS)

AECOM ADVANTAGE

Our team offices are strategically located to provide a quick and responsive "hands-on" approach to support DOTD bridge needs! With survey and geotechnical offices located within north and south parishes, we can mobilize immediately.

WORKING AS A TEAM!

We have previously worked with or are currently working alongside of all our subconsultant partners on DOTD projects with great success! Examples include: Bridge Inspection IDIQs, College Drive Reconstruction, I-49 Connector, and Contract 1 for Moveable Bridges. We look forward to bringing this synergy of success to the DOTD Bridge Design Section for their IDIQ needs!

Here's what our clients are saying about the AECOM Team...

" They were committed to deliver all bridge related deliverables and respond to all bridge inquiries in a timely and professional manner."
- Jenny Fu, DOTD Bridge Design Engineer Administrator.

" AECOM performed well on this project. They were responsive and provided good work ."
- Noel Ardoin DOTD Environmental Engineering Administrator

"Thanks for a fine job on post design (CE&I) services AECOM ~ well done! Response time was extremely fast for all my needs…great customer service!"
- Kevin Rens, PhD, PE, City and County of Denver/PM

"AECOM continues to provide excellent service for the Bridge Maintenance and Repair contract for the VDOT Bristol District."
- Teresa Gothard, PE, VDOT District Bridge Engineer

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/ certification & number	State of license	License/certification expiration date
1.	Ken Butler	**AECOM Technical Services, Inc.**	Civil Engineer PE 31476	LA	3.31.2023
	Michael Patorno	**AECOM Technical Services, Inc.**	Civil Engineer PE 0024197	LA	9.30.2023
2.	Gary Maji	**AECOM Technical Services, Inc.**	Civil Engineer PE 43044	LA	3.31.2023
	Jonathan McDowell	**AECOM Technical Services, Inc.**	Civil Engineer PE 30508	LA	3.31.2023
3.	Ken Butler	**AECOM Technical Services, Inc.**	Civil Engineer PE 31476	LA	3.31.2023
	Gary Maji	**AECOM Technical Services, Inc.**	Civil Engineer PE 43044	LA	3.31.2023
4.	Jason Zimpfer	**AECOM Technical Services, Inc.**	Civil Engineer PE 45922	LA	3.31.2024
5.	Bradley Kopping	**AECOM Technical Services, Inc.**	MEC Engineer PE 39581	LA	9.30.2023
6.	Gareth Rees	**Wiss, Janney, Elstner & Associates**	Electrical Engineer PE 0040754	LA	9.30.2022
7.	Michael Delemont	**AECOM Technical Services, Inc.**	Civil Engineer PE 43170	LA	9.30.2023
8.	Jonathan McDowell	**AECOM Technical Services, Inc.**	Civil Engineer PE 30508	LA	3.31.2023
9.	Megan Bourgeois	**Ardaman & Associates, Inc.**	Civil Engineer PE 36725	LA	3.31.2024

16. Staff Experience

Firm	AECOM Technical Services, Inc.		
Name	Gary Maji, PE	Years of Relevant Experience with this Employer	21
Title	Contract Manager/Project Manager/Task Manager	Years of Relevant Experience with Other Employer(s)	11

Degree(s)/Years/Specialization			BS/1988/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0043044/LA/3.31.23
Year Registered	2018	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			34150/CO/10.31.23
Year Registered	1999	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			5084537-2202/UT/3.31.2023
Year Registered	2000	Discipline	Civil Engineer
Contract Role(s)/Brief Description of Responsibilities			**Project Manager** Gary has been in responsible charge of the project/program management, design, rehabilitation, and reconstruction of urban streets, highway bridges and railroad bridges and box culverts built in accordance with AASHTO and AREMA specifications. He has led multi-disciplinary teams throughout the development of the conceptual, preliminary and final design phases and on-call engineering contracts for federal, state and local agencies. His experience includes right-of-way/surveying, environmental, and utility coordination throughout project development. His experience includes the design and preparation of steel and concrete girder bridge plans, project special provisions and project cost estimates formatted in accordance with capital project guidelines. **Gary meets MPRs 2&3.**

Experience Dates (mm/yy-mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
03/18-Ongoing	**LADOTD (H.004273), I-49 Connector, Lafayette, LA.** Structure task manager for the conceptual and preliminary design of this 7-mile reconstruction of I-49 through downtown Lafayette, LA. This project has a budget projected over $1 billion and includes approximately 20 bridges and numerous retaining walls. Bridges span over several interchanges, Vermilion River, short line railroads and a roadway grid network through the Lafayette Central Business District. Structure designs included the evaluation of a 2-mile viaduct structure and a signature span structure considering cast-in-place segmental, spliced concrete tub girders, arched-rib and cable-stayed structure types that integrated context sensitive solutions into the bridge and structure design.
05/20-09/21	**El Paso County, South Academy Blvd over BNSF Rehabilitation, El Paso County, CO.** Structure lead and in responsible charge for the bridge rehabilitation design for an 800-ft, 6-span, steel plate girder bridge over BNSF tracks in Colorado Springs. As part of the bridge preservation efforts, Gary's team conducted nondestructive testing to evaluate the existing deck condition, performed a fatigue assessment and load rating analysis to develop retrofits for fatigue prone details and identified expansion joint and bearing repair and replacement details to extend the bridge design life. Design efforts include railroad coordination per UPRR/ BNSF RR Grade Separation Guidelines.

04/2018-09/2018	**CDOT, SH 59/I-70 Emergency Bridge Replacement (CDOT NPS Contract), Seibert, CO.** Quality Manager for the emergency bridge replacement project of the SH59 Bridge over I-70 in eastern Colorado. Gary developed project quality schedules, technical protocols and provided quality audits for this multi-disciplinary, blended-team project bridge and interchange reconstruction project. CMAR contracting enabled CDOT's project team to replace the bridge and bring the interchange geometry to current AASTHO standards re-opening the interchange 76-days after the initial closure.
03/13-05/21	**City of Fort Collins, Lemay Avenue over BNSF/Vine Improvements, Fort Collins, CO.** Structure manager for the planning and design development for a new bridge crossing over Vine Street and the BNSF Railway tracks in northeast Fort Collins. Using a CM/GC project delivery, Gary's structure team led the design of a single-span prestressed concrete girder bridge, (13) rockery retaining walls, and a pedestrian underpass structure that improves safety and provides multimodal connectivity to this area of the city. Design efforts included railroad coordination and design submittals developed in accordance with the UPRR/BNSF RR Grade Separation Guidelines.
09/18-05/19	**LADOTD (H.011670), I-10 at Loyola Avenue Interchange Design-Build Tender Offer, Kenner, LA.** Proposal Project Manager and Structural Design Manager for interchange improvements at the I-10 at Loyola Drive to provide new direct access ramps to handle traffic to and from the new passenger terminal at Louis Armstrong International Airport. Duties included coordination with the contractor and all design tasks to prepare the proposal along with review and evaluation of multiple alternative technical concepts. Led plan development and quantity calculations for contractor bid.
05/09-Ongoing	**CDOT, I-76 Corridor Design, Fort Morgan, CO,** 2012. Project manager and structures task manager for the preliminary and final design of more than 27 structures along I-76 within a 16-mile corridor. This design work required safety improvements at four interchanges and complete reconfiguration at three other interchanges. Bridges crossed over canals, county roads, waterways, and the BNSF railroad. As part of the design of the I-76 Bridges over BNSF and Beaver Creek, Gary managed the development and submittal process for the conceptual, preliminary and final design requirements performed in accordance with the UPRR/BNSF RR Grade Separation Guidelines.
05/13-07/15	**LADOTD (H.001779), Jimmie Davis Bridge, Shreveport, LA.** Bridge engineer responsible for the conceptual design and report for bridge replacement and rehabilitation alternatives of the Jimmie Davis Bridge over the Red River. Design efforts evaluated spliced-concrete U-girder, cast-in- place concrete segmental and steel plate girder alternatives.
11/14-07/10	**CDOT, SH60 & SH257 over Little Thompson River Bridge Replacements, Milliken, CO.** Project Manager for the design of two bridges over the Little Thompson River. Additional responsibilities included developing an existing conditions assessment with scour analysis based on damages that occurred due to flooding and completion of structure type selection reports.
02/96-05/97	**City of Virginia Beach, Route 60 (Pacific Ave) over Rudee Inlet, Virginia Beach, VA.** Bridge engineer for the 8-span, 690-ft prestressed concrete girder twin-viaduct. This bridge rehabilitation project required detailed planning and coordination to evaluate substructure deterioration concerns associated with vessel impact damage. Extensive utility and marine coordination was a necessity to expedite this project's completion. Substructure rehabilitation design components required the incorporation of AASHTO's seismic category B requirements and the design of a new bridge fendering system at two (2) pier locations.

	Firm	AECOM Technical Services, Inc.		
	Name	Ken Butler, PE	Years of Relevant Experience with this Employer	15
	Title	QA/QC	Years of Relevant Experience with Other Employer(s)	22

Degree(s)/Years/Specialization			BS/1984/Civil Engineering
Active Registration Number/State/Expiration Date			PE.31476/LA/3.31.23 Additional licenses in VA, FL, MD, PA, SC, NC, CA, D.C., DE, NY, NJ
Year Registered	1991	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**QA/QC**. Ken brings 37 years of experience and national recognition for his performance on high profile bridge projects. He has been involved with the management, design, and construction of 35 major and complex bridges worth more than $5 billion in construction cost. He has played significant roles on eight (8) major alternate delivery projects including: the $463 million Harry W. Nice/Thomas "Mac" Middleton Bridge in Newburg, MD; $449 million Frederick Douglass Memorial Bridge Project in Washington D.C.; $227 million historic Arlington Memorial Bridge design build project in Washington D.C.; the $1.3 billion PPP I595/I95/I75/FLTP Corridor Improvements in Fort Lauderdale, Florida; the $250 million design build Carolina Bays Parkway in Myrtle Beach, South Carolina; the $1.5 billion design build Tren-Urbano mass transit project in San Juan, Puerto Rico; the $150 million design build Indian River Inlet cable stayed bridge replacement in Rehoboth Beach, Delaware; and the $1.3 billion PPP Edmonton LRT project (Tawatina extradosed cable stayed bridge) in Edmonton, Alberta, Canada. He has provided designs, project management, construction support and construction engineering inspection services to 14 state agencies, as well as several toll authorities. **Ken meets MPRs 1&3.**

Experience Dates (mm/yy-mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
06/14-06/18 *(Bridge Lead)* 06/18-Ongoing *(QA Lead)*	**LADOTD (H.004273), I-49 Connector, Lafayette, LA.** Ken serves as Bridge Design Lead for the 3.5-mile long elevated precast segmental and prestressed concrete u-girder urban viaduct; four flyover connector ramps; three multi-level interchanges; two elevated SPUI's (signature bridges – arches and cable stayed); eleven overpass structures; three railroad bridges; and 27,000-feet of retaining wall.
10/19-Ongoing	**MDTA Harry W. Nice/Thomas "Mac" Middleton Bridge Replacement Project, MD.** Ken serves as the Design Manager for this 1.9-mile long bridge over the Potomac River. Project includes major bridge design over a navigable channel; environmental permitting; 200-ft deep foundations; roadway design; staged construction; and demolition of the existing bridge over the Potomac River. As Design Manager, Ken is responsible for managing 60+ designers for designs, plans, special provisions, shop drawings, and working plans for all design disciplines; implementing and overseeing the QA/QC program; integrating with contractor, designers and owner in project office; budget and schedule compliance; and constructability and VE reviews. He has full professional liability for all engineering decisions and the final work product. The design took 1-year and he continues to provide construction support to the Design Builder.

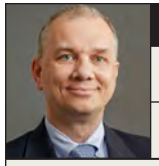
08/17-Ongoing	**DDOT Frederick Douglass Memorial Bridge Project, Washington, DC.** Ken serves as the Design Manager for this signature bridge project over the Anacostia River. Creation of a signature bridge and overall project aesthetics were key drivers behind the project to satisfy the Commission of Fine Arts and the National Capital Planning Commission. The 1,445-ft long bridge is comprised of three springing cable stayed arch spans at 452.5'-540'-452.5' supported by cable stays. The project includes traffic ovals; major Interstate reconstruction; complex MOT; utilities; new river bridge being built parallel to existing bridge; roadway transitions; H&HA scour; drainage and erosion and sediment control; environmental permitting; roadway lighting; bike/pedestrian facilities; landscape; etc. Duties include managing 130 designers for designs, plans, special provisions, shop drawings, and working plans for all design disciplines; implementing and overseeing the QA/QC program; integrating with contractor, designers and owner in project office; budget and schedule compliance; and constructability and VE reviews. He has full professional liability for all engineering decisions and the final work product. Load rating as well as an Owner & Inspection Manual were also part of the design scope. Ken began this project in 2016 during the pre-bid phase and was committed full time for two years through the design and construction. The design took 1.5 years and he continues to provide construction support to the Design Builder.
10/18-12/21	**NPS/FHWA-EFLHD Arlington Memorial Bridge, Washington, DC.** Ken served as the Designer of Record for this historic arch bridge rehabilitation project over the Potomac River. Primary components of the project included complete re-decking of the 2,162-foot-long bridge with precast concrete deck panels using stainless steel reinforcing; complete replacement of interior arch supports; and total replacement of the central bascule span with 280-foot-long fixed steel girder spans. Ken's roles on Arlington Memorial Bridge and the Frederick Douglass Memorial Bridge Project were concurrent, and Ken had full professional liability for engineering decisions and final work product.
01/14-12/20	**City of Edmonton Tawatina Bridge on Valley Line SE, Edmonton LRT, Alberta, Canada**. Ken was a technical advisor responsible for reviewing the extradosed cable stayed bridge base design & performance specifications; supporting the owner during technical proposal reviews and bid selection; and providing technical input during construction to the owner. The concrete segmental extradosed cable stayed bridge is 1,248-ft long over the North Saskatchewan River and includes 290-ft of cable stay spans.
03/11-08/14	**TxDOT IH-35 Bridges over Brazos River, Waco, TX.** Ken served as the Technical Director for these twin extradosed cable-stayed bridges that serve as the gateway entrance for the city of Waco, Texas. He was responsible for the technical development of the bridge design. His services included input and oversight of design methods & criteria, stay configuration, superstructure details, erection schemes, and analysis procedures. The bridge is a 3-span structure 185'-250'-185' (steel trapezoidal box superstructure). As Technical Director he was also responsible for assigning the design team as well as the quality control team.
01/11-08/14	**Florida Avenue Bridge, LADOTD (State Project No. 700-92-0016), New Orleans, LA.** Bridge Lead for the design efforts for the $100 million 1,500-foot-long 5-span main unit crossing the Inner Harbor Navigational Canal. Directed the preliminary and final design phases for the section of bridge, which includes a 470-foot main span over the canal with 156-foot vertical and 300-foot horizontal navigational clearances. Two alternates were developed during the final design for the main unit including steel plate girders and cast-in-place variable depth concrete box girders. The overall project consisted of approximately two miles of elevated structure including high level approaches comprised of prestressed concrete bulb-T girders and curved steel girder interchange ramps.

Firm	AECOM Technical Services, Inc.		
Name	Chris McKown, PE	Years of Relevant Experience with this Employer	2
Title	Deputy Project Manager/Bridge Design/Bridge Rehabilitation	Years of Relevant Experience with Other Employer(s)	7

Degree(s)/Years/Specialization			MBA/2019/Business Administration BS/2012/Civil Engineering (with Structures Minor)
Active Registration Number/State/Expiration Date			PE.0041077/LA/3.31.23 Additional license in CO
Year Registered	2016	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Deputy Project Manager/Bridge Design/Bridge Rehabilitation**. Chris will serve in the role of Deputy Project Manager and Bridge Design Task Lead. He brings 9 years of experience with the structural design of bridges. Chris has worked designing bridges in both the public and private sector and has experience with steel girder design, prestressed girder design, reinforced concrete design, accelerated bridge construction, phased construction, load rating, and providing construction support. Chris is well versed in the AASHTO bridge design codes and LADOTD's Bridge Design and Engineering Manual and applicable design methodologies.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
03/20-Ongoing	**LADOTD (H.004273), I-49 Connector, Lafayette, LA.** Design engineer responsible for advancing preliminary conceptual design plans for the Mainline Viaduct. Performed review of the three Mainline Viaduct structure type options and the options presented for the Signature Bridge. Performed reviews of structural quantities and conceptual cost estimates. Recent submittals included two (2) conceptual design submittal packages for highway grade separations across BNSF and LDRR tracks.
02/21-Ongoing	**El Paso County, South Academy Blvd over BNSF Rehabilitation, Colorado Springs, CO.** Design Engineer and Engineer of Record for the design of widening and rehabilitation of three separate structures on South Academy Boulevard in Colorado Springs, CO for capacity improvements. The widened superstructures will be a mixture of prestressed I-girders, prestressed box girders, and steel plate girders. The project also includes plans for scour mitigation and structural rehabilitation to extend the service life of the existing structures. A key aspect of this project was coordinating with the BNSF railroad for all submittals in accordance with UPRR/BNSF RR Grade Separation Guidelines for the steel plate girder bridge.
02/20-03/21	**TxDOT, I-635 LBJ East, Dallas, TX.** Design Engineer for the Quality Control process on the project. The project's scope is for the construction of an approximately 11.2-mile corridor of Highway I-635 LBJ East from US 75 to IH-30 in Dallas County to improve safety, mobility, and relieve congestion in the region. Provided independent design checks and plan verifications (QC) for one prestressed girder bridge and all the sign structures on the project. Currently providing ongoing construction support services for the project, including shop drawing review and plan revisions.

07/16-01/20	**LADOTD, H.003184: I-10: TX State Line East of Coone Gully, Calcasieu Parish, LA.** Design Engineer and Engineer of Record on the project to widen approximately 11 miles of I-10 from Vinton, LA to the Texas state line. The project called for the complete replacement of nine different structures within the project limits. Engineer of Record for various components across the eight slab span bridges on the project. The structures will be replaced using phased construction.
10/14-08/19	**LADOTD, H.002446: LA 40: Tchefuncte River Bridge, Near Folsom, LA.** Engineer of Record and Bridge Design Task Lead to replace the LA 40 bridge over the Tchefuncte River near Folsom, LA. The project called for the replacement of the existing structurally deficient bridge utilizing phased construction. Responsible for the complete design of the new 420' long slab span structure including all substructure components. An "as-designed" load rating of the new structure was also provided.
01/17-12/17	**LADOTD, H.012422: I-110: Interchange Modification @ Terrace.** Engineer of Record for the exit ramp superstructure on the project to provide a new exit ramp off of Southbound I-110. The project was designed to improve access to an under-served community, eliminate dangerous weaving movements at the I-10/I-110 merge, and to allow modifications to existing exit ramps on future projects. Responsibilities included construction phasing, superstructure design of the steel I-girder exit ramp, plan development, and construction support. The project is complete and open to traffic.
07/15-05/19	**LADOTD, H.010009: LA 507: Over I-20 Bridge Rehabilitation, Lincoln Parish, LA.** Design Engineer and Engineer of Record for the complete replacement of the bridge superstructure of the LA 507 overpass near Simsboro. The project called for accelerated bridge construction to replace the bridge superstructure and various structural repairs. The bridge was built on site and moved into place over the course or several weekends. Responsibilities include the design of the deck, the steel girders, and the new bearings. Special consideration was given to minimize construction time and any road closures.
09/20-04/21	**CDOT, IM 0252-495: I-25 Rehab (MP127-135).** Design Engineer for the Quality Control process on the project. The project's scope was to rehabilitate approximately 8 miles of I-25 in Colorado Springs, CO. The project included multiple bridge widenings. Provided a complete independent design check and plan verifications of the proposed widened structure over Dry Wash Creek. The existing structure consisted of a 3 span steel rolled beam superstructure supported by a multicolumn bent on spread footings. The new portion of the bridge was widened to match the existing structure.
03/16-08/16	**LADOTD, H.001439: LA 1 Bridges near Grand Isle.** Design Engineer on the project to for the replacement for three structures experiencing severe corrosion and concrete spalling in the vicinity of Grand Isle, LA. Performed as-designed ratings on the substructure elements at all three sites. These ratings also served as an independent check of the design.
06/15-04/18	**LADOTD, H.010916: Prien Lake Redeck & Safety Improvements.** Design Engineer on the project to re-deck the main spans, improve the safety of the structure by the addition of new barriers, and add inspection walkways to assist the inspection of the variable depth fracture critical plate girders on the main span. Tasked with detailing barrier transitions, construction phasing plans, and the calculation of plan quantities.

	Firm	AECOM Technical Services, Inc.		
	Name	Rob Dean, PE	Years of Relevant Experience with this Employer	26
	Title	Task Manager/Bridge Design Task Leader	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/1993/Civil Engineering MS/1995/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0046730/LA/9.30.22
Year Registered	2022	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			33530/VA/7.31.2023
Year Registered	1999	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			25963/SC/6.30.2022
Year Registered	2007	Discipline	Civil Engineer
Contract Role(s)/Brief Description of Responsibilities			**Task Manager/Bridge Design Task Leader.** Rob is a licensed professional civil engineer who serves as a Bridge Engineer in the Roanoke, Virginia office. His professional experience encompasses a wide range of projects for public and private clients, involving design of new bridge structures, as well as the inspection, rehabilitation, and renovation of existing structures. His responsibilities include condition assessment, rehabilitation alternatives, computation and checking of design calculations, preparation of plans, specifications, and cost estimates. Mr. Dean is a nationally certified Bridge Inspection and Tunnel Inspection Team Leader.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
04/20-Ongoing	**VDOT, Rehabilitation of Interstate 77 Bridges over Clear Fork Creek, Bland County, VA.** Mr. Dean served as Task Manager for rehabilitation of four steel bridges on Interstate 77 in Bland County, Virginia. AECOM developed a program for assessment of the existing structure condition, including sampling of the superstructure concrete to test for chloride content, depth of the chloride front, compressive strength and petrographic examination. Based on the results of our investigation, we developed plans for deep hydro-demolition and concrete deck overlay, elimination of deck expansion joints, structural steel repairs, and substructure rehabilitation.
11/20-Ongoing	**VDOT, Route 360 Corridor Evaluation of 22 Structures, Fredericksburg District.** Mr. Dean serves as Task Manager with responsibility for coordinating the collaboration of a multi-discipline team on this task to evaluate rehabilitation needs for 22 structures along the Route 360 corridor. Structures range in length up to 500 feet and include both concrete and steel superstructures. Our assessment of the existing structures including infrared thermography, 3D GPR, and digital image mapping, all performed at traffic speeds. The analysis results supported our data-driven process for rehabilitation recommendations and budget prioritization.

08/15-11/20	**VDOT, Route 685 over Craig Creek (Phoenix Bridge), Botetourt County, VA.** Mr. Dean served as Task Manager with responsibility for bridge design and construction plans. AECOM was commissioned by VDOT to provide engineering services for this project to rehabilitate two 120-year-old steel truss spans over Craig Creek to extend the service life, improve the condition ratings, and increase the live load capacity. This single-lane bridge with a length of 267 feet is the only means of access and emergency service for dozens of residences, so AECOM developed unique modular construction details to allow major rehabilitation of floor beams and complete replacement of all stringers and bracing members in very short windows of road closure.
01/16-11/20	**VDOT, Rehabilitation of 34 Structures in Salem District, VDOT Salem District, VA.** Mr. Dean served as Task Manager with responsibility for guiding the work of multiple design teams for this task to replace superstructures for 34 bridges throughout the VDOT Salem District. New structure types included concrete and steel superstructures. Staged construction details were developed to maintain traffic during construction. Where staged construction was not feasible, plan details were developed to permit rapid replacement within a 12-hour road closure. Bridge rehabilitation plans were prepared and bundled in multiple advertisement packages.
04/17-Ongoing	**VDOT, Rehabilitation of Five Structures in the Lynchburg District, VDOT Lynchburg District, VA.** Mr. Dean serves as Task Manager with responsibility for oversight of five design teams to make field assessments, site survey, develop sequence of construction, bridge engineering, maintenance of traffic, utility relocations, cost estimating, and specifications. AECOM was commissioned by VDOT to provide engineering services for this project for rehabilitation of five structures. Structures ranged in length up to 650 feet. The scope of rehabilitation included concrete deck replacement, deck hydro-demolition and overlay, structural steel repairs, bearing replacement, substructure repairs, and structural steel painting.
02/18 to 08/20	**VDOT, Route 683 and Route 730 Bridges, Virginia DOT Lynchburg District**. Mr. Dean served as Task Manager for this task and performed quality control review of superstructure and substructure design calculations and bridge construction plans. AECOM provided engineering services for this project for complete replacement of two bridges using prestressed concrete beams. The project was designed on an aggressive schedule because the original bridges were both washed out during a flood, leaving both bridges closed to traffic.
05/18-03/19	**VDOT, Route 3 Bridge over Rappahannock River, Middlesex/Lancaster County, VA.** Mr. Dean served as Task Manager with responsibility for coordinating the collaboration of a multi-discipline team for this task to study bridge rehabilitation and replacement alternatives for the Route 3 over the Rappahannock River bridge. The existing bridge is two miles long with a span length of 650 feet over the navigation channel. The study evaluated eight bridge replacement alternatives and provided scoping plans for the recommended alternative based on cost, environmental impacts, constructability, and impacts to traffic.
04/11-05/11	**VDOT, I-81 over Reed Creek Bearing Replacement, Wythe County, VA.** Mr. Dean served as Senior Bridge Engineer for this project with responsibilities for field assessment, design of emergency bearing repairs, and preparation of construction plans. AECOM was commissioned by VDOT to perform emergency inspection and prepare emergency repair plans for tilted steel rocker bearings.
02/17-09/21	**VDOT, Route 58 over NS Railway, Norton, VA** . Mr. Dean served as Senior Bridge Engineer and Engineer of Record for this task to rehabilitate the superstructure of this steel girder bridge with a total length of 570 feet and a width of 76 feet. Rehabilitation plans included fatigue cracking retrofit, concrete deck overlay, bearing replacement, and substructure repair.
07/19-02/22	**VDOT, Route 667 Piney Creek, Albemarle County, VA.** Mr. Dean served as Task Manager and Engineer of Record with responsibilities for preparation of design calculations for moment slabs and concrete barriers, construction specifications, and construction plans. AECOM provided engineering services for this project for complete replacement of a structurally deficient bridge structural steel plate arch construction.

Firm	AECOM Technical Services, Inc.		
Name	Craig Parent, PE, SE	Years of Relevant Experience with this Employer	25
Title	Task Manager/LRFR Load Ratings	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/1995/Civil Engineering MS/1997/Civil Engineering
Active Registration Number/State/Expiration Date			C 59856/CA/12.31.2023
Year Registered	1999	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			36117/CO/10.31.2023
Year Registered	2002	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			6379388-2202/ UT/3.31.2023
Year Registered	2006	Discipline	Structural Engineer
Contract Role(s)/Brief Description of Responsibilities			**Task Manager/LRFR Load Ratings**. Craig has extensive experience managing on-call contracts, individual task orders, and project specific contracts including small bridge rehabilitation and replacements; complex structural repair and retrofit; emergency repair and replacement; and large multidisciplinary projects such as grade-separated interchanges. His rehabilitation and repair experience includes non-destructive load testing, bridge deck scanning (GPR and IR), finite-element modelling, bridge jacking, substructure replacement, foundation augmentation, concrete deck repair, fatigue retrofit, and bearing and expansion joint replacement.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
09/2016-Ongoing	**City and County of Denver, Park Avenue Viaduct Rehabilitation, Denver, CO.** Project Manager for the $14 million rehabilitation of a viaduct structure that is an elevated intersection of Park Ave., Wewatta St., Delgany Street, and 22nd Ave. The structure is a critical link to I-25, Coors Field, and the northwest neighborhoods of Denver. The bridge consists of five steel plate girder viaducts that frame into a central, post-tensioned concrete waffle slab located over the BNSF/UPRR railroads as well as several light-rail tracks. The project includes: modular expansion joint and bearing replacement; bridge deck repairs; replacement of concrete curb ramps and sidewalk on the waffle slab; concrete repair under the waffle slab; complex replacement of four overhead mast arm signals; painting steel girders; and resurfacing the bridge. Replacement of the mast arm signals required an innovative connection to the underside of waffle slab where new reinforced concrete members are dowelled into the waffle slab webs. Paving the bridge required the partial reconstruction of two intersections due to the pavement elevation difference. The reconstruction included tying the pavement to the opposite end of the intersection and replacement of curb ramps. The project required extensive coordination with the UPRR, BNSF, and RTD.

03/20-01021	**Colorado Avenue Bridges Preventative Maintenance, Colorado Springs, CO.** Project Manager for the design and post-design services for the deck repair, expansion joint repair, and bearing stabilization for two Colorado Avenue bridges over Monument Creek and the UP Railroad/Sierra Madre Street. Both bridges exhibited severe deck deterioration due to insufficient concrete reinforcement cover; permanently displaced ("walked") bearings; and expansion joint gland damage. AECOM used in-house deck scanning capability to determine concrete cover, identify delaminated concrete, and deterioration potential using ground penetrating radar (GPR) and infrared thermography (IR). Based on the results, AECOM developed two deck repair options using CDOT class 2 repairs and an overlay with either polyester polymer concrete or Concrete Class DT. AECOM also developed a simple bearing restraint system to prevent further walking of the bearings and developed an innovative expansion joint gland replacement strategy that avoided costly replacement of the existing steel joint armor.
04/18-09/18	**CDOT, SH 59/I-70 Emergency Bridge Replacement (CDOT NPS Contract), Seibert, CO.** Project Manager for the emergency replacement of a 4-span, cast-in-place T-beam bridge taken out of service by a fatal truck collision that destroyed two columns adjacent to I-70 in Siebert, CO. AECOM lead a blended multi-disciplinary design team with CDOT that delivered a reconstructed bridge in 8 weeks using the CM/GC Alternate Delivery Method. The replacement structure was a two-span prestressed concrete box girder bridge that required significant reconstruction of the approach pavement and diamond interchange ramps due to an increase in structure depth.
05/18-06/19	**CDOT, I-76 over Clear Creek Fatigue Study (CDOT NPS Contract), Adams County, CO.** Project Manager responsible for a fatigue study for two highly skewed, multi-span, steel plate girder bridges: EB and WB I-76 over Clear Creek. The bridges collectively have over 60 known distortion induced fatigue cracks due to a gap between the cross-frame stiffener and the bottom flange. The project included detailed inspections; instrumentation with strain gages and displacement transducers; full scale load testing; data collection and analysis; three-dimensional finite element analysis (FEA); and developing conceptual fatigue retrofit details. Field testing to calibrate the FEA to have an accurate tool to evaluate fatigue retrofit strategies. Adjustments to the model such as member properties and boundary conditions, allow the model to be refined to replicate the load test responses.
09/19-01/20	**CDOT, I-70 over US 6 and Clear Creek Finite Element Analysis (CDOT NPS Contract), Clear Creek County, CO.** Project Manager for the finite element analysis (FEA) of a 488-foot, highly skewed, steel girder bridge subject to adverse displacements and vibrations. This bridge is a critical link to Colorado's mountain recreation areas and safety is paramount. The purpose of the project is to calibrate the FEA model response to field instrumentation data and establish structural instability thresholds to compare to instrumentation data. If thresholds are attained in the field, CDOT will receive a warning from the instrumentation equipment indicating potential structural instability that should be mitigated. AECOM also provided independent reviews of CDOT's field instrumentation.
07/20-09/21	**Repair Assessment of Bridge No. 93.1, I-20 EB to I-55 NB, Jackson, MS.** Independent technical reviewer for the load rating and repair recommendations for Bridge No. 93.1 in Rankin County, MS. This bridge exhibits diagonal cracking of the concrete girders and spalling at the dapped girder ends which weakened the structural integrity of the bridge and warranted a load posting. The load rating was completed using a 3D finite element model using CSiBridge software. Craig provided subject matter expertise for rehabilitation measures such as bearing repair/replacements, bridge deck seal using high molecular weight methacrylate (HMWM), concrete patching, expansion joint replacement, and dapped girder rehabilitation.
01/19-12/19	**ODOT, Bridge Load Ratings, Various Locations, OH.** Task leader for the rating of 30 bridges in Ohio using AASHTOWare BrR software and STAAD. The structures typically included rolled steel beams and welded steel plate girders that were rated in BrR. The project also included two complex bridges that were rated in STAAD software as directed by ODOT. The bridges were a cast-in-place concrete open spandrel arch and a steel plate girder bridge with an extremely complex framing system. The rating team evaluated multiple complex structures to determine innovative methods to rate in BrR rather than using more costly methods using finite element analysis software.
02/04-06/09	**City and County of Denver, W. 6th Avenue (EB and WB) Viaducts Rehabilitation, Denver, CO.** Project Engineer for 3-dimensional finite element modeling, structural design and temporary shoring design. The design includes stabilizing structure with reinforced concrete hammerhead piers and multi-column steel bents; replacing laminated elastomeric with pot bearings; and fatigue repair to steel stringers.

Firm	AECOM Technical Services, Inc.		
Name	Daniel Boyd, PE	Years of Relevant Experience with this Employer	2
Title	Bridge Design/Task Manager	Years of Relevant Experience with Other Employer(s)	13

Degree(s)/Years/Specialization			BS/2006/Civil Engineering
Active Registration Number/State/Expiration Date			PE.36728/LA/3.31.24 Additional license in TX
Year Registered	2011	Discipline	Civil Engineer
Contract Role(s)/Brief Description of Responsibilities			**Bridge Design/Task Manager**. Daniel has more than 15 years of structural engineering experience in the transportation industry. He most recently was a part of two design build projects, serving as a structural Independent Design Check Engineer for two prestressed bridge packages, and as structural task lead for the design of overhead traffic signs for LBJ East in Dallas, TX, and as bridge design engineer and Independent Design Check engineer for Oak Hill Parkway in Austin, TX. His technical experience also includes steel girder bridge design, precast/prestressed concrete girder design, structural steel design, structural concrete design, and deep and shallow foundations design. He has a thorough working knowledge of AASHTO and Louisiana DOTD Standards, as well as ACI, AISC, and ASCE. He has experience in both new construction and design projects, as well as retrofit and/or expansion projects requiring modifications to existing structures, bridges, and foundations to meet current engineering codes and industry best practices. Daniel also has field inspection experience before, during, and after construction.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
03/21-Ongoing	**TxDOT, Oak Hill Parkway, Austin, TX.** Design engineer for one bridge team, providing analysis and design for multiple substructures and foundations, Independent Design Check (IDC) engineer for the design of three prestressed bridge packages, and all IDC engineer for all Overhead Sign Structures for the project. IDC analyses were performed for entirety of each bridge structure, from geometry, superstructure design, substructure design, and foundation design to verify the validity of each design.
01/20-09/21	**TxDOT, LBJ East Design Build Project, Dallas, TX**. Completed detailed Independent Design Checks (IDC) for two prestressed bridge packages in the project. IDC analyses were performed for entirety of each bridge structure, from geometry, superstructure design, substructure design, and foundation design to verify the validity of each design. Structural Task Leader and engineer of record for the design of Overhead Sign Structures, consisting of 137 custom Overhead Sign Bridge (OSB) Structures and Cantilever Overhead Sign Structures (COSS), as well as ITS and Tolling equipment structures. The structure inventory included a combination of both ground mounted and bridge mounted applications. Design included analysis of the steel trusses for the OSB and COSS structures, analysis and design of custom aesthetic concrete support columns for the truss structures, and deep foundations for each structure. Provided construction support for sign structure task to answer RFI's, resolve issues, review shop drawings, etc.

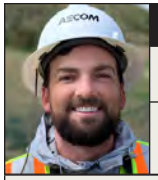
10/20-02/21	**TxDOT, IH 820 SE Connector Design-Build Project, Fort Worth, TX.** Performed preliminary structural design for multiple substructure and foundation arrangements, including inverted-tee bents, multi-column bents, hammer-head bents, and the foundations for each of these, as part of the preliminary design phase of a large design-build project. Also performed QA/QC on numerous bridge calculations, and detailed plan reviews on bridge plan drawings.
03/21-09/21	**LADOTD SPN H.004273.5, I–49, Connector, Lafayette, LA.** Performed a review of I–49 mainline viaduct layouts for the three different structural options being presented to LADOTD for selection. Performing reviews and updating structural quantities and costs to reflect current design layouts and current bid pricing to ensure consistency across the three structural options.
04/20-11/20	**Port of Gulfport, Port of Gulfport Connector, Gulfport, MS.** Structures discipline leader for preliminary phase of Gulfport connector project. Performed preliminary structure design for prestressed concrete girders and steel plate girder superstructures, preliminary substructure design, and geometric design for a new bridge structure on 30th Ave. spanning Hwy. 90 providing direct trucking access into the Port of Gulfport.
10/19-12/20	**Coastal Protection and Restoration Authority, LA 23 Bridge over Mid-Barataria Sediment Diversion, Plaquemines Parish, LA.** Structural Engineer that assisted in the Design Plans for the new bridge and roadway structure over the new sediment diversion. The project consists of a new concrete precast girder bridge, approximately 2,200 feet in length, and the connecting asphalt roadway. Provided calculation and plans peer reviews and QA/QC.
10/06-08/11	**LADOTD, US 71/165 Fort Buhlow Bridge/KCS Railroad Overpass, Alexandria, LA.** Structural design engineer. Designed main river spans consisting of two 3-span units (one each direction) with 300'-400'-300' steel girder spans, and multiple simple spans greater than 200' crossing river levees. Designed all aspects and components of the steel plate girder bridge units, including diaphragms, bolted splices, bearing, stiffeners, etc. Also performed analysis and design of prestressed concrete girders, concrete bridge deck and columns, pile bents and piles, and performed peer review on other components of the project. Collaborated with steel fabricator to review/approve shop drawings.
01/07-12/07	**City-Parish of East Baton Rouge, Highland Road (LA 42) Improvements (Perkins to Airline), Baton Rouge, LA.** Civil/ Structural design engineer for two new bridges on Highland Road at Ward's Creek crossing. Performed structural analysis on multiple aspects of project. Design included concrete bridge deck, guard rails, analysis and design of prestressed quad beam concrete girders, girder bearing design, and prestressed concrete piles and concrete bents. Also performed calculation reviews on multiple aspects of project.
09/19-10/19	**TxDOT, Loop 1604 From SH16 to IF-35, San Antonio, TX**. Prepared preliminary bridge layouts for two bridge overpasses and two creek crossings in a dense urban area with limited right-of-way. Preliminary design and layout were completed using TxDOT prestressed concrete girder standards. Performed QA/QC review for multiple bridges and crossings to ensure adequate vertical clearances were met.

Firm	AECOM Technical Services, Inc.		
Name	Ed Zhou, PhD, PE	Years of Relevant Experience with this Employer	28
Title	Instrumentation Task Leader/Task Manager	Years of Relevant Experience with Other Employer(s)	8

Degree(s)/Years/Specialization			BS/1982/Civil Engineering MS/1990/Civil Engineering PhD/1994/Structural Engineering
Active Registration Number/State/Expiration Date			21330/MD/9.2.2022 10086/DE/6.30.2022 0402 033413/VA/4.30.2023
Year Registered	1995	Discipline	Professional Engineer
Contract Role(s)/Brief Description of Responsibilities			**Instrumentation Task Leader/Task Manager**. Ed is AECOM's Bridge Instrumentation & Evaluation Lead in North America, with 28 years of experience in engineering practice. He has comprehensive knowledge and experience in multiple aspects throughout the bridge life cycle including structural analysis through finite element modeling, design, inspection, load rating, problem diagnosis, non-destructive evaluation (NDE), structural health monitoring, preservation, as well as repair, retrofit, rehabilitation, and replacement design of many types of bridge structures. He is an expert in fatigue and fracture of steel bridges and served as a past Chairman of ASCE Fatigue & Fracture Committee. Ed specializes in evaluation of existing bridges using a variety of instrumentation/testing/monitoring technologies and application of digital imaging and unmanned aircraft system (UAS) technologies for condition and deterioration assessment. He also has current experience in development of effective asset management tools to support bridge owners for data-driven decisions. Ed is an active member of TRB Committee AKB40 'Testing and Evaluation of Transportation Structures' and has played a key role in development of multiple national guidelines and standards: co-author of TRB Circular E-C257 'Primer for Bridge Load Testing'; expert panel member of NCHRP Project 20-05 'Load Rating of Bridges and Culverts with Missing or Incomplete As-Built Information'; and co-PI of NCHRP Project 12-81 'Evaluation of Fatigue on the Serviceability of Highway Bridges.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
12/19-02/20	**Colorado Department of Transportation (CDOT): Live Load Test for Investigating Concrete Cracking of Pier 5 Straddle Beam of WB-WB Ramp Bridge over C-470 Express Lanes, Douglas County, CO.** Technical Leader for live load testing of reinforced concrete straddle beam (6'-6" wide by 9'-0" deep by 81'-0" long) of Pier 5 of the 9-span prestressed concrete girder structure with a total length of 1,156 ft. The testing was for investigating concrete cracking in the straddle beam discovered during construction before the bridge opened to regular traffic.

04/14-Ongoing	**Connecticut Department of Transportation (CTDOT): Two-Year Structural Monitoring of Extradosed/Cable-Stayed Pearl Harbor Memorial Bridge (I-95 over Quinnipiac River) of Post-Tensioned Segmental Concrete Box Girders, CT.** Technical Leader for the development and implementation of a two-year structural monitoring program for the extradosed/cable-stayed 3-span dual structures consisting of post-tensioned segmental concrete box girders. Work scope includes: design of a comprehensive structural monitoring system (SMS) consisting of 252 sensors; development of a procurement package including instrumentation plans, performance specifications and qualification requirements; inspection and oversight during system installation by contractor; acceptance testing and commissioning of SMS; specification and oversight of live load and cable plucking tests at beginning, middle, and end of monitoring period; data collection, processing, management, analysis, interpretation and reporting throughout monitoring period; assessment of actual bridge behavior in comparison with analytical predictions by design models; establishment of normal behavior envelopes and anomalous behavior thresholds for sensor measurements; and recommendations to provide guidance for bridge maintenance, inspection, and load rating. Also included in this project is photogrammetric mapping of existing concrete cracks on interior of box girders and exterior of tower legs in 12 areas surrounding crackmeters at beginning, middle and end of two-year monitoring period.
11/20-Ongoing	**VDOT, Route 360 Corridor Evaluation of 22 Structures, Fredericksburg District.** Mr. Zhou serves as NDT Task Lead on this task to evaluate rehabilitation needs for 22 structures along the Route 360 corridor. He was responsible for development and quality assurance review on our program for assessment of the existing structure condition, including Infrared scanning for delamination detection, 3-dimensional ground penetrating radar for deck condition assessment, and digital image mapping for crack detection. Structures range in length up to 500 feet and include both concrete and steel superstructures. The analysis results supported our data-driven process for rehabilitation recommendations and budget prioritization.
05/18–06/19	**CDOT, I-76 over Clear Creek Fatigue Study, Adams County (CDOT NPS Contract), CO.** Lead Instrumentation Engineer for a fatigue study for EB and WB I-76 over Clear Creek. These bridges are highly skewed, multi-span, steel plate girder bridges that collectively have over 60 known distortion induced fatigue cracks due to a gap between the cross-frame stiffener and the bottom flange. The project included detailed inspections; instrumentation with strain gages and displacement transducers; full scale load testing; data collection and analysis; three-dimensional finite element analysis (FEA); and developing conceptual fatigue retrofit details. Field testing was used to calibrate the FEA to have an accurate tool to evaluate fatigue retrofit strategies. Adjustments to the model such as member properties and boundary conditions, allow the model to be refined to replicate the load test responses.
07/18-09/20	**Virginia Department of Transportation (VDOT): Vibration Testing and Evaluation of External P-T Tendons in Segmental Concrete Box Girders of Cable-Stayed Varina-Enon Bridge (I-295 over James River.** Technical Leader for applying the taut cable vibration measurement (TCVM) method for condition evaluation of external post-tensioning (P-T) tendons inside segmental concrete box girders of the 28-span dual structures built in 1990 with concerns on steel strand corrosion inside the grouted PVC duct.



Firm	AECOM Technical Services, Inc.		
Name	Landon Whitton, PE	Years of Relevant Experience with this Employer	6
Title	Bridge Rehabilitation/LRFR Load Ratings/ Bridge Inspection Task Leader/Task Manager	Years of Relevant Experience with Other Employer(s)	6

Degree(s)/Years/Specialization			BS/2009/Mechanical Engineering
Active Registration Number/State/Expiration Date			PE.0041523/LA/9.30.23 Additional licenses in MS, AR
Year Registered	2015	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Bridge Rehabilitation/LRFR Load Ratings/Bridge Inspection Task Leader/Task Manager**. Landon will be one of AECOM's Bridge Inspection Team Leaders and part of the Bridge Rehabilitation Design Team for this contract. He has technical and management experience in many facets of engineering projects. Landon's technical experience is in Bridge Load Ratings, design, and inspection. He routinely manages bridge and hydraulic projects.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
07/2020-09/2021	**Repair Assessment of Bridge No. 93.1, I-20 EB to I-55 NB, Jackson, MS.** Project Manager for the load rating and repair recommendations for Bridge No. 93.1 in Rankin County, MS. This bridge exhibits diagonal cracking of the concrete girders and spalling at the dapped girder ends which weakened the structural integrity of the bridge and warranted a load posting. The load rating was completed using a 3D finite element model using CSiBridge software. Landon directed the team to identify and develop rehabilitation measures such as bearing repair/replacements, bridge deck seal using high molecular weight methacrylate (HMWM), concrete patching, expansion joint replacement, and dapped girder rehabilitation.
03/16-04/16	**Contract No. 44-2687 State Project No. H.009730.5 Louisiana Department of Transportation and Development, LA 2 over Red River Bridge In-Depth Inspection, LA.** Bridge Inspector for the in-depth inspection of LA 2 over Red River Bridge (a through truss with a total length of 3,059' in northwestern Louisiana).
07/17-Ongoing	**Mississippi Office of State Aid Complex Inspections, MS.** Project Manager, Inspection Team Leader. Mississippi Office of State Aid hired AECOM to perform 168 inspections and load ratings of county bridges across the Northern part of the state. Landon manages the project as well as performing bridge inspection on the project.
07/18-Ongoing	**Mississippi Department of Transportation (MDOT) US 82 Cable-Stayed over Mississippi River Bridges Fracture Critical and Element Inspections, MS.** Project Manager, Inspection Team Leader. MDOT hired AECOM to perform Fracture Critical and Routine Element Inspections of the cable-stayed bridge on US 82 over the Mississippi River. The scope of this inspection also includes the assistance of a UAV. Landon is the Project Manager, and will also perform rope access as an Inspection Team Leader.
07/16-01/17	**Mississippi Department of Transportation (MDOT) US 84 over Mississippi River Bridges Fracture Critical and Element Inspections, MS.** Inspection Team Leader. MDOT needed Fracture Critical and Routine Element Inspections of both the Eastbound and Westbound Bridges on US 84 over the Mississippi River. Landon acted as Deputy Project Manager and Inspection Team Leader on the project, and prepared the final inspection report.

12/17-Ongoing	**Mississippi Department of Transportation (MDOT), Post-Tensioned Load Ratings, MS.** Project Manager and Load Ratings Engineer. MDOT hired AECOM to perform load ratings on 13 Post-tensioned bridges using CSI Bridge software. The superstructure types were Box-Girder w/ post tensioning over the piers, I-girders w/ post tensioning, and haunched I-girders with post-tensioning. Landon served as Project Manager and as well as Load Ratings Engineer.
08/16-Ongoing	**Mississippi Department of Transportation (MDOT), Phase-A Bridge Designs, Project Manager and Bridge Design Engineer, MS.** Project Manager. Landon serves as project manager and lead bridge designer of the Phase A projects for the following locations: SR 15 in Tippah County, MS, SR 145 in Clarke County, MS, Madison Avenue in Madison County, MS.
09/16-03/17	**Mississippi Department of Transportation (MDOT), Statewide Bridge Deck Scanning and Visual Surveys, MS**. Project Manager. Landon was responsible for both Project Management and performing Visual Surveys of the bridge deck undersides.
11/17-Ongoing	**Mississippi Department of Transportation, (MDOT) Phase III and IV Scour Evaluations, MS.** Project Manager and Bridge Engineer. MDOT hired AECOM to perform Phase III and IV Scour Evaluations of I-59 over Tangipahoa River and I-55 over Black Creek and Little Black Creek. Landon is responsible for the management and bridge engineering on the project. I-55 over Tangipahoa River in Pike River County, MS, I-59 over Black Creek and Little Black Creek Lamar, MS.
05/15-05/16	**Mississippi Department of Transportation (MDOT) NBIS Compliance Field Review (while at MDOT) MS.** Review Team Member. Reviewed 20 inspections performed by MDOT bridge inspectors, by inspecting the subject bridges with the Local FHWA Bridge Engineer and MDOT's Inspection Program Manager. FHWA determined MDOT's compliance to the NBIS based on the results of this review.
08/12-06/15	**Mississippi Department of Transportation (MDOT) Tennessee-Tombigbee Waterway Routine Inspections (while at MDOT).** Inspection Team Leader on the inspection team for the yearly Fracture Critical inspections of five Bridges along the Tennessee-Tombigbee Waterway. Each Bridge contained a 1,000ft parabolic steel girder superstructure.
08/12-05/15	**Mississippi Department of Transportation (MDOT) US 82 Cable-Stayed over Mississippi River Bridges Fracture Critical (while at MDOT), MS.** Inspection Team Leader. In this project, MDOT needed a fracture critical inspection on the superstructure of the Cable-Stay Bridge in Greenville, MS over the Mississippi River. In this inspection, all fracture critical members on the underside of the deck were inspected. Landon helped with the inspection and report.

	Firm	AECOM Technical Services, Inc.		
	Name	Steven Haynes, PE	Years of Relevant Experience with this Employer	18
	Title	Bridge Design/Bridge Rehabilitation	Years of Relevant Experience with Other Employer(s)	21

Degree(s)/Years/Specialization			BS/1978/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0043319/LA/9.30.22 0030477/CO/10.31.2023 0134785/TX/3.31.2023
Year Registered	1985	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Bridge Design/Bridge Rehabilitation**. Steven is a senior project manager and bridge designer with extensive experience in analysis, design, and construction management of bridges and other structures. He is knowledgeable in the design procedures adopted by various states, including Colorado and Texas, and is very familiar with AASHTO LRFD bridge design specifications and AASHTO LRFD bridge construction specifications for steel, precast, and post-tensioned concrete bridges, including the design of complex substructures. Steven has been involved in many design study reports that required evaluating unusual types of structures including arches, tied arches, and tied back structures. He has led engineering design teams whose duties ranged from civil and structural design through the plan, specification & estimate, and construction to completion, for a wide variety of steel, concrete, and timber bridges as well as retaining walls and approach roadways. Steven has designed many complex retaining wall structures higher than 30 feet, some of which involved the design of soil-nail, caisson, and tied-back wall systems. Steven is also experienced in assessing hydrologic and geotechnical information, roadway geometry, traffic requirements, highway safety, economics, and aesthetics. He understands the importance of working closely with roadway designers and others to develop the most feasible design for each site. Steven has provided quality control reviews of final contract plans and specifications for numerous tension control bolt bridge design and other structural projects.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
07/20-09/21	**Repair Assessment of Bridge No. 93.1, I-20 EB to I-55 NB, Mississippi Department of Transportation, Jackson MS.** Provided technical support for an in-depth finite-element analysis to generate a bridge load rating analysis and repair recommendations for Bridge No. 93.1 in Rankin County, MS. This bridge is in generally fair condition, however, diagonal cracking of the concrete girders with moderate spalling was noted at the dapped girder ends which weakened the structural integrity of the bridge and warranted a load posting.
07/20-12/20	**El Paso County, South Academy Blvd over BNSF Rehabilitation, El Paso County, CO.** Bridge engineer for the scour mitigation design for a 5-span, prestressed concrete girder bridge over Fountain Creek in Colorado Springs. As part of the bridge preservation efforts, Steve developed bridge foundation strengthening details for the existing piers in the floodplain.

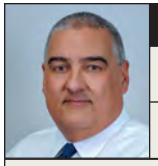
7/15-Ongoing	**Louisiana Department of Transportation and Development (H.004273) I-49 Connector, Lafayette, LA.** Lead Engineer. Structural Task Assignments included the conceptual designs of Signature Bridge Options totaling approximately 840 feet in length and a main span approximately 400' over Johnstown Blvd. Technical Task Leader and for AECOM Denver's portion of this design study report. Mr. Haynes provided QC for the superstructure and design of the substructure elements for this bridge, including straddle bents in excess of 130' in length. AECOM Denver was tasked with the design for Spliced U-Girder Alternative. The viaduct consisted of multiple structures. The study area and was in excess of 15000' long with a number of ramps. Considering the parallel I-49 structures, the overall bridge length studied was in excess of 10,000 feet each and over 120 spans total. Midas and CSiBridge were utilized for the designs of the structures. Designed the structure in accordance with LADOTD's Guidelines and AASHTO LRFD requirements.
10/17-12/19	**Washington DC Department of Transportation, Frederick Douglass Memorial Bridge, Washington DC.** Structural Engineer designing foundations for this 3 span suspended arch bridge crossing the Anacostia River. The bridge is 1445' in length and spans 540' over the main channel. Challenges included designing deep pile foundations in soft soils, including the design of the bridge for active threats, such as ship collisions which could potentially damage several supporting piles at the piers. The design plans comply with Washington D.C's DOT Standards and AASHTO's LRFD Requirements.
1/07-12/08	**North Texas Tollway Authority, SH 121 (Southwest Parkway) at I-30 Interchange (Segment 1), Denton County, TX.** Structural engineer, structural analyst, and designer for five bridges. Bridges ranged from 6 to over 20 spans and consisted of prestressed concrete beams in the span ranges from 90 to 122 feet. Challenges included a several straddle bents with spans in excess of 60 feet and cantilever bents in excess of 20 feet. The design and plans comply with NTTA, TxDOT, and AASHTO's LRFD requirements.
09/18-05/19	**LADOTD (H.011670), I-10 at Loyola Avenue Interchange Design-Build Tender Offer, Kenner, LA.** Structure Engineer for interchange improvements at the I-10 at Loyola Drive to provide new direct access ramps to handle traffic to and from the new passenger terminal at Louis Armstrong International Airport. Design tasks included evaluating alternative technical concepts, preliminary design and layouts for prestressed concrete LG girder superstructures, proposal plan development and quantity calculations for contractor estimating and bid.
01/07-06/07	**City of Weatherford, FM2552 over Town Creek and Union Pacific Railroad - FM2552 Reroute, Weatherford, TX.** Project engineer for design of the 644-foot-long, 7-span bridge over Town Creek and the UPRR. The bridge was designed in accordance TxDOT and AASHTO standard specifications. The superstructure consists of prestressed concrete Type IV I-beams; however, special consideration was required for three spans that were designed on a 700-foot radius. Special consideration was also required to accommodate UPRR requirements, which included a special safety fence that was designed to satisfy local aesthetic requirements.

Firm	AECOM Technical Services, Inc.		
Name	Sean Voisinet, PE	Years of Relevant Experience with this Employer	9
Title	Bridge Design	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/2009/Architectural Engineering
Active Registration Number/State/Expiration Date			PE.0041523/LA/9.30.23
Year Registered	2022	Discipline	Civil Engineering
Active Registration Number/State/Expiration Date			144036/TX/12.31.2022
Year Registered	2022	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			53420/CO/10.31.2023
Year Registered	2017	Discipline	Civil Engineer
Contract Role(s)/Brief Description of Responsibilities			**Bridge Design**. Sean is a bridge engineer with 9 years of experience in the design, rehabilitation, and widening of urban street, highway and railway bridges in Colorado, Texas, Utah and Louisiana. His experience includes design and management for a variety of transportation structures including complex retaining walls, concrete box culverts, drainage junction structures, and traffic sign structures. His experience also includes preparing final design calculations, construction plans, project special provisions and project cost estimates formatted in accordance with capital project guidelines.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
03/18-Ongoing	**LADOTD (H.004273), I-49 Connector, Lafayette, LA.** Structural engineer for the conceptual and preliminary design of this 7-mile reconstruction of I-49 through downtown Lafayette, LA. This project has a budget projected over $1 billion and includes approximately 20 bridges and numerous retaining walls. Sean is responsible for developing conceptual layouts and preliminary design for eight precast concrete segmental span-by-span ramp bridges that frame into the 2-mile viaduct structure through the Lafayette Central Business District.
04/18-09/18	**CDOT, SH 59/I-70 Emergency Bridge Replacement (CDOT NPS Contract), Seibert, CO.** Structures Engineer for the emergency bridge replacement project of the SH59 Bridge over I-70 in eastern Colorado. Sean developed preliminary superstructure layout alternatives and provided final design and detailing of the steel sheet pile retaining walls for this multi-disciplinary, blended-team project bridge and interchange reconstruction project. CMAR contracting enabled CDOT's project team to replace the bridge and bring the interchange geometry to current AASTHO standards re-opening the interchange 76-days after the initial closure.
02/21-12/21	**City of Fort Collins, Lemay Avenue over BNSF/Vine Improvements, Fort Collins, CO.** Structure Engineer for the design development for a new bridge crossing over Vine Street and the BNSF Railway tracks in northeast Fort Collins. Using a CM/GC project delivery, Sean designed the single-span bridge comprised of a prestressed concrete box girder superstructure on integral abutments on steel piles with geosynthetic reinforced soil (GRS) supporting walls and a pedestrian underpass box culvert structure with wingwalls. Design efforts included railroad coordination and design submittals developed in accordance with the UPRR/BNSF RR Grade Separation Guidelines.

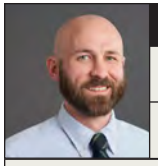
09/18-05/19	**LADOTD (H.011670), I-10 at Loyola Avenue Interchange Design-Build Tender Offer, Kenner, LA.** Structure Engineer for interchange improvements at the I-10 at Loyola Drive to provide new direct access ramps to handle traffic to and from the new passenger terminal at Louis Armstrong International Airport. Design tasks included evaluating alternative technical concepts, preliminary design and layouts for prestressed concrete LG girder superstructures, proposal plan development and quantity calculations for contractor estimating and bid.
01/21-Ongoing	**TxDOT, Southeast Connector Design-Build, Fort Worth, TX.** Structure Engineer and Task Manager for this $1.6 billion design-build project to reconstruct and widen 16.6 miles of I-820, I-20 & US-287. During the project pursuit, Sean was responsible for developing alternative technical concepts and managed a team to develop bridge layouts and preliminary proposal plans for 32 bridges, including quantity calculations for contractor estimating and bid. Sean is currently the structures task lead for the final design of seven highway overpass and ramp structures comprised of prestressed concrete Tx I-girders.
07/19-12/21	**TxDOT, I-635 LBJ East Design-Build, Dallas, TX.** Design-Build project to reconstruct and widen 11 miles of interstate roadway. Sean was the structural design engineer responsible for a 24-span (3100 ft) direct connector bridge at the I-635/I-30 Interchange comprised of prestressed concrete Tx I-girders on hammerhead bents on two drilled shaft footing caps and multi-column straddle bents on monoshaft foundations. Additional responsibilities included final substructure and foundation design for the 280 ft span Skillman St. Tied Arch Signature Bridge supported on abutment caps and drilled shafts.
04/16-11/20	**CDOT, C-470 Express Tolled Lanes Design-Build, Denver, CO.** As part of CDOT's $215 million C-470 Express Lanes Design Build Project, AECOM designed and constructed (16) bridges and (18) overhead sign structures for this 12.5-mile corridor in Denver, Colorado. Sean was the lead structural designer for six bridge widenings comprised of prestressed concrete BT girder superstructures on hammerhead bents on drilled caissons and integral abutments on steel piles. Sean was also lead designer for a 9-span (1150 ft) flyover structure with prestressed concrete BT girders on hammerhead bents and semi-integral inverted tee bents on drilled caissons and semi-integral abutments on drilled caissons and performed extensive structural drafting and detailing. Independent designer responsibilities included several cast-in-place cantilever retaining walls, special drainage junction structures, sound walls, non-standard monotube overhead sign structures, and bridge widening load ratings. Sean was also the Structures Task Lead for post-design construction support services including answering RFIs, field design changes, and overseeing deck rehabilitation and other construction activities.
10/12-06/17	**Regional Transportation District of Denver, I-225 Light Rail Line Design-Build, Aurora, CO.** Design-build of a 10.5-mile LRT extension with 8 stations and 7 bridges. Sean was the lead wall designer for various structures including cast-in-place cantilever walls, caisson walls, soldier pile walls and geometric layouts and design coordination for mechanically stabilized earth walls and soil nail walls. Superstructure designer for a 9-span (700 ft) ballasted light rail bridge utilizing prestressed BT girders. Substructure designer for a prefabricated pedestrian bridge supported on abutment caps on drilled caisson foundations. Additional responsibilities included extensive structural drafting and detailing as well as post-design construction support services including structural shop drawing reviews and field design changes.
08/18-02/20	**CDOT, I-25 Improvements MM127-MM138, Colorado Springs, CO.** Sean was the structural designer responsible for assessing the existing structures in the corridor to determine feasibility of bridge widening versus replacement. Additional tasks included concept level design and layout of a steel through plate girder railroad bridge replacement over I-25.
11/14-07/19	**CDOT, SH60 & SH257 over Little Thompson River Bridge Replacements, Milliken, CO.** Sean was the lead designer for a 3-span bridge and the independent designer for a 2-span bridge over the Little Thompson River. Superstructures were comprised of prestressed BT girders on multi-column bent caps on drilled caissons and integral abutments on steel piles. Additional design responsibilities included performing an existing conditions assessment with scour analysis based on damages that occurred due to flooding, which resulted in a recommendation for two bridge replacements, and completion of structure type selection reports.

	**Firm**	**AECOM Technical Services, Inc.**		
	Name	Patrick Hays, PE, SE	Years of Relevant Experience with this Employer	14
	Title	Bridge Design	Years of Relevant Experience with Other Employer(s)	25

Degree(s)/Years/Specialization			BS/1982/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0036668/LA/3.31.24
Year Registered	2011	Discipline	Civil/Structural Engineer
Active Registration Number/State/Expiration Date			88034/TX/12.31.2022
Year Registered	2001	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Bridge Design**. Patrick is a deputy regional bridge practice leader responsible for coordination of the highway structures design practice in Louisiana, Texas, Wisconsin and Minnesota. He has 39 years of experience in the design, rehabilitation, and widening of highway and railway bridges in Texas, Florida, Oklahoma, Kansas, and Missouri. He has managed projects involving a variety of transportation structures.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
09/20-Ongoing	**TxDOT, Austin District, Oak Hill Parkway Design-Build, Austin, TX.** Retaining Wall discipline leader on this $675 million design-build project that will completely reconstruct US290 from west of Southview Rd/Circle Drive to east of Old Fredricksburg Road, plus a widening segment to the west end of the Industrial Oaks Overpass. In addition, the project includes reconstruction of SH71 from the US290 "Y" Interchange to Silvermine Drive. The project includes two major interchanges at US290/SH71 and at US290/Wm Cannon Drive. Total project length is 6.1 miles along US290 and 1.2 miles along SH71. Supervised 4 segment teams for the delivery of approximately 80 retaining walls and 3 sound walls. The project also included 25 bridges in the scope, consisting of underpasses, overpasses and direct connectors. Responsibilities also include coordination with the contractor team, owner, other discipline leads, and the design manager.
08/09-10/12	**North Texas Tollway Authority, SH 161 (George Bush Turnpike - Western Extension) Phase 4 - Design-Build, Grand Prairie, TX.** Structures discipline leader for a 6.5-mile extension of the SH 161 toll facility from IH-20 to IH-30 including major multi-level interchanges at I-20 and I-30. Supervised eight design teams in multiple locations for the delivery of the bridge and wall engineering scope. The project included 44 bridges, including underpass bridges at Jefferson Street, Union Pacific Railroad, Main Street, Dalworth Street, and Tarrant Road, constructed using a top-down approach. The project also included overpass bridges at Robinson Road, Forum Drive, Mayfield Road, Warrior Trail, Arkansas Lane, Pioneer Parkway, Marshall Drive, Dickey Road/SW 14th Street, and January Lane. In addition, the project included creek crossings at Fish Creek, Kirby Creek, South Fork Cottonwood Creek, and Cottonwood Creek. All retaining walls were designed and constructed in challenging expansive clays and eagle ford shale. The project included the incorporation of aesthetic OSB, COSS, and toll gantry structures, compliant with the NTTA aesthetic guidelines and standards. Responsible for the preparation of formal responses and resolution of comments received from the NTTA & TxDOT staff.

08/19-Ongoing	**TxDOT, Dallas District, 635 East Design-Build, Dallas, TX.** Structures design manager on this $1.73 billion design-build project that will completely reconstruct I-635/LBJ Freeway from US75 Central Expressway thru the I-30 Interchange in East Dallas. Responsible for leading the structures discipline for the delivery of bridge design for this 11-mile long facility. Supervised 13 bridge teams for the delivery of over $20 million of bridge design scope. The project involves the design of 61 bridges, including a complex interchange at I-30 as well as a 300 ft long tied arch structure carrying Skillman Avenue over I-635. The project also included the design of cut (soil nail) retaining walls at a 635East underpasses at DART Blue Line and the DART pedestrian crossing that required extensive coordination. Responsibilities also include coordination with the contractor team, owner, other discipline leads, and the design manager.
07/17-05/18	**95Express/Virginia Department of Transportation, 395 Express Lane Design-Build, Springfield, VA.** On temporary assignment (August 2017 to April 2018), served as a Deputy Design Manager for this project, which is a 7.7 mile extension of the existing 95 Express Lanes in Fairfax County, VA. The project involves the conversion of two existing HOV lanes in this corridor to three High Occupancy Toll (HOT) lanes, fully integrated into the existing 95 Express Lane system (tolled). Assisted the Design Manager with leading and documenting eight weekly meetings (Design-Build Coordination, Technical Workgroup Meeting, Discipline Lead Coordination and (5) Segment Design Coordination meetings). Also assisted with the collection of schedule updates from design leads for the preparation of weekly schedule updates and narrative reports to the Design-Build Contractor (LANE), 95Express, and VDOT.
10/07-10/12	**TxDOT, SH 130 Toll Facility Design, Segments 5 and 6, Travis and Caldwell Counties, TX.** Structures discipline leader for a 26-mile extension of SH 130 from Mustang Ridge (SH 45 SE interchange) to the San Marcos River. The project included 51 bridges, including multi-level interchanges at SH 45 SE and US 183, underpass bridges at CR 222, Plum Creek turnaround, CR 108, CR 217, CR 109, SH 80, CR 218 turnaround, and CR 218. Also included were overpass bridges at Maha Loop, Laws Road, CR 176, SH 21, CR 179, FM 1185, FM 2001, Union Pacific Railroad, and SH 142; and creek crossings at Maha Creek, Plum Creek, Clear Fork Creek, and Dickerson Creek. A featured set of 4 overpasses at the UPRR in Lockhart, TX required extensive coordination. Led all aspects of the structure design services for bridges, retaining walls, box culverts, high-mast lighting, sign structures, toll gantries, and other miscellaneous structures. Organized, led, and coordinated the activities of seven structures design teams located across the country. Coordinated directly with CTxHC design and construction staff regarding corridor wide structures project issues, and responsible for the resolution of all comments received on bridge and retaining wall submittals.
09/12-06/17	**TxDOT, Dallas District, I-35E/I-30 Horseshoe Interchange Design-Build, Dallas, TX.** Led the design delivery of 21 bridges on the IH-35E leg of this $750 million interchange with IH-30 in downtown Dallas. Supervised five bridge teams and one specialty team for the delivery of the bridge design scope. The IH-35E bridges included 4 major structures over the Trinity River, each featuring a 1,000-foot-long, 4-span, spliced prestressed girder unit consisting of Tx82 girders and 130-inch-deep haunched sections over the intermediate bents within the unit. All SPG segments were post-tensioned for continuity. The spliced prestressed girder unit was proportioned to accommodate the future Trinity Lakes plan and required coordination with the US Army Corps of Engineers regarding construction in and around the Trinity River levee system. The IH-35E leg of the Horseshoe Interchange also included multiple ramp and direct connector bridges, as well as several overpass structures at Colorado Street.

	**Firm**	**AECOM Technical Services, Inc.**		
	Name	Ian McElhone, PE	Years of relevant experience with this employer	11
	Title	Bridge Design	Years of relevant experience with other employer(s)	0

Degree(s)/Years/Specialization			BS /2009/Civil Engineering MS/2011/Civil Engineering
Active Registration Number/State/Expiration Date			57586/VA/04.30.2023
Year Registered	2017	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			30790/KY/06.30.2022
Year Registered	2015	Discipline	Civil Engineer
Contract Role(s)/Brief Description of Responsibilities			**Bridge Design**. Ian is responsible for the analysis, design, details, rehabilitation, project reports, and seismic analysis for all types of highway structures, including complex and long-span bridges. Mr. McElhone has experience with bridge maintenance, repair, and rehabilitation, including the use of non-destructive testing methods. Mr. McElhone is a certified FHWA Bridge Inspection Team Leader and Society of Professional Rope Access Technicians Level II Technician.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
09/20-Ongoing	**TxDOT, Austin District, Oak Hill Parkway Design-Build, Austin, TX.** Retaining Wall discipline leader on this $675 million dollar design-build project that will completely reconstruct US290 from west of Southview Rd/Circle Drive to east of Old Fredricksburg Road, plus a widening segment to the west end of the Industrial Oaks Overpass. In addition, the project includes reconstruction of SH71 from the US290 "Y" Interchange to Silvermine Drive. The project includes two major interchanges at US290/SH71 and at US290/Wm Cannon Drive. Total project length is 6.1 miles along US290 and 1.2 miles along SH71. Supervised 4 segment teams for the delivery of approximately 80 retaining walls and 3 sound walls. The project also included 25 bridges in the scope, consisting of underpasses, overpasses and direct connectors. Responsibilities also include coordination with the contractor team, owner, other discipline leads, and the design manager.
08/09-10/12	**North Texas Tollway Authority, SH 161 (George Bush Turnpike - Western Extension) Phase 4 - Design-Build, Grand Prairie, TX.** Structures discipline leader for a 6.5-mile extension of the SH 161 toll facility from IH-20 to IH-30 including major multi-level interchanges at I-20 and I-30. Supervised eight design teams in multiple locations for the delivery of the bridge and wall engineering scope. The project included 44 bridges, including underpass bridges at Jefferson Street, Union Pacific Railroad, Main Street, Dalworth Street, and Tarrant Road, constructed using a top-down approach. The project also included overpass bridges at Robinson Road, Forum Drive, Mayfield Road, Warrior Trail, Arkansas Lane, Pioneer Parkway, Marshall Drive, Dickey Road/SW 14th Street, and January Lane. In addition, the project included creek crossings at Fish Creek, Kirby Creek, South Fork Cottonwood Creek, and Cottonwood Creek. All retaining walls were designed and constructed in challenging expansive clays and eagle ford shale. The project included the incorporation of aesthetic OSB, COSS, and toll gantry structures, compliant with the NTTA aesthetic guidelines and standards. Responsible for the preparation of formal responses and resolution of comments received from the NTTA & TxDOT staff.

08/19-Ongoing	**TxDOT, Dallas District, 635 East Design-Build, Dallas, TX.** Structures design manager on this $1.73 billion dollar design-build project that will completely reconstruct I-635/LBJ Freeway from US75 Central Expressway thru the I-30 Interchange in East Dallas. Responsible for leading the structures discipline for the delivery of bridge design for this 11-mile long facility. Supervised 13 bridge teams for the delivery of over $20 million of bridge design scope. The project involves the design of 61 bridges, including a complex interchange at I-30 as well as a 300 ft long tied arch structure carrying Skillman Avenue over I-635. The project also included the design of cut (soil nail) retaining walls at a 635East underpasses at DART Blue Line and the DART pedestrian crossing that required extensive coordination. Responsibilities also include coordination with the contractor team, owner, other discipline leads, and the design manager.
07/17-05/18	**95Express/Virginia Department of Transportation, 395 Express Lane Design-Build, Springfield, VA.** On temporary assignment (August 2017 to April 2018), served as a Deputy Design Manager for this project, which is a 7.7 mile extension of the existing 95 Express Lanes in Fairfax County, VA. The project involves the conversion of two existing HOV lanes in this corridor to three High Occupancy Toll (HOT) lanes, fully integrated into the existing 95 Express Lane system (tolled). Assisted the Design Manager with leading and documenting eight weekly meetings (Design-Build Coordination, Technical Workgroup Meeting, Discipline Lead Coordination and (5) Segment Design Coordination meetings). Also assisted with the collection of schedule updates from design leads for the preparation of weekly schedule updates and narrative reports to the Design-Build Contractor (LANE), 95Express, and VDOT.
10/07-10/12	**TxDOT, SH 130 Toll Facility Design, Segments 5 and 6, Travis and Caldwell Counties, TX.** Structures discipline leader for a 26-mile extension of SH 130 from Mustang Ridge (SH 45 SE interchange) to the San Marcos River. The project included 51 bridges, including multi-level interchanges at SH 45 SE and US 183, underpass bridges at CR 222, Plum Creek turnaround, CR 108, CR 217, CR 109, SH 80, CR 218 turnaround, and CR 218. Also included were overpass bridges at Maha Loop, Laws Road, CR 176, SH 21, CR 179, FM 1185, FM 2001, Union Pacific Railroad, and SH 142; and creek crossings at Maha Creek, Plum Creek, Clear Fork Creek, and Dickerson Creek. A featured set of 4 overpasses at the UPRR in Lockhart, TX required extensive coordination. Led all aspects of the structure design services for bridges, retaining walls, box culverts, high-mast lighting, sign structures, toll gantries, and other miscellaneous structures. Organized, led, and coordinated the activities of seven structures design teams located across the country. Coordinated directly with CTxHC design and construction staff regarding corridor wide structures project issues, and responsible for the resolution of all comments received on bridge and retaining wall submittals.
09/12-06/17	**TxDOT, Dallas District, I-35E/I-30 Horseshoe Interchange Design-Build, Dallas, TX.** Led the design delivery of 21 bridges on the IH-35E leg of this $750 million interchange with IH-30 in downtown Dallas. Supervised five bridge teams and one specialty team for the delivery of the bridge design scope. The IH-35E bridges included 4 major structures over the Trinity River, each featuring a 1,000-foot-long, 4-span, spliced prestressed girder unit consisting of Tx82 girders and 130-inch-deep haunched sections over the intermediate bents within the unit. All SPG segments were post-tensioned for continuity. The spliced prestressed girder unit was proportioned to accommodate the future Trinity Lakes plan and required coordination with the US Army Corps of Engineers regarding construction in and around the Trinity River levee system. The IH-35E leg of the Horseshoe Interchange also included multiple ramp and direct connector bridges, as well as several overpass structures at Colorado Street.

Firm	Forte & Tablada, Inc.		
Name	Joffrey Easley, PE	Years of Relevant Experience with this Employer	14
Title	Bridge Design	Years of Relevant Experience with Other Employer(s)	3

Degree(s)/Years/Specialization			BS/2000 MS/2003
Active Registration Number/State/Expiration Date			PE.31542/LA/3.31.23
Year Registered	2015	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Bridge Design**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
03/18-Ongoing	**LA DOTD Retainer Contract for Off-System Bridge Load Rating – Statewide, LA.** Project Manager, Load Rating Engineer, and Team Leader for a retainer contract that includes multiple Task Orders to inspect and load rate off-system bridges and culverts across the state. Task Order 1 – Inspection and load rating of 12 complex off-system bridges, including lift spans, swing spans, bascule spans, ferry landings, and truss bridges; Task Order 2 – Inspection and load rating of approximately 200 off-system bridges, consisting primarily of slab spans; Task Order 4 – Inspection and load rating of approximately 300 off-system bridges, consisting primarily of slab spans, but also including concrete and steel girder spans.
01/21-9/21	**Retainer for Bridge Preservation – US90Z: Westbank Expressway Rehab, Jefferson Parish, LA.** Project Manager to develop plans for the rehabilitation of the nearly 6-mile long Westbank Expressway in Jefferson Parish, LA.
10/15-4/19	**LA DOTD Retainer Contract for Bridge Preservation – Atchafalaya Floodway.** Project Manager to provide engineering services for the rehabilitation of multiple bridges along I-10 between Baton Rouge and Lafayette. Bridge types included PPC and steel girder spans, steel grid deck, and slab spans. Scope of work included performing a detailed inspection, documenting deficiencies, and preparing rehabilitation plans for all bridges.
04/19	**Load Rating of On-System Bridges – Statewide, LA – LA DOTD.** Load rating engineer for over 200 slab span and girder bridges across Louisiana. Utilized Virtis load rating software.
05/16-10/19	**Retainer Contract for Complex Bridge Rating, Statewide, LA- LA DOTD.** Project Manager to perform a load rating for the US 90 West Middle River Bridge near the Louisiana/Mississippi border. A detailed inspection of the steel through-trusses was also provided.
06/16-04/20	**St. Tammany Parish Off-System Bridge Load Ratings, St. Tammany Parish, LA.** Project Manager to collect all available bridge files from all available resources, including LADOTD and Parish records, for numerous slab span, girder, and railcar bridges in St. Tammany Parish and perform inspections and load ratings for the bridges.
11/16-10/20	**Livingston Parish Off-System Bridge Load Ratings – Livingston Parish, LA.** Inspection and load rating of numerous existing slab span bridges and culverts so that Livingston Parish would follow FHWA Metric 13, which requires all Off-System bridges to be load rated.
04/18-09/18	**Tangipahoa Parish Off-System Bridge Load Ratings – Tangipahoa Parish, LA.** Inspection and load rating of 2 railroad flatcar bridges and a slab span bridge to comply with FHWA Metric 13, which requires a load rating of all Off-System bridges.

05/20-07/20	**St. James Parish Off-System Bridge Load Rating – St. James Parish, LA.** Inspection and load rating of a slab span bridge to comply with FHWA Metric 13, which requires a load rating of all Off-System bridges.
08/19-02/20	**LA DOTD Retainer for In-Depth Bridge Inspections – Simmesport, LA.** Inspection of the approach spans, consisting of rolled steel and plate girder spans supported by column bents, of the LA 1 bridge over the Atchafalaya River.
04/11-10/16	**Iberville Parish Off-System Bridge Load Ratings and Prioritization – Iberville Parish, LA**. Inspection and load rating of 42 existing off-system bridges so that Iberville Parish would follow FHWA Metric 13, which requires all Off-System bridges to be load rated. Also developed a repair and replacement report for all bridges.
12/12-Ongoing	**Cook Road Expansion** Designed and produced plans for new bridges over Gray's Creek to provide additional access to the Juban Crossing shopping center by extending Cook Road off of Pete's Highway. Bridge includes special details to accommodate sidewalks for pedestrian use.
10/18-5/19	**H.000445.1-1- US 190 over UPRR and Little Teche Bayou, St. Landry Parish, LA.** Project Engineer for this project that developed a scoping document for the replacement or rehabilitation of the EB and WB US 190 bridges over the Union Pacific Railroad (UPRR) near I-49 and over Little Teche Bayou in St. Landy Parish, LA. Based on the findings, a Bridge Evaluation Report outlining the feasibility and preliminary cost estimates for several construction phasing alternatives, as well as a recommended scope of work, was developed.
11/14-08/16	**Westdale Road over Bayou Pierre Repairs – DeSoto Parish, LA.** Inspected, laser scanned, developed plans, and provided construction administration services for the repairs of a timber bridge that had been closed due to its deteriorated condition. Provide a load rating following the completion of the repairs. Repairs allowed the bridge to be re-opened to vehicular traffic.
01/16 - 01/21	**Whittington Road Bridge Replacement** – Livingston Parish, L. Design engineer for the replacement of an existing timber bridge over Grays Creek with a new concrete slab span bridge through the LADOTD off-system bridge replacement program.
12/13-05/14	**Million Dollar Road Bridge Rating – St. Tammany Parish, LA.** Served as a rating engineer for load rating of a slab span bridge in St. Tammany Parish. Utilized Virtis load rating software.
06/15-06/16	**East Baton Rouge Parish Bridge Replacement.** Provided design services and load rated multiple slab span bridges that incorporated sidewalks. Design services included determination of pile loads, superstructure and substructure design, and independent technical review of completed plans.
05/13-12/14	**Musson Lane Bridge Replacement, Iberville Parish, LA.** Performed a detailed structural inspection and load rating of the existing bridge constructed of precast concrete spans and timber caps and piles. Developed plans and specifications for the replacement of the existing bridge with a new precast concrete slab span bridge.

Firm	AECOM Technical Services, Inc.		
Name	Kendra VanGorp, EI	Years of Relevant Experience with this Employer	13
Title	LRFR Load Ratings	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/2007/Civil Engineering MS/2009/Civil Engineering
Active Registration Number/State/Expiration Date			EI 0064207/CO
Year Registered	2007	Discipline	Civil Engineer
Contract Role(s)/Brief Description of Responsibilities			**LRFR Load Ratings**. Kendra is a bridge engineer with experience in multidisciplinary transportation projects including design of numerous highway structures, concrete box culverts, and retaining walls; load rating hundreds of existing and proposed bridges; and bridge widening, rehabilitation, preventative maintenance, and inspection. Design and load rating analysis include various structure types including precast prestressed I-girders, box girders, and steel plate girders over waterways, roadways, and railroads for state and local agencies.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
03/17-Ongoing	**City and County of Denver, Park Avenue Viaduct Rehabilitation, CO.** Bridge engineer for the $14 million rehabilitation of an elevated viaduct structure consisting of five steel plate girder viaducts that frame into a central post-tensioned concrete waffle slab located over the BNSF and UPRR railroads and RTD tracks. The project includes modular expansion joint and bearing replacement; bridge deck repairs; replacement of concrete curb ramps and sidewalk on the waffle slab; concrete repair under the waffle slab; complex replacement of four overhead mast arm signals; painting steel girders; and resurfacing the bridge.
09/21-Ongoing	**City and County of Denver, Havana over Sand Creek Preventative Maintenance, Denver, CO.** Bridge engineer for the sidewalk extension and preventative maintenance a 4-span, post-tensioned concrete bridge over Sand Creek in northeast Denver. As part of the maintenance efforts, infrared thermographic inspection was performed to locate delamination areas in the concrete deck for repair. Additional repairs to extend the bridge design life included expansion joint, bridge rail, pedestrian rail, end rail transitions, and asphalt replacement; epoxy injection and sealing of cracks; sidewalk resurfacing; and superstructure and substructure structural concrete coating.
03/20–01/21	**The City of Colorado Springs, Colorado Avenue Bridge Rehabilitation, Colorado Springs, CO.** Bridge engineer responsible for load rating and quality checking the design and rehabilitation plans for two 95'-0" wide, 6-span precast concrete I-girder bridges over Sierra Madre Street and UPRR, and Monument Creek. The bridge decks were evaluated using ground penetrating radar survey to determine deck deterioration and depth of cover to reinforcing, as well as infrared thermographic survey to locate deck and overlay delamination. These bridges further underwent a life cycle cost analysis comparing two deck repair and overlay material alternatives, followed by recommendations for repair of displaced bearing devices; replacement of aging expansion joints; and repair of localized deck deterioration.

05/18 – 06/19	**CDOT, I-76 over Clear Creek Fatigue Study (CDOT NPS Contract), Adams County, CO.** Field inspection engineer for a fatigue study for EB and WB I-76 over Clear Creek. These bridges are highly skewed, multi-span, steel plate girder bridges that collectively have over 60 known distortion induced fatigue cracks due to a gap between the cross-frame stiffener and the bottom flange. The project included detailed inspections; instrumentation with strain gages and displacement transducers; full scale load testing; data collection and analysis; three-dimensional finite element analysis (FEA); and developing conceptual fatigue retrofit details. Field testing was used to calibrate the FEA to have an accurate tool to evaluate fatigue retrofit strategies. Adjustments to the model such as member properties and boundary conditions, allow the model to be refined to replicate the load test responses.
01/19 -12/19	**ODOT, Bridge Load Ratings, Various Locations, OH**. Bridge load rating engineer and quality checker for 30 bridges in Ohio using AASHTOWare BrR software. The structures typically included rolled steel beams and welded steel plate girders rated in accordance with Ohio DOT policies and AASHTO specifications. The rating team evaluated multiple complex structures to determine innovative methods to rate in BrR rather than using more costly methods using finite element analysis software.
06/16-06/18	**CDOT, Bridge Load Ratings (CDOT NPS Contract), Various Locations, CO.** Bridge load rating engineer and quality checker for 64 structures using AASHTOWare BrR software in accordance with the CDOT Bridge Load Rating Manual and AASHTO specifications. Structure types include concrete slab and girder, continuous concrete slab and girder, continuous steel girder bridges, and reinforced concrete t-beam structures. The project included working directly with the CDOT to deliver rating packages under tight schedule and budget constraints.
05/12 -09/15	**UDOT, UDOT Bridge Load Rating Program, Various Locations, UT.** Rating engineer of over 150 structures using AASHTOWare BrR Software in accordance with the 2014 UDOT Bridge Management Manual. The structures included reinforced concrete box culverts, concrete frames, prestressed concrete bridges, and analysis of bridges without as-built plans.

Firm	AECOM Technical Services, Inc.		
Name	Bobby Prince, PE	Years of Relevant Experience with this Employer	24
Title	Bridge Rehabilitation	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/1996/Civil Engineering MS/1998/Civil Engineering
Active Registration Number/State/Expiration Date			36980/VA/6.30.2023
Year Registered	2003	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Bridge Rehabilitation**. Bobby serves as Senior Bridge Engineer and Task Manager for bridge design, repair, and rehabilitation projects. His experience includes bridge repairs from impact damage, in-depth fatigue investigation and monitoring, complex staged construction sequence, and development of rehabilitation plans for steel girders, steel trusses, concrete girders, and slab span structures.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
04/20-Ongoing	**VDOT, Rehabilitation of Interstate 77 Bridges over Clear Fork Creek, Bland County, VA.** Mr. Prince served as Senior Bridge Engineer for rehabilitation of four steel bridges on Interstate 77 in Bland County, Virginia. AECOM developed a program for assessment of the existing structure condition, including sampling of the superstructure concrete to test for chloride content, depth of the chloride front, compressive strength and petrographic examination. Based on the results of our investigation, we developed plans for deep hydro-demolition and concrete deck overlay, elimination of deck expansion joints, structural steel repairs, and substructure rehabilitation.
01/16-11/20	**VDOT, Rehabilitation of 34 Structures in Salem District, VDOT Salem District, VA.** Mr. Prince served as Senior Bridge Engineer with responsibility for quality control of review of design calculations and bridge plans on this task to replace superstructures for 34 bridges throughout the VDOT Salem District. New structure types included concrete and steel superstructures. Staged construction details were developed to maintain traffic during construction. Where staged construction was not feasible, plan details were developed to permit rapid replacement within a 12-hour road closure. Bridge rehabilitation plans were prepared and bundled in multiple advertisement packages.
01/22-Ongoing	**VDOT, Route 156 over the James River, Prince George County, VA.** Mr. Prince serves as Task Manager for coordinating the work of the multi-discipline design team for this project to replace the existing fender system at the Benjamin Harrison Memorial Bridge (BHMB) carrying Route 156 over the James River. This structure has a total length of 4,500 feet with a 360-ft long vertical lift span which provides a vertical clearance of 145 ft. AECOM was tasked with developing fendering design criteria, coordinate with US Coast Guard for reviews, and prepare final design calculations and construction plans.
05/20-09/21	**VDOT, Grove Avenue over I-195 and CSX Railroad, Richmond, VA.** Mr. Prince served as Task Manager and Senior Bridge Engineer on this task to developed emergency plans for temporary strengthening of deteriorated steel girders, as well as live load rating analysis.

08/15-11/20	**VDOT, Route 685 over Craig Creek (Phoenix Bridge), Botetourt County, VA.** Mr. Prince served as Senior Bridge Engineer with responsibility for field assessment, development of rehabilitation alternatives, and peer review of construction plans on this task to rehabilitate two 120-year old steel truss spans over Craig Creek to extend the service life, improve the condition ratings, and increase the live load capacity. This single-lane bridge with a length of 267 feet is the only means of access and emergency service for dozens of residences, so AECOM developed unique modular construction details to allow major rehabilitation of floor beams and complete replacement of all stringers and bracing members in very short windows of road closure.
11/20-Ongoing	**VDOT, Route 360 Corridor Evaluation of 22 Structures, Fredericksburg District.** Mr. Prince serves as Senior Bridge Engineer on this task to evaluate rehabilitation needs for 22 structures along the Route 360 corridor. Structures range in length up to 500 feet and include both concrete and steel superstructures. Our assessment of the existing structures including infrared thermography, 3D GPR, and digital image mapping, all performed at traffic speeds. The analysis results supported our data-driven process for rehabilitation recommendations and budget prioritization.
07/12-Ongoing	**VDOT, Route 17 over Norfolk Southern Railway and Route 805, Fauquier County, VA.** Mr. Prince serves as a Senior Bridge Engineer with responsibilities for quality control of calculations and construction drawings on this project to replace the superstructure and widen this three-span bridge carrying Route 17 SBL over the NSRW and Route 805. Existing substructure units were rehabilitated and widened using pile and drilled shaft foundations. Widening of approach embankments, with a height of 35 feet, required AECOM to perform a detailed geotechnical slope stability analysis.
03/18-07/21	**VDOT, Route 15 Business (Remington Road) over the Rappahannock River, Culpeper County, VA.** Mr. Prince served as Task Manager and Senior Bridge Engineer on this project for rehabilitation of two Warren trusses and two concrete tee beam approach spans, to increase the load capacity and improve the condition. Truss span rehabilitation included replacement of several truss diagonals, end floor beams, and exterior stringers, interior floor beam repairs, and a new lightweight concrete deck. Approach span rehabilitation included curb and railing repairs, and a latex modified concrete overlay.
08/17-Ongoing	**VDOT, Route 601 (Old Ivy Road) over Route 29/250 Bypass, Albemarle County, VA.** Mr. Prince serves as Task Manager and Senior Bridge Engineer for this task for replacement of the bridge superstructure over the bypass. AECOM provided bridge alternative studies, including Accelerated Bridge Construction (ABC) alternatives, utility impact assessment, bridge and roadway construction plans, and maintenance of traffic plans. The new superstructure will be constructed in stages and will provide for increased vertical clearance over the bypass.
01/14-06/15	**VDOT, Route 723 over Interstate 66, Fauquier County, VA.** Mr. Prince served as Task Manager and Senior Bridge Engineer for this project to repair steel girder distortion and fracture from impact by over height vehicle. AECOM developed innovative jacking beam and support details to replace the bottom flange and most of the web of the exterior beam above the WB lanes of Interstate 66. Services included bridge repair plans, jacking and support plans, and maintenance of traffic using both lane closures and full detours.
07/18-09/20	**VDOT, Vibration Testing and Evaluation of External P-T Tendons in Segmental Concrete Box Girders of Cable-Stayed Varina-Enon Bridge (I-295 over James River).** AECOM applied the taut cable vibration measurement (TCVM) method for condition evaluation of external post-tensioning (P-T) tendons inside segmental concrete box girders of the 28-span dual structures built in 1990 with concerns on steel strand corrosion inside the grouted PVC duct.

	Firm	Forte & Tablada, Inc.		
	Name	Levi Yantis, PE	Years of Relevant Experience with this Employer	7
	Title	Bridge Rehabilitation/LRFR Load Ratings	Years of Relevant Experience with Other Employer(s)	2

Degree(s)/Years/Specialization			BS/2013/Civil Engineering
Active Registration Number/State/Expiration Date			PE.42390/LA/9.30.22
Year Registered	2018	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Bridge Rehabilitation/LRFR Load Ratings**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
02/22-Ongoing	**Ascension Parish Load Ratings – Ascension Parish, LA.** Team leader for the inspection of Ascension Parish owned bridges. Also serving as the lead load rating engineer for the bridges after inspection.
01/22-Ongoing	**Mall of Louisiana Boulevard Modified Bent Redesign – East Baton Rouge Parish, LA.** Redesigning a bent cap that had a pile misdriven during PDA. Pile load checks and a modified bent load rating were performed also.
03/18-Ongoing	**LA DOTD Retainer Contract for Off-System Bridge Load Rating – Statewide, LA – TO1.** Led and assisted in 12 complex movable bridge inspections and load ratings throughout the state. The bridge types included a single leaf bascule span, a vertical lift truss span, several steel vertical lift spans, multiple pontoon bridges, a steel plate girder swing bridge, a small steel truss/ cable swing span, and a non-movable steel truss. Task Order 2 – Led and supervised the load ratings of 200 off-system slab span bridges throughout the state of Louisiana. To avoid posting bridges lower than necessary, bridge inspections were done for several bridges that had severe deterioration noted in their inspection reports to collect additional deterioration measurements to accurately determine the bridge member's load carrying capacity. Task Order 5 – Load testing and refined load rating analysis of slab span bridges and culverts that previously received low or closed load postings.
03/21-10/21	**TDOT Complex and Standard Bridge Load Ratings – Statewide, TN.** Oversaw a team of load raters performing 35 AASHTOWare BrR load ratings in 4 months and was responsible for the quality control of the model inputs and outputs, troubleshooting bridge models, and assisting in load ratings. The bridge types load rated using AASHTOWare BrR software were prestressed I-beams and box girders, reinforced concrete multi-cell box bridges, reinforced concrete T-beams, continuous steel plate girders, and steel girder-floorbeam-stringer systems.
01/20-10/21	**LA DOTD Retainer for Complex In-Depth Bridge Inspections – Statewide, LA.** Served as Team Leader for the structural, mechanical and electrical in-depth inspections for multiple movable bridges. Bridge types included vertical lift span bridges and steel swing bridges (through girders and through trusses). Also served as the task manager for preparing the in-depth inspection reports. There was also a task order under this contract to perform emergency repairs on an US 71 Bridge in Shreveport, LA. Led the superstructure design for the emergency repairs.
01/20-10/21	**Florida Department of Environmental Protection (FDEP), Palatka Trail Pedestrian Bridge.** Served as lead structures designer for a two-span, 210' structure over US-601. The two-span structure includes the design of FIB concrete girders with an intermediate hammerhead pier, pile supported stub abutments and wrap-around MSE retaining walls.

01/20-12/20	**TDOT Complex Bridge Load Ratings – Statewide, TN.** This project was to load rate a total of 41 complex bridges within a short time period to help the State meet a critical FHWA Deadline. Levi was involved in the quality control process of multiple bridge load ratings.
06/16-04/20	**St. Tammany Parish Off-System Bridge Load Ratings, St. Tammany Parish, LA.** Led and assisted in bridge inspections and served as the load rating engineer for bridges throughout the parish of St. Tammany. The bridge types include slab spans, prestressed girder spans, and bridges constructed from retired railroad flatcars.
05/16-10/19	**Retainer Contract for Complex Bridge Rating, Statewide, LA.** LA DOTD – Bridge inspector and load rater for a through truss bridge over a branch of the Pearl River. The bridge consisted of 3 pony truss spans and reinforced concrete T-beams and was load rated utilizing AASHTOWare BrR, Leap Bridge Concrete and Mathcad software.
11/18-12/18	**Port of New Orleans, St. Claude Avenue Bridge Permit Load Rating, New Orleans, LA.** Performed a permit load rating for an overload vehicle to safely pass the single bascule span on St. Claude Avenue.
03/14-03/17	**LA DOTD Load Rating of On-System Bridges – Statewide, LA.** LA DOTD – Assisted in load rating of approximately 200 existing bridges across the state of Louisiana. Bridges range from slab span bridges on local roads to elevated curved steel interstate bridges in metropolitan areas.
12/17-Ongoing	**Cook Road Expansion.** Slab span superstructure and pile bent substructure design. Also assisted in the bridge plan development.
12/13-05/14	**Million Dollar Road Bridge Rating – St. Tammany Parish, LA.** Assisted in the field inspection of the bridge and carried out the structure's substructure load rating.

Firm	AECOM Technical Services, Inc.		
Name	Jason Zimpfer, PE	Years of Relevant Experience with this Employer	13
Title	LRFR Load Ratings/NBIS Inspections/Reporting	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			MS/2007/Structural Engineering BS/2006/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0045922/LA/3.31.24 Additional licenses in UT, PA, DE, TX, PR, NJ, CO, FL, MT
Year Registered	2013	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**LRFR Load Ratings/NBIS Inspections/Reporting**. Jason will be part of AECOM's Bridge Inspection Assistant Team Leaders, Bridge Load Rating and Analysis and Rehabilitation Design Team for this contract. He has 13 years of extensive and varied analysis, design, research, and bridge inspection experience. He has performed load rating analyses of more than 1,200 bridges and culverts in more than 15 states and coordinates a team of bridge load rating engineers. He is a certified bridge safety inspector and has performed inspections and load ratings of numerous bridges, including long-span, complex structures. Jason's other analysis experience includes coordinating load ratings of deteriorated and deficient structures and gusset plate analysis of truss structures. He has been involved with long-span truss inspection, analysis, and rehabilitation, and has performed structural research at a graduate level. He has experience with finite element modeling, various commercial bridge analysis software packages, as well as the development of proprietary tools and methods to perform bridge analysis calculations. He was given the George D. Nasser Award in 2012 for his co-authored paper in the PCI Journal on the effects of environmental conditions on the quality of field welding of precast concrete connections. **Jason meets MPR 4.**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
08/14-09/17	**Complex Bridge Inspection IDIQ Contract No. 44-2687 State Project No. H.009730.5, LADOTD, US-190 Krotz Springs Atchafalaya Bridge Bearing Repair, LA**. Structural engineer responsible for preliminary and final design of superstructure jacking and repair of the nested rocker bearings supporting the free end of a three-span, 1500 ft long cantilever through truss.
01/18-Ongoing	**Montana Department of Transportation (MDT), Load Rating Bridges Term Contracts 2018-2021 & 2021-2024.** Task leader responsible for quality, schedule, budget, technical aspects, and communication for load rating services for this statewide contract. The goal of this project is to provide load rating services on an as-needed basis for all of the state's legal loads. The work includes the analysis and rating of nearly 700 bridges to date throughout the state. The bridges include steel truss-floorbeam-stringer systems with gusset plate analysis, glue laminated timber, solid-sawn timber, reinforced concrete, prestressed concrete, multi-girder steel, corrugated metal pipe, and steel girder-floorbeam-stringer systems. AECOM used AASHTOWare Bridge Rating (BrR) software to analyze all structures that the program is capable of modeling, and Midas Civil for 3D FEM analysis, when required.

07/17-01/20	**Mississippi Office of State Aid Road Construction, Bridge Load Rating, MS.** Lead structural engineer responsible for coordination, calculation checking, and quality control of load rating efforts for this assignment with approximately 100 bridges, using the AASHTOWare Bridge Rating (BrR) software, including steel, reinforced concrete, prestressed concrete, and timber superstructures, as well as timber pile substructures and timber decks. Field-noted deterioration is included in calculations and load rating models.
06/19-08/19	**NASA/Kennedy Space Center: Indian River Bridge Derating Assessment Study, Kennedy Space Center, FL.** Task leader for the load rating analysis of twin double-leaf bascule span bridges carrying the NASA Causeway at Kennedy Space Center over the Indian River. Main bascule spans and steel girder approach spans were analyzed using the AASHTOWare Bridge Rating (BrR) software for NASA special transport vehicles and Florida legal vehicles. The analysis considered counterweight loads behind the trunnion, as well as modeling the effect of the live load anchor and center span lock.
05/12-12/18	**Pennsylvania Department of Transportation - District 5-0, Load Rating Analysis, Carbon, Monroe, and Schuylkill Counties, PA.** Lead structural engineer responsible for coordinating all load ratings performed on the contract (approximately 150 to date). Load ratings are performed on deteriorated structures based on the NBIS inspections provided by AECOM. Responsible for regular client communication, reporting results to PennDOT, and posting and repair recommendations based on analysis results.
07/12-07/18	**PennDOT District 5-0, Safety Inspections of State Owned Bridges, Monroe, Carbon and Schuylkill Counties, PA.** Inspection Team Leader and Load Rating Engineer for this three-cycle contract. Inspected all aspects of the bridge including safety features, roadway conditions, deck, superstructure, substructure and scourability. The inspections sometimes required the use of special equipment and traffic control. Performed post-flood emergency response inspections required after significant flooding events. In addition to inspection, also responsible for organizing and compiling all field notes, photographs and maintenance items for the preparation of the technical forms and reports and recommend load rating analysis where necessary. Handled all notifications and correspondence to the local owner regarding priority maintenance, sign installations, tracking the progress of repairs to the structure and updating the pertinent fields in BMS2.
05/14-02/18	**Montana Department of Transportation (MDT), Statewide Load Rating Term Contract, MT.** Lead structural engineer responsible for coordination, calculation checking, and quality control of load rating efforts for this four-year assignment with approximately 150 bridges, using the AASHTOWare Bridge Rating (BrR) software, including steel, reinforced concrete, prestressed concrete, and timber superstructures. Task includes rating of steel trusses with gusset plate analysis, curved girder, and arch analyses.
11/15-05/17	**Minnesota Department of Transportation (MnDOT), Bridge 62090 (High Bridge) Re-Deck Project, MN.** Structural engineer responsible for coordinating load rating efforts for 8 approach spans of this curved and splayed steel plate girder bridge using AASHTOWare Bridge Rating (BrR) software. Performed QC review of calculations and program inputs, coordinated repair recommendations associated with the redecking and strengthening of this steel tied-arch structure with curved plate girder approach spans.
01/15-08/15	**Utah Department of Transportation, Load Rating Analysis, UT.** Structural engineer responsible for checking load rating calculations for more than 20 prestressed and reinforced concrete bridges and culverts using the AASHTOWare Bridge Rating (BrR) software. Assisted in the creation of Utah state load rating policy for bridges without available plans and responsible for implementing this policy in the several dozen bridge and culvert analyses.

Firm	Marrero, Couvillon & Associates, LLC		
Name	Gregory DeCoursey, AIA	Years of Relevant Experience with this Employer	26
Title	Bridge Lighting	Years of Relevant Experience with Other Employer(s)	20

Degree(s)/Years/Specialization			B. Arch/1977/Architecture M.Arch/1982/Architecture
Active Registration Number/State/Expiration Date			PE.2620/LA/12.31.22
Year Registered	1980	Discipline	Architecture
Contract Role(s)/Brief Description of Responsibilities			**Bridge Lighting**. Gregory has performed services as both Architect and Project Manager for Engineering Projects for the Louisiana Department of Transportation and Development and for other Public Works and Private Sector Commercial projects.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
01/14-Ongoing	**St. Tammany Parishes, U.S. 11 Bridge Over Lake Pontchatrain Rehabilitation - Orleans.** Architect for the design of the rehabilitation of two Operator's Houses at an existing bridge over Lake Pontchartrain. Work is being done as part of a larger bridge rehabilitation project. Design is sensitive to the historic nature of the bridge and Operator's Houses.
06/12-04/18	**Lafourche Parish, W. Larose Vertical Lift Rehabilitation -Route: LA-1, Larose, LA.** Architect responsible for the architectural design for rehabilitation of the Operator's House at an existing bridge over the Intracoastal Waterway. Work was done as part of a larger bridge rehabilitation project.
10/13-05/16	**Louisiana DOTD, 4th Street Harvey Bridge Rehabilitation, Jefferson Parish, LA.** Architectural Designer for rehabilitation of the Operator's House at an existing bridge over the Harvey Canal. Work was done as part of a larger bridge rehabilitation project.
04/09-04/12	**Louis Armstrong New Orleans International Airport, Airfield Lighting Vault, Kenner, LA.** Architect for the design of a new building to house airfield lighting control equipment. Construction was designed to withstand the effects of a Category 4 hurricane.

	**Firm**	**Marrero, Couvillon & Associates, LLC**		
	Name	Brian Miller, PE	Years of Relevant Experience with this Employer	7
	Title	Architectural Feasibility	Years of Relevant Experience with Other Employer(s)	29

Degree(s)/Years/Specialization			BS/1986/Mechanical Engineering
Active Registration Number/State/Expiration Date			PE.26080/LA/9.30.23
Year Registered	1983	Discipline	Mechanical Engineering
Contract Role(s)/Brief Description of Responsibilities			**Architectural Feasibility**. Brian has over 35 years of engineering experience in mechanical engineering, project engineering and project management. Brian has been responsible for various projects ranging from HVAC systems design to wastewater pump stations. Brian is working with clients in both the public and private sector, such as the Recovery School District in New Orleans, the Louisiana State Department of Transportation, the Ascension Parish School Board, as well as various Architects and Engineering firms.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
05/15-Ongoing	**St. Tammany Parishes, U.S. 11 Bridge Over Lake Pontchatrain Rehabilitation - Orleans.** Mechanical engineer for the design of the rehabilitation of two Operator's Houses at an existing bridge over Lake Pontchartrain. Work is being done as part of a larger bridge rehabilitation project. Design is sensitive to the historic nature of the bridge and Operator's Houses.
06/12-04/18	**Lafourche Parish, W. Larose Vertical Lift Rehabilitation -Route: LA-1, Larose, LA.** Engineer responsible for the mechanical design for rehabilitation of the Operator's House at an existing bridge over the Intracoastal Waterway. Work was done as part of a larger bridge rehabilitation project.
10/13-05/16	**Louisiana DOTD, 4th Street Harvey Bridge Rehabilitation, Jefferson Parish, LA.** Mechanical engineering design for rehabilitation of the Operator's House at an existing bridge over the Harvey Canal. Work was done as part of a larger bridge rehabilitation project.
04/09-04/12	**Louis Armstrong New Orleans International Airport, Airfield Lighting Vault, Kenner, LA.** Mechanical engineer for the design of a new building to house airfield lighting control equipment. Construction was designed to withstand the effects of a Category 4 hurricane.
5/15-10/16	**LA-1 Reroute from Golden Meadow to Leeville, Golden Meadow, LA.** Project Manager for lighting design for 9 mile section of widened DOTD highway (LA 1 from Golden Meadow to Leesville). Electrical and controls infrastructure for ITS equipment and design of new toll booths.

Firm	AECOM Technical Services, Inc.		
Name	Bradley Touchstone, FAIA	Years of Relevant Experience with this Employer	1
Title	Architectural Feasibility/Section 106/HABS/HAER	Years of Relevant Experience with Other Employer(s)	6

Degree(s)/Years/Specialization			BA/1993/Architecture
Active Registration Number/State/Expiration Date			Registered Architect #6057/Louisiana /12.31.2022
Year Registered	2004	Discipline	Architecture
Contract Role(s)/Brief Description of Responsibilities			**Architectural Feasibility/Section 106/HABS/HAER**. Bradley will use his years of design and facilitation work to help facilitate agreement on bridge and urban design issues. He has over 25 years of experience as a Bridge Architect and in using design features to mitigate impacts associated with visual change, Section 4(f) and S106.

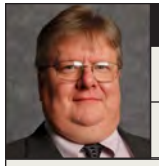
Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
03/16-08/19	**Gordie Howe International Crossing, Detroit, MI.** Bridge Architect and Aesthetics Lead responsible for the development of the aesthetic design requirements for the main bridge and lead author for the aesthetic design guidelines for the entire $2.7 billion project. Mr. Touchstone served as lead aesthetic consultant to the owner (Windsor-Detroit Bridge Authority) during the two year procurement P3 procurement process.
02/08-12/11	**LADOTD State Project No. 052-02-0024 John James Audubon Bridge, Point Coupee and West Feliciana Parishes, LA.** Bridge Architect responsible for the aesthetics associated with the new Audubon Bridge over the Mississippi River in St. Francisville, LA
11/15-5/17	**LADOTD State Project No H.003495, I-49N Segment K – Phase I (I-220 to MLK Dr.). Shreveport, LA.** Bridge Architect responsible for aesthetics, public involvement and coordination of the art in public places installation on the new bridge.
06/11-12/12	**Hastings Bridge, Hastings, MN.** Bridge Architect and Visual Quality Manager for the replacement of the existing bridge over the Mississippi River. Mr. Touchstone led the architectural design and public involvement process for the river bridge.
01/14-04/16	**Red Wing Bridge, Red Wing, MN.** Bridge Architect for stakeholder involvement and preliminary design for the new Mississippi River crossing in historic downtown Red Wing, MN. This work included to development of the Aesthetic Design Guidelines that directed the development of the final bridge design.
03/07-02/09	**kciCON, Kansas City, MO.** Bridge Architect for the design/build team constructing the kciCON Bridge. Bradley C. Touchstone, AIA led a community involvement and aesthetic design process for the design build team of Paseo Corridor Constructors resulting in a design which was awarded 95% of the potential points for aesthetics, secured the contract and opened the door to an entirely new level of public input for major bridge projects.
05/07-05/10	**First Street Bridge Restoration and Expansion, Los Angeles, CA.** Bridge Architect for the restoration and expansion of this 1920's spandrel arch bridge in Los Angeles, CA. The bridge3 is listed on the National Historic Register and required HABS/ HAER Recordation for the State Historic Preservation Office and the National Parks Service. Mr. Touchstone led the historic mitigation and design process for the significant urban bridge.

Firm	AECOM Technical Services, Inc.		
Name	Michael Delemont, PE	Years of Relevant Experience with this Employer	26
Title	Movable Bridges Task Leader/Structural	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			MS/2002/Civil Engineering BS/2000/Civil Engineering
Active Registration Number/State/Expiration Date			PE.43170/LA/9.30.23 Additional licenses: PE IL, SE IL, PE WI
Year Registered	2019	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Movable Bridges Task Leader/Structural**. Michael is one of AECOM's Structural Department Managers. He performs and leads structural work for movable bridge rehabilitation and replacement projects, including the preparation of plans, specifications, schedules, and cost estimates for complex movable bridge projects. He also provides support and inspection during construction and fabrication. He is also an NBIS Certified Bridge Inspector. His structural design experience includes highway and bascule bridges, railroad bridges and catenary structures, retaining walls, culverts, and various other structures. As a lead movable bridge engineer, he provides insight and coordination between the various disciplines required for complex bridge projects during inspection, design and construction. **Michael meets MPR 7.**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
06/14-11/18	**City of Milwaukee, South 1st Street Bascule Bridge over the Kinnickinnic River, Milwaukee, WI.** Lead movable bridge engineer for rehabilitation of a double-leaf trunnion-style bascule bridge over the Kinnickinnic River. Michael led the initial structure inspection team, the development of the rehabilitation plans, and the construction support efforts. AECOM completed a rehabilitation study, final design and construction support.
03/11-05/21	**Wisconsin Department of Transportation (WisDOT), Racine Street Bascule Bridge over the Fox River, Menasha, WI.** Structural Inspector and Project Engineer for this project. Michael was on the initial inspection team, developed the rehabilitation report, and was the lead movable bridge engineer for the design of the replacement bridge. He coordinated all bridge design disciplines including structural, mechanical, electrical, architectural, and approach spans. He was the engineer of record for the new double leaf rolling-lift bascule bridge superstructure and is currently leading the construction support efforts..
05/09-10/13	**WisDOT, 17th Street Bascule Bridge over the East Twin River, Two Rivers, WI.** Project Engineer for the design of a new single-leaf bascule bridge over the East Twin River. He participated in the inspection of the old bridge, feasibility study development, and preparation of preliminary plans for the replacement. He performed the final design including preparation of plans for the steel superstructure and the concrete substructure. He performed shop inspection of the steel fabrication and provided structural expertise and support during construction.

06/05-05/07	**City of Appleton, Bascule Bridges Inspections and Rehabilitations, Appleton, WI.** Olde Oneida Street bridge is a single leaf trunnion-style bascule bridge and the Lawe Street bridge is a double-leaf trunnion-style bascule bridge. Michael assisted on the initial inspection and the generation of short-term repair plans. He also prepared plans, specifications, schedules, and cost estimates for the 25-year rehabilitations. During construction, he assisted with field inspection and construction support. More recently, Michael performed the annual movable bridge inspections for the same bridges.
01/19-01/20	**WisDOT, Maple-Oregon Bascule Bridge, Sturgeon Bay, WI.** Lead Bridge Engineer for the rehabilitation of a double-leaf bascule bridge with prestressed girder and slab approach spans. The project involved concrete deck repairs, polymer overlay, bascule span balancing, and load rating.
09/06-10/08	**WisDOT, Wisconsin Street Bridge, Oshkosh, WI.** Structural engineer for the design of a new bascule bridge over the Fox River in Oshkosh, WI. Assisted in the design and plan preparation for the new bascule bridge. Reviewed shop drawings and provided shop inspection of fabrication. Performed shop inspection and witnessed material tests for steel tread forgings for bascule girders, floor system, and other miscellaneous steel.
07/16-05/21	**City of Kaukauna, Veteran's Memorial Lift Bridge over Fox River Navigation Canal, Kaukauna, WI.** Lead Bridge Engineer for the rehabilitation of a vertical lift movable bridge. Coordinated design of structural, electrical, and mechanical work. Led the design of steel grid deck repairs, concrete repairs, movable bearing rehabilitation, sidewalk overlay, and painting. Provided construction inspection services.
03/17-10/18	**WisDOT, St. Croix River Bascule Bridge - Prescott, WI.** Lead Bridge Engineer for the rehabilitation of bascule bridge in Prescott, WI. Led the design of counterweight repairs, polymer overlay, and joint replacement. The movable leaves of the bridge were also rebalanced as part of the project work.
12/15-02/19	**City of Sheboygan - 8th Street Movable Bridge - Sheboygan, WI**. Lead Bridge Engineer for the rehabilitation of a single leaf hydraulically operated bascule bridge. Coordinated design of structural, electrical, and mechanical work. Led the design of miscellaneous repair work, painting, and concrete opening to accommodate cylinder removal. Also provided assistance during construction.
05/15-11/18	**WisDOT, Little Chute Canal Bridge - Village of Little Chute, WI.** Lead Bridge Engineer for the construction support of a dutch-style bascule bridge. The unique design of this single leaf hydraulically operated bridge with overhead counterweights led to many challenges during construction and Michael led the efforts to support the DOT with his movable bridge expertise.
09/15-05/17	**City of Milwaukee, Water Street Bascule Bridge Rehabilitation – Milwaukee, WI**. Lead Bridge Engineer for span lock replacement on a double-leaf trunnion-style bascule bridge over the Milwaukee River. Led the design of the replacement of the existing span locks with more robust span locks. Provided support to the City of Milwaukee during construction.
10/13-02/17	**WisDOT, Mason Street Bridge Rehabilitation in Green Bay, WI.** Lead Structural Engineer for rehabilitation of the 25-unit bridge including a double-leaf bascule span. Scope of work includes concrete surface repair on the abutments, piers, and girders, joint strip seal replacement, and fence replacement. Provided technical support during construction.
03/14-11/16	**WisDOT, Bayview Bridge in Sturgeon Bay, WI**. Project Manager for inspection of concrete girders, piers and steel grid deck of the movable bridge in Sturgeon Bay, and preparation of a bridge condition report which documented the structural condition and recommendations for repair.
08/09-03/12	**ArcelorMittal, Bascule Bridge over the Indiana Harbor Canal, Gary, IN**. Project Engineer responsible for the design of a new single leaf bascule railroad bridge to carry hot metal cars over the IHC on steel mill property. Led the preparation of plans and specifications for steel sheet pile approach peninsulas, steel pile-supported concrete substructures, and the movable steel superstructure.

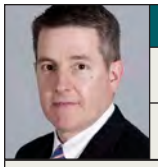


Firm	AECOM Technical Services, Inc.		
Name	Bradley Kopping, PE	Years of Relevant Experience with this Employer	6
Title	Mechanical	Years of Relevant Experience with Other Employer(s)	28

Degree(s)/Years/Specialization			BS/1989/Mechanical Engineer
Active Registration Number/State/Expiration Date			PE.39581/LA/9.30.23 Additional licenses in WA, TX, OH, MS, CT, MD, CA, NJ, NY, MN, DE, WI, IN, VA, OR, FL
Year Registered	2015	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Mechanical**. Bradley is responsible for the design and inspection of mechanical systems for movable bridges, heavy movable structures, and other transportation facilities; including production of plans, technical specifications, and cost estimates for new and rehabilitation projects. In addition, he has performed peer review of other engineers work and produced cost estimates for inspection and design RFPs. He has been involved in the industry for over 20 years. **Bradley meets MPR 5.**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
06/2018-Ongoing	**Wisconsin Department of Transportation (WisDOT), Racine Street Bascule Bridge over the Fox River, Menasha, WI.** Senior Mechanical Engineer responsible for the design of the complete mechanical system required for a rolling lift bridge span replacement including the rear locks. The design of the machinery room came with tight constraints for machinery fit. Overall access was improved by the inclusion of access stairs designed into the bearing weldments allowing access over the pinion shafts. Rack and pinion were sized such that only a single rotation of the pinion achieved span motion for reduced contact tooth wear. Produced stamped drawings, the Technical Special Provisions (TSP), schedule, and cost estimate.
04/15-12/21	**CalTrans, 3rd Street Bascule Bridge over Islais Creek, San Francisco, CA.** Senior Mechanical Engineer responsible for design of mechanical portion of the bridge rehabilitation. This includes the replacement of the span lock machinery with new lock bar assemblies. Responsibilities include developing plans, specifications, and a cost estimate for all mechanical work. Further responsibilities include post-design construction support which involves answering RFI's, reviewing contractor submittals, inspecting contractor's field work and reporting findings to CalTrans representatives.
11/14-Ongoing	**FDOT District Four, Southern Blvd. (SR80) Bascule Bridge Replacement over Inter-Coastal Waterway, Palm Beach County, FL.** Senior Mechanical Engineer responsible for design of mechanical portion of the bridge replacement. This included the span drive machinery design and the writing of the FDOT Technical Special Provisions (TSP) 465 as well as the engineer's cost estimate and construction schedule.
08/15-Ongoing	**San Joaquin County, Millers Ferry Swing Bridge over Mokelumne River, Walnut Grove, CA.** Senior Mechanical Engineer responsible for design of mechanical portion of the bridge rehabilitation. This included the end lifting machinery. Responsibilities include developing plans, specifications, and a cost estimate for all mechanical work. Further responsibilities include post-design construction support which involves answering RFI's, reviewing contractor submittals, and reporting findings to City representatives.

10/20-Ongoing	**LADOTD, Lapalco Boulevard Bascule Bridge over the Harvey Canal, New Orleans LA.** Mechanical Engineer Reviewer for the State of Louisiana responsible for providing machinery review services of the new Lapalco bascule Draft Bridge Development Report including providing comments on the report and coordinating responses with the bridge designers.
04/21-Ongoing	**City of Appleton, Bascule Bridges Inspections and Rehabilitations, Appleton, WI.** Mechanical Inspection for the City of Appleton Lawe St and Olde Oneida Bascule Bridges. The inspection included an on-site inspection of the power distribution system including main motor(s) insulation test, inspection of existing lighting, conduits, conductors, submarine cables, receptacles, power disconnects, main enclosure gears including internal components, power monitoring, control console, control conduits and wiring, control field end devices, navigational lighting, traffic gates, and existing bridge documentation. A report was provided to the owner with findings of the inspection including suggested repairs to the power and control systems.
04/13-12/18	**WisDOT, 1st Street Bridge Rehabilitation, Milwaukee, WI.** Senior Mechanical Engineer responsible for design of mechanical portion of the bridge rehabilitation. This included the span drive machinery, span lock machinery and the span support machinery. Responsibilities include developing plans, specifications, and a cost estimate for all mechanical work. Further responsibilities include post-design construction support which involves answering RFI's, reviewing contractor submittals, inspecting contractor's field work and reporting findings to WisDOT representatives.
01/15-5/17	**MissDoT, MissDoT Inspection Manuals, Statewide, MS.** Subject Matter Expert responsible for writing mechanical portions of MissDoT bridge inspection manuals for 3 movable bridges. These manuals were written for MissDoT personnel to help them with preventative maintenance and to properly determine the condition of the bridges.
10/17-Ongoing	**Municipality of Chatham-Kent, Baseline Bridge, Wallaceburg, ON.** Senior Mechanical Engineer responsible for supervising machinery and electrical rehabilitation tender elements (e.g. plans, specifications and cost estimates) for Baseline Bridge in Wallaceburg, Ontario. The movable bridge rehabilitation included mechanical and electrical span control and span operation and support systems. Baseline Bridge is a swing bridge that uses hydraulic cylinders to provide rotational movement and to actuate the span support components. The electrical work consisted of replacement of the entire control systems including the control desk, PLC and other electrical components.
10/14-09/17	**MassDoT, Bridge Street Bridge Replacement, Chatham, MA.** Senior Mechanical Engineer responsible for design of mechanical portion of the bridge rehabilitation. This included the span drive, span support and span lock machinery design and the writing of the Technical Specifications as well as the engineer's cost estimate and construction schedule. Further responsibilities include postdesign construction support which involves answering RFI's, reviewing contractor submittals, inspecting contractor's field work and reporting findings to MassDoT representatives.
06/98-08/06	**NYCDOT, Third Avenue Swing over the Harlem River, New York, NY.** Mechanical Engineer responsible for performing calculations and design of bridge balance wheels, balance wheel track, gear rack, and hydraulic auxiliary motor and power unit for the $118.8 million on-line bridge replacement. The project included a temporary bridge and float-in of fully assembled, 350-foot through truss swing span. Total project length is 3,500 feet. The project included in-depth inspection, complete substructure, and superstructure replacement of ramps, 18 approach spans, swing span's mechanical and electrical systems, control house, seismic analysis and design, traffic studies, and complex staged construction. Also wrote specifications for bridge hydraulics.



Firm	Wiss, Janney, Elstner Associates, Inc.		
Name	John Williams, PE	Years of Relevant Experience with this Employer	3
Title	Mechanical	Years of Relevant Experience with Other Employer(s)	23

Degree(s)/Years/Specialization			BS/2009/Mechanical Engineering
Active Registration Number/State/Expiration Date			PE.0044300/LA/9.30.22
Year Registered	2020	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Mechanical**. John will serve as Lead Mechanical Engineer responsible for task orders involving movable bridges.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
07/19-Ongoing	**Danziger Lift Span Bridge, US 90, over the Industrial Canal, New Orleans, LA.** Senior Mechanical Engineer for the inspection of portions of the lift span contributing to reported operational issues, an in-depth inspection of the lift bridge machinery systems, and development of repairs to restore the bridge's long-term functionality and reliability. Assisted with the development of a unique monitoring and sensor installation plan, the installation of instrumentation and monitoring equipment, and the creation of a web-accessible reporting platform to evaluate the bridge's operations over an extended period. Lead the development of plans and specifications to address emergency failed pinion bearing repairs. Performed strain gage testing to measure span balance, implemented weight changes and air buffer repairs to improve seating of the span, and determined through testing that the span drive differentials on both towers were not functioning properly, requiring work with the manufacturer to properly adjust the associated clutches.
08/15-Ongoing	**3rd Street Bascule Bridge over Islais Creek, San Francisco, CA.** Project Manager and Lead Mechanical Engineer for the design of a replacement bridge that included new span operating machinery, new span support machinery for the new leaf to be supported by the existing substructure and development of complex construction staging to address constraints for the number and duration of outages for MUNI light rail services. The project started with a detailed scoping inspection including a rating assessment of the structure, mechanical, and electrical systems that identified critical deficiencies leading to the decision to replace the bascule span superstructure in its entirety.
07/20-01/20	**St. Claude Avenue Bridge Construction Engineering Services, New Orleans, LA.** Project Manager and Senior Mechanical Engineer for construction engineering services on an expedited basis to assist with the replacement of the second link pins which connect the counterweight truss to the balance link. Services included balance testing, design of the counterweight support system, development of a sequence of work for supporting the structure, unloading and removing the pins, completing the repairs and restoring the bridge to service within a marine navigation closure that was controlled by repairs to the adjacent lock. Mechanical engineering services were provided on an expedited basis due to the short time-period between the award of the project and the start of the marine navigation closure.

10/14-07/19	**St. Peters Canal Swing Bridge Replacement, Cape Breton, NS, Canada.** Project Manager and Engineer of Record overseeing the mechanical and hydraulic machinery design for this new hydraulically operated center bearing swing bridge. Responsibilities included design and backchecking of design calculations, plans preparation and detailing, and preparation of contract specifications and construction cost estimates during design. Responsibilities during construction included coordination of a team of mechanical and electrical engineers and inspectors to review and approve construction submittals and provide complete shop and field inspection of all mechanical/electrical aspects of the rehabilitation project.
08/08-08/18	**Columbus Road Lift Bridge, Cleveland, OH.** Senior Mechanical Engineer for the rehabilitation project with the objective to maintain the historic character of the structure while significantly reducing maintenance requirements and improving overall system efficiency. A scoping inspection of the mechanical machinery determined suitability for continued long-term service and compliance with current AASHTO code requirements. The new mechanical design provides for complete replacement of all span support machinery, span drive machinery, and span locks.
07/14-02/18	**Burlington Canal Lift Bridge, Hamilton, ON, Canada**. Movable Bridge Construction Specialist and Heavy Machinery Specialist for the contractor as part of a major electrical and minor mechanical rehabilitation of this critical vertical lift bridge. The electrical scope of work included complete replacement of the electrical power and control systems for the bridge including an aerial cable installation and skew control of the lift span. The mechanical scope of work included replacement of the high-speed end of the span drive machinery (brakes, speed reducer, shaft, and couplings). The scope of work required the contractor's engineer to sign and seal all submittals including shop drawings.
03/10-11/17	**Sir Ambrose Shea Lift Bridge Replacement, Placentia, NL, Canada.** Project Manager and Mechanical Engineer of Record responsible for the design of span drive machinery, span lock machinery and span support machinery for a new tower drive lift bridge. Duties included preparation and review of all relevant calculations (sized motor, gear tooth strength calculations, sized brakes, shaft calculations for moment and torsion, sized couplings, designed machinery base plates, sized span lock bars, sized span lock and lockbar actuator, performed fatigue analysis of trunnion shaft, and sized trunnion bearings), and preparation of design drawings, specifications, and cost estimates as part of design. During construction, responsibilities included review of contractor's shop drawings and procedures for conformance to contract requirements, disposition of non-conformance reports, and responding to requests for information or changes.
02/04-11/13	**Mystic Bridge Rehabilitation, Connecticut DOT, Groton, CT.** Project Manager and Senior Mechanical Engineer for the rehabilitation of the historic single leaf, mechanically operated Brown bascule bridge. The mechanical design included upgrades to the capacity of the span drive machinery and design of a custom vehicular safety barrier gate to rise out of the roadway to protect errant vehicles from entering the waterway with the bridge raised yet remain visually unobtrusive with the bridge seated and open to vehicular traffic. Responsibilities included design and backchecking of design calculations, plans preparation and detailing, and preparation of contract specifications and construction cost estimates.

Firm	Wiss, Janney, Elstner Associates, Inc.		
Name	Gareth Rees, PE	Years of Relevant Experience with this Employer	3
Title	Electrical	Years of Relevant Experience with Other Employer(s)	51

Degree(s)/Years/Specialization			BS/1968/Electrical Engineering
Active Registration Number/State/Expiration Date			PE.0040754/LA/9.30.22
Year Registered	2016	Discipline	Electrical Engineering
Contract Role(s)/Brief Description of Responsibilities			**Electrical**. Gareth serves as Lead Electrical Engineer responsible for task orders involving movable bridges. **Gareth meets MPR 6.**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
07/19-Ongoing	**Danziger Lift Bridge - New Orleans, LA**. Lead Electrical Engineer for the inspection of relevant portions of the main lift span contributing to reported operational issues, an in-depth inspection of the lift bridge machinery and electrical systems, and development of repairs to restore the long-term functionality and reliability of the bridge. Prepared a new lift span skew control system design after the existing Selsyn components were removed from the bridge, developed electrical controls for the clutches with the span drive differentials, and provided recommendations for rehabilitation of the bridge.
08/15-Ongoing	**3rd Street Bascule Bridge over Islais Creek, San Francisco, CA.** Senior Electrical Engineer for the design of a replacement bridge that included the design of new electrical power and control systems to be integrated with the MUNI light rail traction power and signal system.
03/20-12/20	**Skew Detection System Replacement on Vertical Lift Bridges, LA.** Principal Investigator to review alternatives for skew control, monitoring, and indication for tower drive vertical lift bridges based on effective management of skew and minimizing advanced electronic equipment. The study included a literature review, interviews with current owners and maintainers of vertical lift bridges, and interviews with industry control specialists experienced in skew control systems. As a result of the study, a preferred system of skew control that combines the use of direct skew measurement with an inclinometer for skew monitoring and trip indication, and indirect measurement of skew using encoders for controlling skew during operation was recommended. To minimize maintenance, mean-time-to-repair, and to limit dependency on PLC systems, it was recommended that control integration be achieved using SMART relays (that contain self-diagnostics) that may easily be replaced in the event of an issue.
03/18-02/20	**Charles Berry (Erie Ave) - Lorain 6 Bascule Bridge Rehabilitation, Lorain, OH.** Movable Bridge Project Coordinator for the rehabilitation of the operating and support systems for this historic double leaf deck truss bascule bridge including complete replacement of the drive machinery and electrical power and controls control systems. Services included review, coordination and integration of the mechanical, electrical, and structural systems, review of all shop drawings for fit-up and constructability; shop inspection of critical components; field oversight during construction for critical assemblies; verification of final alignment of machinery; shop and field acceptance testing of the electrical system installation, commissioning of the installed operating systems, strain gage operational testing and power recordings to confirm satisfactory performance of the newly installed systems, and development of the Operations and Maintenance Manual.

04/13-10/19	**Fort Madison Toll Bridge, Fort Madison, IA.** Engineer of Record and Project Manager for the rehabilitation of this double decker swing span bridge. The first phase was the design of a new aerial and submarine power cable installation, the new installation to be configured as redundant power sources. The design of the submarine cable installation included surveying of the existing submarine cable, routing of the new cable, and designing and specifying the cable. The work also included excavation requirements and developing an approved trenching system. The design and contract documents were developed based on staged construction to satisfy marine, railroad, and highway operations as well as Coast Guard and emergency services with respect to bridge operating outages. Construction services were also performed.
03/10-11/17	**Sir Ambrose Shea Lift Bridge, Placentia, NL, Canada.** Engineer of Record for the design of a replacement tower drive vertical lift bridge with two duty motors and brakes in each tower and two sets of span locks. The bridge operator's control house is located at roadway level and remote from the bridge with CCTV surveillance and fiber optic communications to the towers. The PCL-based control system was designed with Hot standby redundant PLC's, a human machine interface (HMI), and control console and a redundant fiber optic communications transmission backbone. The electric services are distributed to state-of-the-art intelligent MCC's in each of the bridge towers and have internal communications capabilities and interface directly with the bridge control system PLC for bridge operation, drive monitoring, and data acquisition.
06/14-06/16	**East Roundbunch Road over Cow Bayou, Orange County, TX.** Lead Electrical Engineer responsible for designing new drives, controls, and field devices for the span drive machinery and the end wedge machinery as part of a rehabilitation of this historic structure to provide long-term reliable service. Span drive machinery was comprised of components with a proven history of utilization on movable bridges and was powered by an electric motor. Design and integration of new traffic control features, bridge and maintenance lighting, and a CCTV system were also included.
01/14-12/14	**Haystack Bascule Bridge over Petaluma River, Petaluma, CA.** Engineer of Record and Lead Electrical Engineer for the relocation, rehabilitation, and reassembly of a single leaf rolling lift bascule railroad bridge. The designed bridge electrical systems consist of modern PLC logic control and flux vector variable frequency drives. The electric service and standby generator for bridge back-up power are located on one side of the navigable channel with the bridge operating system on the other. An under-channel installation was developed to connect the electric service equipment and associated communications to the bridge operating system. The system design included communications, fire life safety system design as well as the integration of the bridge operating system with the railroad train control.
10/10-02/12	**Port Severn Swing Bridge 60 Rehabilitation, Port Severn, ON, Canada.** Lead Electrical Engineer for a bridge inspection, condition survey, engineering analysis and preparation of plans, specifications, and cost estimate.

Firm	AECOM Technical Services, Inc.		
Name	Carlos Turcios, PE	Years of Relevant Experience with this Employer	11
Title	Electrical	Years of Relevant Experience with Other Employer(s)	12

Degree(s)/Years/Specialization			MBA/2004/International Business BS/1998/Electrical Engineering
Active Registration Number/State/Expiration Date			085259/PA/9.30.2021 Additional active licenses in NY, FL, KN, CA, MI
Year Registered	2017	Discipline	Electrical Engineering
Contract Role(s)/Brief Description of Responsibilities			**Electrical**. Carlos is a lead Electrical Engineer with 22 years of experience in all areas of electrical power distribution as well as electrical controls. He is familiar with all phases of project design including estimating, scheduling, inspections, specifying, contract drawings, equipment shop testing, onsite controls functional testing, check-out and start-up, and cost tracking. Mr. Turcios has designed and supported medium-voltage and low-voltage power distribution including control schemes for government, commercial, industrial, and bridge facilities; engineered various power systems and distribution networks; formulated and coordinated control schemes for electro/mechanical, HVAC, and SCADA systems; developed designs for interior/exterior lighting including navigational lighting, grounding, lightning protection, fire detection and alarm systems. He is also experienced in data acquisition systems, Programmable Logic Controllers (PLC's), UPS, remote control and telemetry circuitry. He has performed bridge assessment reports, technical studies reports addressing short-circuit analysis and protective device coordination utilizing computer modeling of electrical networks. As the engineer of record, he is responsible for directing the preparation of Electrical Power and Control System Plans, Lighting Plans, Lightning Protection System Plans, Fire Alarm System Plans, and Technical Specifications of movable bridges and other projects.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
03/21-05/21	**City of Appleton, Bascule Bridges Inspections and Rehabilitations, Appleton, WI.** Provided electrical inspection services for the City of Appleton Lawe St. and Olde Oneida Bascule Bridges. The inspection included an on-site in-depth inspection of the power distribution system including main motor(s) insulation test, inspection of existing lighting, conduits, conductors, submarine cables, receptacles, power disconnects, main enclosure gears including internal components, power monitoring, control console, control conduits and wiring, control field end devices, navigational lighting, traffic gates, and existing bridge documentation. A report was provided to the owner with findings of the inspection including suggested repairs to the power and control systems.
09/20-04/21	**Louisiana Department of Transportation and Development (LADOTD), Lapalco Boulevard Bascule Bridge over the Harvey Canal, LA.** As the Electrical Engineer Reviewer for the State of Louisiana, provided electrical and controls review services of the new Lapalco bascule Draft Bridge Development Report including providing comments on the report and coordinating responses with the bridge designers.

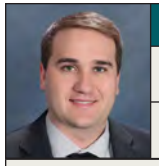
05/20-Ongoing	**Wisconsin Department of Transportation (WisDOT), Racine Street Bascule Bridge over the Fox River, Appleton, WI.** Providing post construction design services. Duties include reviewing electrical shop drawings to electrical power distribution, grounding, interior and exterior lighting, lightning protection system, bridge controls, and CCTV system.
11/18-12/18	**City of Milwaukee, South 1st Street Bascule Bridge over the Kinnickinnic River, Milwaukee, WI.** Provided control engineering witnessing services as part of the bridge start up. The task included review and approval of bridge testing procedures and operators training manual. In addition to approvals, a two-site visit was included to witness the contractor exercise the bridge and test each control device as per approved testing procedures in accordance with contract documents to ensure that all electrical and control components are operating within industry and manufacturer's tolerances.
04/18-05/19	**Florida DOT, Southern Boulevard (SR80) Bascule Bridge Replacement over Inter-coastal Waterway, West Palm Beach, FL.** Providing post construction design services. Duties include temporary bridge functional testing of the control system, contractor's shop testing of the main bridge control system, reviewing electrical shop drawings to electrical power distribution, grounding, interior and exterior lighting, lightning protection system, bridge controls, CCTV system, and cathodic protection for a SR-80 Southern Boulevard bridge replacement.
06/18-01/19	**Florida Department of Transportation (FDOT), Bascule Bridge Rehabilitation-Manasota Beach Rd., Sarasota, FL.** Engineer of record responsible for on-site electrical bridge inspection to collect data on the existing power distribution and controls; provided a 100% electrical design package for the replacement of the control house relay control console, Far Span Bridge motor variable speed drive, span lock motor controls, and associated electrical equipment conduit and conductors. 04/18 – Present Windsor-Detroit Bridge Authority, Gordie Howe International Crossing, Detroit, MI/Windsor, Ontario,
04/18-Ongoing	**Windsor-Detroit Bridge Authority, Gordie Howe International Crossing, Detroit, MI/Windsor, Ontario, Canada.** Lead electrical designer for a 1.5 miles international bridge across the Detroit river connection the US and Canada. The design support includes creating design-built electrical contract documents for the electrical distribution infrastructure to support roadway lighting, pedestrian lighting, maintenance lighting, security lighting, bridge esthetic lighting, security hardware, intelligent traffic system (ITS), CCTV system, navigational lighting including aircraft obstruction lighting, power grounding and lightning protection system. Power distribution included the design of four redundant 500KVA medium voltage transformers (13.2KV/600V), two 100KVA UPS and distribution infrastructure for fiber optic communications.
06/18-09/18	**City of Petaluma, D Street Bridge, Petaluma, CA.** Performed a 3 day on-site electrical bridge inspection that included the review of existing documentation of the 240/120V double ended electrical power distribution and bridge control infrastructure, insulation, voltage and current test on all bridge motors during multiple bridge operations, test of the entire control system via bridge operator, visual inspection of electrical and control bridge system components such as navigational lights, traffic signals, traffic gates, limit switches, miscellaneous raceway systems, enclosures, disconnects and provided a final report of findings.
10/18-02/19	F**DOT, Long Boat New Pass Bridge, Sarasota, FL.** Performed an on-site electrical bridge inspection with a 480/277 volt, three phase, four wire electrical distribution system, motor control center, variable speed drives, span-drive motors, electrical panelboards, generator, automatic transfer switch, step-down transformers, lighting, grounding, Programmable Logic Controller (PLC) based control system, relay panels, control console, limit switches and other related equipment. As the Engineer of record, created bidding documents to replace two span end lock systems, a submarine cable for power/controls and two vehicle barrier control systems.
04/18-07/18	**FDOT, SR-60 Courtney Campbell Causeway, Tampa, FL.** Provided engineering services for the design of a cathodic protection (CP) system for the existing causeway bridge. The CP system design includes installing titanium mesh anode encapsulated in a bridge structural concrete footing and rectifiers to inject current through the structural steel at each of the 32 bridge footings including power distribution for each rectifier. The CP system also included a data acquisition system to monitor the driving voltage at each rectifier from a central location.

Firm	AECOM Technical Services, Inc.		
Name	Don Yetter, PE	Years of Relevant Experience with this Employer	35
Title	Movable Bridges/Structural	Years of Relevant Experience with Other Employer(s)	6

Degree(s)/Years/Specialization			MS/1981/Civil Engineering BS/1977/Civil Engineering
Active Registration Number/State/Expiration Date			PE.44967/LA/03.31.23 Additional active licenses in IL, FL, GA, IN, MS, WI
Year Registered	1981	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Movable Bridges/Structural**. Don leads multidiscipline projects having complex structures as one of their major elements. He has performed movable bridge engineering for more than 30 years. His design skills are reinforced by his hands-on experience as a resident engineer overseeing construction of movable bridges and performing shop inspections during their fabrication.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
05/16-10/19	**SFPW, 3rd Street Bascule Bridge over Islais Creek, San Francisco, CA.** Led the structural design for replacing the bascule superstructure and rehabilitating the substructures for this double leaf bascule bridge carrying two light-rail tracks and four highway traffic lanes. Formulated a float-out / float-in construction sequence to minimize outages during change-out of the bascule leaves. Each leaf is supported by 3 bascule through-girders. The floor beam and stringer system of the bascule leaves support an open steel roadway grid, steel ties for the transit system's tracks and fiberglass grid sidewalks along both sides to accommodate heavy urban pedestrian traffic.
08/15-09/18	**San Joaquin County, Millers Ferry Swing Bridge over the Mokelumne River, Walnut Grove, CA.** Developed movable bridge alternatives for rehabilitating or replacing a deteriorated swing-span over a commercially navigable waterway. Formulated concepts performed preliminary engineering and prepared cost estimate for a major rehabilitation and 3 replacement alternatives. Developed construction staging and accelerated bridge construction concepts to minimize impacts and outages to highway and waterway traffic and conducted coordination with the USCG.
06/14-10/16	**MDPW, South 1st Street Bascule Bridge over the Kinnickinnic River, Milwaukee, WI.** Coordinated planning of an in-depth movable bridge inspection and provided technical consultation during development of the condition assessment with rehabilitation recommendations for this double-leaf trunnion-style bascule bridge. Provided technical reviews during preliminary engineering and final design for the rehabilitation of the bridge's structural, mechanical, and electrical systems.
05/09-10/13	**WisDOT, Wisconsin Street over the Fox River, Oshkosh, WI.** Led an in-depth movable bridge inspection and condition report, rehabilitation/replacement study, preliminary engineering, final design, and construction engineering services for a replacement 4-lane, 7-span bridge with double-leaf bascule span. Coordinated specification of a PLC-based system for simplicity and speed of operation, with the bridge opening as many as 10 times per hour during peak periods. Conducted stakeholder workshops and implemented feedback through special architectural treatments and enhanced pedestrian and bicyclist accommodations. The project received the 2009 WisDOT Excellence in Design Award.

03/06-10/06	**LADOTD, Lapalco Blvd Bascule Bridge over the Harvey Canal, Jefferson & Plaquemines Parishes, LA.** Led a movable bridge study of alternatives as part of an EA for extending an urban roadway. Developed concept-level movable bridge details and cost estimates for the alternatives studied. The preferred alternative is a new independent parallel double leaf bascule structure carrying three westbound lanes and rehabilitation and reconfiguration of the existing movable span to carry three eastbound lanes plus pedestrian/bikeway.
06/99-08/99	**MDOT, I-110 Bascule Bridge over Back Bay of Biloxi Emergency Repairs, Biloxi, MS.** performed an emergency damage assessment and designed repairs for a 4-lane interstate double-leaf bascule bridge damaged by impact of an under-passing vessel. Made recommendations to temporarily re-open the bridge with reduced traffic lanes. Developed repair details that included heat straightening a heavily damaged bascule girder flange and web and making bolted splice repairs to a fracture in the web. Provided advanced coordination with the fabricator and heat straightening subcontractor. During an 11-day outage, provided around-theclock on-site construction oversight. During 06/2010 – 7/2011 provided technical reviews for rehabilitation design of the bascule span that included staged replacement of its open steel grid deck, span rebalancing and complex traffic maintenance. During 04/1015 – 10/2015, provided consultation during development of movable bridge inspection manuals for 3 bascule bridges including the I-110 structure to address compliance with Metric 19 (Inspection Procedures – Complex Bridges) of the NBIS Oversight Program.
04/14-04/16	**WisDOT, Racine Street Bascule Bridge over the Fox River, Menasha, WI.** Coordinated in-depth bridge inspection and led preparation of a bridge condition report with study of alternatives and development of concepts and preliminary plans for a deteriorated double leaf bascule bridge. Viable alternatives for on and off-line replacements were studied and presented at public meetings and stakeholder workshops. Provided technical consultation during design of the preferred alternative of a new doubleleaf bascule span providing a 101-foot navigation channel with flanking slab span over an auxiliary navigation channel and fixed PPC girder spans over the remainder of the waterway.
06/15-12/18	**FDOT, Southern Boulevard (SR80) Bascule Bridge Replacement Over Inter-coastal Waterway, Palm Beach, FL.** Performed technical reviews of the design and specifications for this replacement double-leaf bascule bridge. Focus items included the curved tread and mating track forgings, bascule framing system and counterweights. Each leaf of the 160-foot movable span is supported by 2 bascule girders having variable depth plate girder floor beams spanning between them supporting an exodermic deck. Performed shop inspections during machining of the tracks and treads.
10/99-09/04	**Monroe County, O'Rorke Bascule Bridge over the Genesee River, Rochester, NY.** Led the superstructure design for a replacement 4-lane double-leaf bascule bridge. Reviewed designs for the bascule substructures, mechanical system and approach spans. Oversaw testing of fabricated and machined components, reviewed erection procedures and performed critical milestone site inspections. The project was awarded the AISC Prize Bridge Award in the Movable Span category.
05/02-05/08	**WisDOT, Wisconsin Street over the Fox River, Oshkosh, WI.** Led an in-depth movable bridge inspection and condition report, rehabilitation/replacement study, preliminary engineering, final design, and construction engineering services for a replacement 4-lane, 7-span bridge with double-leaf bascule span. Coordinated specification of a PLC-based system for simplicity and speed of operation, with the bridge opening as many as 10 times per hour during peak periods. Conducted stakeholder workshops and implemented feedback through special architectural treatments and enhanced pedestrian and bicyclist accommodations. The project received the 2009 WisDOT Excellence in Design Award.



Firm	Wiss, Janney, Elstner Associates, Inc.		
Name	Curtis J. Schroeder, PE, SE, AWS, NHI, NDT	Years of Relevant Experience with this Employer	3
Title	Sampling	Years of Relevant Experience with Other Employer(s)	8

Degree(s)/Years/Specialization			BS/2009/Civil Engineering MS/2011/Civil Engineering PhD/2018/Civil Engineering
Active Registration Number/State/Expiration Date			Dr. Schroeder is also a licensed PE in two other states
Year Registered	2021	Discipline	SE IL, License No.: 081.008638/expires 1.2022
Active Registration Number/State/Expiration Date			Dr. Schroeder is also a licensed PE in two other states
Year Registered	2015	Discipline	PE WI, License No.: 44013/expires 7.2022
			NHI 130078 - Fracture Critical Inspection Techniques of Steel Bridges
			NHI 130055 - Safety Inspection of In-Service Bridges (& Refresher 130053)
			AWS Certified Welding Inspector
			NDT Ultrasonic Technician - Level II
			NDT Magnetic Particle Testing - Level II
			NDT Magnetic Particle Testing - Level II
Contract Role(s)/Brief Description of Responsibilities			**Sampling**. Curtis will lead nondestructive testing of steel elements focusing on phased array UT (PAUT) and MT. He will also participate in sampling, bridge inspection, load rating, and development of welding procedures.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
11/21-Ongoing	**Contract No. 44-2687 State Project No. H.009730.5 Louisiana Department of Transportation and Development, LA 2 over Red River Bridge In-Depth Inspection, LA.** Bridge Inspector for the in-depth inspection of LA 2 over Red River Bridge (a through truss with a total length of 3,059' in northwestern Louisiana).
06/19-07/20	**Purdue-Fort Wayne Pedestrian Bridge, Fort Wayne, IN.** Project Engineer assisting with UT and PAUT inspection of CJP welds, review of repair design calculations, load rating, and visual, MT, and UT inspection of repairs for this cable stay bridge.
01/21-Ongoing	**Chicago Skyway Bridge, Chicago, IL.** Project Engineer assisting with visual inspection and load rating of primary members and gusset plates on steel deck truss bridge and steel piers.
11/21-02/22	**Susquehanna River Railroad Bridge, Havre de Grace, MD.** Project Engineer assisting with UT and PAUT inspection of 45 pinned connections of deck truss railroad bridge with known defect indications.
08/21-10/21	**Black Hawk Bridge, Lansing, IA.** Project Engineer responsible for UT and PAUT of 21 pinned connections in a steel through truss and suspended spans. Assisted with fracture critical inspection of steel through-truss spans.

07/21-08/21	**Hernando de Soto Bridge, Memphis, TN.** Project Engineer for the fracture investigation of a tie girder fabricated using T-1 steel in one of two tied arches. Performed UT, PAUT, and wet fluorescent MT of removed fracture specimen and steel cores. Performed QA verification of PAUT inspection procedure.
03/21-08/21 05/19-09/19	**Jefferson Barracks Bridge, St. Louis, MO.** Project Engineer for the fracture critical inspection of the twin tied-arch bridges over the Mississippi River. Performed PAUT and MT inspection of tie girder welds during emergency repair work to estimate extent and size of cracking. Performed inspection of welded repairs as a certified welding inspector (CWI), assisted with follow-up MT inspection of tie girder welds, and reviewed weld repair design for rehabilitation project.
05/21-08/21 09/19-11/19	**Burlington-Bristol Bridge Sheave Inspections, Burlington, NJ.** Project Engineer performing PAUT of surface indications on thrust face of vertical lift bridge cast sheave and wet fluorescent MT inspection of cast sheaves. Assisted with development of repair recommendations.
04/21-06/21	**Hawthorne Bridge, Portland, OR.** Project Engineer assisting with UT and wet fluorescent MT inspection of vertical lift bridge trunnions, including through-bore examinations.
01/21-05/21	**US 136 over Wabash River, Covington, IN.** Team Leader for special inspection of a post-tensioned, concrete trapezoidal box girder bridge that included visual inspection of epoxy-injected cracks in the web wall, ground penetrating radar (GPR) inspection to locate vertical shear reinforcement, and concrete core removal for testing of concrete strength.
01/21-04/21	**Franklin Street Bridge, Michigan City, IN**. Project Engineer assisting with the development of tread casting crack repairs and performing visual and MT inspection of field-welded repairs.
09/20-01/21	**North Dakota DOT Pin and Link Inspections, ND.** Project Manager for PAUT of 344 bridge pins on 17 bridges with both pin and hanger and pinned hinge connections.
10/20-11/20	**Eagle's Nest Bridge, Hebron, ND.** Project Manager for repair of cracked pin plates at bridge pinned hinges. Developed weld repair solution and performed MT and CWI inspection of welded repairs.
08/20-11/20	**Charles Berry Bridge, Lorain, OH.** Project Engineer assisting with UT inspection of bascule bridge trunnions, including through-bore examinations.
04/20-06/20	**US 6 over SR 331, Bremen, IN.** Team Leader for special inspection of bridge containing 14 pinned hinge connections, including visual inspection, UT, and MT. Assisted with development of repair recommendations for cracked pin plate fillet welds.
09/21-12/21	**Delaware River Bridge, Bristol, PA.** Project Engineer to develop PAUT inspection plan to locate weld-filled holes in truss members within a gusset plate connection. Assisted with PAUT technician performance testing. (2017) Project Engineer to develop UT inspection plan to locate weld-filled holes in truss members. Assisted with investigation of bridge member fracture.
05/19-08/19 01/17-03/17	**Water Street Bridge, Pittston, PA.** Project Engineer for the UT of ten transfer pins in steel through-truss bridge.

Firm	KPFF Consulting Engineers		
Name	Mark Powlison (ANSI Level 3)	Years of Relevant Experience with this Employer	9
Title	Material Testing	Years of Relevant Experience with Other Employer(s)	17

Degree(s)/Years/Specialization			AS, Metals Technology
Active Registration Number/State/Expiration Date			N/A
Year Registered	N/A	Discipline	N/A
Contract Role(s)/Brief Description of Responsibilities			**Material Testing**. Mark has extensive experience in the materials investigation and testing field. His career began in non-destructive testing and gradually grew to special inspections, from which he has refined his skills over the last 26 years. During this time, Mark has managed special inspection services for many healthcare, public and high-profile facilities.

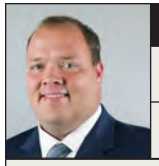
Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
01/94-Ongoing	**Inspected/tested/evaluated:** ▶ Bureau of Overseas Buildings Operations (OBO), U.S. Embassy Structural Engineering Investigation & Repair Recommendations, Vientiane, Laos ▶ OBO, FY19 Capital Project Selected Improvements, Vienna, Austria ▶ OBO, New Embassy Compound, Asuncion, Paraguay ▶ Chevron Business and Real Estate Services, Seismic and Structural Building Assessments, Worldwide ▶ Port of Portland, PDXNext, Parking Addition & Consolidated Rental Car Facility, Portland, OR ▶ Port of Vancouver, Terminal 2 Berth 7 Bulk Facilities Assessment, Vancouver, WA ▶ Portland General Electric, Integrated Operations Center, Tualatin, OR ▶ 250 Taylor Office Building (NW Natural Office), Portland, OR ▶ Clackamas County, Holly Lane Bridge Inspection and Load Rating Assessment, Oregon City, OR ▶ City of Gladstone, Gladstone Police Department Building Seismic Rehabilitation, Gladstone, OR ▶ US Department of Veterans Affairs, Portland VA Medical Center Seismic Upgrade and Addition, Portland, OR (in design) ▶ US General Services Administration, William Kenzo Nakamura US Courthouse Exterior Facade Evaluation Testing and Remediation, Seattle, WA ▶ State of Oregon, Oregon Supreme Court Building Facade Restoration, Salem, OR ▶ Salem Health, Salem Hospital Parking Garage Addition and ▶ Seismic Upgrade, Salem, OR (in construction) ▶ Intel Corporation, Ronler Acres Fabrication and Office Building, Hillsboro, OR ▶ Unico Properties LLC, The Weatherly Building Seismic Retrofit, Portland, OR (in design) ▶ Urban Renaissance Group, 1320 Broadway Building Renovation Special Inspections, Portland, OR ▶ Towne Storage Property, LLC, Towne Storage Building Adaptive Reuse, Portland, OR

Firm	Wiss, Janney, Elstner Associates, Inc.		
Name	Jonathan McGormley, PE	Years of Relevant Experience with this Employer	28
Title	Corrosion Detection	Years of Relevant Experience with Other Employer(s)	1

Degree(s)/Years/Specialization			BS/1992/Civil Engineering MS/1994/Civil Engineering
Active Registration Number/State/Expiration Date			**Corrosion Detection**. In addition to LA, Mr. McGormley is licensed in 7 other states and is a licensed Structural Engineer in IL.
Year Registered	2015	Discipline	PE.43912/LA/3.31.24
			NBIS Certified Team Leader and Program Manager
			NHI 130078 - Fracture Critical Inspection Techniques of Steel Bridges
			NHI 130055 - Safety Inspection of In-Service Bridges (& Refresher 130053)
			ATSSA Traffic Control Technician Training/ TC Supervisor Training
Contract Role(s)/Brief Description of Responsibilities			**Corrosion Detection.** Jonathan leads WJE's structural engineering including instrumentation and testing, bridge inspections, and repair design.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
07/19–Ongoing	**Danziger Lift Span Bridge, US 90, over the Industrial Canal, New Orleans, LA.** Project Manager responsible for overseeing the inspection of portions of the lift span contributing to reported operational issues, an in-depth inspection of the lift bridge machinery and electrical systems, and development of repairs to restore the bridge's long-term functionality and reliability. Oversaw the development of a unique monitoring and sensor installation plan, the installation of instrumentation and monitoring equipment, and the creation of a web-accessible reporting platform to evaluate the bridge's operations over an extended period. Assisted with development of plans and specifications to address emergency repairs including the installation of polyester polymer concrete lift span orthotropic deck overlay repairs, replacement of failed pinion bearings, elimination of lift span-to-approach span contact issues, and the improvement of the lift span seating by counterweight movements and air buffer repairs. Bridge monitoring is ongoing.
07/17-Ongoing	**Mississippi Office of State Aid Complex Inspections, MS.** Project Manager, Inspection Team Leader. Mississippi Office of State Aid hired AECOM to perform 168 inspections and load ratings of county bridges across the Northern part of the state. Landon manages the project as well as performing bridge inspection on the project.
05/19-08/19; 08/20-Ongoing	**I-255 Jefferson Barracks Bridge over the Mississippi River, Emergency Repairs, Mehlville, MO.** Project Manager responsible for emergency repairs and subsequent rehabilitation repair design. Following the discovery of a six-foot-long crack in the steel tie girder during a fracture critical inspection, performed an in-depth inspection of similar details, obtained material samples for laboratory testing, coordinated emergency repairs, oversaw repair installation, and prepared investigation report. Completed bridge rehabilitation plans for the twin, tied-arch structures with construction ongoing.

03/21-Ongoing	**Luling Bridge Deck Overlay Repair Consultation, St. Charles Parish, LA.** Project Manager responsible for revising the project specifications and providing quality control assistance for the repair of an orthotropic deck overlay system comprising and epoxy underlayment with a SFRC overlay on the cable-stayed spans. Installed a long-term monitoring system to evaluate the performance of the overlay repairs.
02/19-Ongoing	**US 90 over Bayou Ramos, St. Mary Parish, LA.** Project Manager leading the investigation of delayed end cracking of precast, prestressed concrete (PPC) girders. The project includes the evaluation of previously collected monitoring data, development of a detailed finite element model to examine crack initiation and repair options, inspection of existing retrofits, laboratory testing of CFRP repairs, and development of a trial retrofit program.
09/21-Ongoing	**I-10/310 Bonnet Carré Fire Damage Repair, St. Charles Parish, LA.** Project Manager overseeing the emergency inspection and load rating of the PPC girders, substructures, and bridge deck damaged by fire. Developed repair scope of work and estimated probable construction costs. Preparation of repair drawings and specifications ongoing.
12/21-Ongoing	**Jefferson St. Bascule Bridge Rehabilitation, Joliet, IL.** Project Manager overseeing the rehabilitation of structural, mechanical, and electrical components of this rolling Scherzer lift bridge. Inspection and design work ongoing.
02/19-07/19	**Lake Shore Drive Bridge over the Chicago River, Girder Fracture Investigation, Chicago, IL.** Project Manager leading the investigation, stabilization, and repair installation after the bridge experienced two girder fractures related to corrosion.
10/18-01/19	**Sunshine Bridge over the Mississippi River, St. James Parish, LA.** Project Manager responsible for the development and implementation of a monitoring plan to provide information regarding redistribution of loads during the installation of repairs to the truss bottom compression chord damaged by impact. Responsible for the design of the jacking system, review of member repair design, site observations, preparation of shop and jacking procedure drawings, field technical assistance, and chord jacking operations oversight.
03/15-06/17	**IH-345 Inspection, Analysis, and Retrofit Design, Dallas, TX.** Project Manager for a fracture critical inspection of the 1.6-mile-long steel two-girder structure connecting I-35, I-45, and US 75 with local city streets, visual examination of substructure elements, and a visual and exploratory study of the PT deck. Oversaw instrumentation and field load testing for finite element method model calibration and trial retrofit installations. Developed fatigue retrofit contract documents and provided on-site construction observation and technical support throughout construction.
03/14-12/14	**S. Halsted Street over the Little Calumet River, Chicago, IL.** Project advisor performing QA/QC for load ratings and gusset plate rehabilitation design to address live load rating concerns for this steel truss bridge.
09/13-09/13	**Grand Avenue Bascule Bridge, Chicago, IL.** Project Engineer for gusset plate condition assessment, load ratings, and preliminary retrofit development for members of this double leaf bascule bridge with inadequate live load capacity.
04/10-04/11	**Hylebos Bridge, Tacoma, WA.** Project Engineer conducting the visual inspection of the double-leaf bascule bridge in preparation for its rehabilitation.

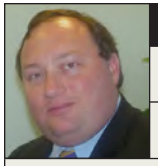


Firm	AECOM Technical Services, Inc.		
Name	Brady Seston, SE	Years of Relevant Experience with this Employer	11
Title	Bridge Deck NDT	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/2011/Civil Engineering
Active Registration Number/State/Expiration Date			45072/WI/7.31.2022
Year Registered	2018	Discipline	Civil Engineer
Contract Role(s)/Brief Description of Responsibilities			**Bridge Deck NDT.** Brady is responsible for the coordination and scheduling of NDT inspection activities using infrared thermography, ground penetrating radar or concrete coring. As the NDT engineer, he has been responsible for client relationships, schedule coordination, data collection and reporting on numerous projects throughout the United States. Brady has worked with local municipalities, counties and state department of transportations on projects ranging from single bridge or roadway projects to yearly system wide inspection and rehabilitation projects. His diverse project background is beneficial in collaborating between multiple project staff and agencies.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
06/16-04/17	**LADOTD, I-10 Atchafalaya Basin Bridge, Lafayette, LA.** Project engineer for the ground penetrating radar (GPR) survey using air-launched antennas to locate and quantify potential deterioration and depth of cover over the top layer of reinforcing steel in the concrete deck of the Atchafalaya Basin Bridge between Baton Rouge and Lafayette, Louisiana. The project included inspection of the driving lanes and shoulders in both directions and analysis of the westbound lanes only. The deck area of the westbound bridge totaled approximately 3,795,000 square feet.
12/15- 02/16	**LADOTD, LA Route 1 over Port Allen Canal, Baton Rouge, LA.** Project engineer for the infrared thermographic and (IR) ground penetrating radar (GPR) survey using ground contact antennas to locate and quantify delaminations and depth of cover over the top layer of reinforcing steel in the concrete deck of the Louisiana Route 1 bridge over the Port Allen Canal in Baton Rouge, Louisiana. The project included inspection and analysis of the driving lanes and shoulders in both directions. The total deck area inspected was approximately 140,000 square feet.
05/20-09/21	**El Paso County, South Academy Blvd over BNSF Rehabilitation, El Paso County, CO.** Project engineer for the infrared thermographic (IR) inspection. The IR survey located and quantified the delamination in the concrete bridge decks. In addition, 44 cores were taken to determine the chloride ion content in the bridge decks. The deck area of the bridges totaled approximately 127,000 square feet.
06/21-Ongoing	**WisDOT, Statewide IR Surveys WO 6, WI.** Project manager for the statewide infrared thermographic (IR) inspection to locate and quantify delaminations in the concrete deck of 252 bridge decks for WisDOT. The project includes the inspection of the driving lanes and shoulders of the bridge decks. IR Plan views were created for an additional 120 bridges to show location of each defect. Underside IR was performed on 56 decks. The IR surveys are used to determine the bridge deck condition. The deck area of the bridges totaled approximately 3,141,200 square feet.

05/21-12/21	**WisDOT, Statewide Chloride Ion Coring WO 5, WI**. Project Manager for the statewide concrete coring to determine the chloride ion content in the concrete deck of 41 bridge decks for WisDOT. The project includes taking a minimum of three cores per deck for chloride testing. Plan views were created to show location of each core along with the crown and slope of each deck. A total of 123 cores and 246 chloride ion tests were taken.
10/20-Ongoing	**WisDOT, Statewide IR Surveys WO 2, WI.** Project manager for the statewide infrared thermographic (IR) inspection to locate and quantify delaminations in the concrete deck of 622 bridge decks for WisDOT. The project includes the inspection of the driving lanes and shoulders of the bridge decks. These surveys are used to determine the initial bridge deck condition. The deck area of the bridges totaled approximately 5,076,300 square feet.
03/20-12/20	**MDOT, Statewide IR, GPR and Coring, MS.** Project engineer for the infrared thermographic (IR), ground penetrating radar (GPR) and underside surveys. The IR survey located and quantified the delamination in the concrete bridge decks. The GPR survey consisted of using air-launched horn antennas to locate the depth of cover over the top layer of reinforcing steel. The project included IR and GPR inspections of the topside of the deck and also an underside visual inspection of the deck underside. These surveys were combined to determine rehabilitation areas. In addition, 57 cores were taken to determine the chloride ion content in the bridge decks and to calibrate the GPR signal. The deck area of the bridges totaled approximately 628,200 square feet.
06/20-06/21	**WisDOT, Statewide Chloride Ion Coring WO 14, WI.** Project Manager for the statewide concrete coring to determine the chloride ion content in the concrete deck of 91 bridge decks for WisDOT. The project includes taking a minimum of three cores per deck for chloride testing. Plan views were created to show location of each core along with the crown and slope of each deck. A total of 287 cores and 574 chloride ion tests were taken.
02/19-12/19	**MDOT, Statewide IR, GPR and Coring, MS.** Project engineer for the infrared thermographic (IR), ground penetrating radar (GPR) and underside surveys. The IR survey located and quantified the delamination in the concrete bridge decks. The GPR survey consisted of using air-launched horn antennas to locate the depth of cover over the top layer of reinforcing steel. The project included IR and GPR inspections of the topside of the deck and also an underside visual inspection of the deck underside. These surveys were combined to determine rehabilitation areas. In addition, 75 cores were taken to determine the chloride ion content in the bridge decks and to calibrate the GPR signal. The deck area of the bridges totaled approximately 594,500 square feet.

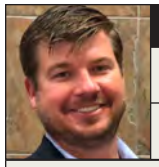


Firm	AECOM Technical Services, Inc.		
Name	Jonathan McDowell, PE	Years of Relevant Experience with this Employer	16
Title	Roadway -Traffic Task Leader/Maintenance of Traffic - TMP	Years of Relevant Experience with Other Employer(s)	6

Degree(s)/Years/Specialization			BS/1996/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0030508/LA/3.31.23 Additional active licenses in MS, AR, TX
Year Registered	2003	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Roadway - Traffic Task Leader/Maintenance of Traffic - TMP**. Jonathan will play a lead role in roadway design, benefitting from over 22 years' experience as a Project Engineer and Project Manager for a wide variety of transportation and public infrastructure projects, including the development and review of signing plans. His roles have included feasibility planning, NEPA Environmental studies, design, contract administration, and construction engineering and inspection for all modes of transportation projects involving interstate highways, urban and rural roadways, bridges, streetcars, railroads, drainage canals and culverts, port security improvements, cruise ship terminals, and airports. Through his experience, he understands the project delivery process required to bring a transportation project from an idea to a built reality. His computer skills include AutoCAD Land Development Desktop, Civil3D, Microstation, Inroads, MS Office, MS Project, HECRAS, STAAD, ArcView, and various other design software platforms. **Jonathan meets MPRs 2&8.**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
10/20-Ongoing	**City of Baton Rouge/Parish of East Baton Rouge, College Drive Improvements (Perkins Road to Bawell), Baton Rouge, LA.** Project Manager and Task Manager for the Urban Road Design and Complete Streets improvements to College Drive. The project include a Design Study to develop a corridor and street network plan that includes potential connecting side road improvements, access management solutions, and other improvements along College Drive and the I-10 ramps to provide congestion relief and improve driver and pedestrian safety. The selected alternative will move to preliminary and final design.
09/17-Ongoing	**State Project No. BA-0153: Mid Barataria Sediment Diversion, Coastal Restoration and Protection Authority of the State of Louisiana, Plaquemines Parish, LA.** Task manager and lead engineer for the relocation of LA 23 and the NOGC Railroad tracks across the proposed sediment diversion. Performed QC review of the traffic report and participated in the environmental and public involvement tasks. The rail improvements extend the track across the diversion channel intake structure, which will feature a bridge with a moveable span for canal maintenance and about 10,000 feet of new railroad track. The highway improvements will include a 2,300-foot-long structure composed of precast and cast in place concrete elements that will carry two lanes in each direction with shoulders and two water mains to be hung under the bridge deck. Roadway improvements include access roads on each side of the bridge to maintain adjacent property access and relocated alignments of the rural divided highway to connect the existing highway to the new bridge structure.

07/15-Ongoing	**LADOTD (H.004273), I-49 Connector, Lafayette Regional Airport to I-10/I-49/US 167 Interchange, Lafayette Parish, LA.** Project Manager, Leadership Team Member, and Railroad Coordination and Alignment Modifications Task Manager for the NEPA Supplemental EIS and Design of a 5-mile urban freeway corridor. The project includes a very elaborate Context Sensitive Solutions process that is occurring concurrently with the environmental process. The project includes a signature bridge, an urban master plan for local road and frontage road connections, implementation strategies and potential modifications to an adjacent railroad track including the replacement of up to three at-grade crossings with underpasses and possible modifications to an Amtrak station platform. Other rail modifications include replacing at grade crossing with highway overpasses. In addition, Jonathan will also perform tasks associated with highway geometrics, highway traffic, and environmental and public involvement tasks.
02/07-11/09	**City of Baton Rouge/Parish of East Baton Rouge, Siegen Lane Improvements (Highland Road to Perkins Road), Baton Rouge, LA.** Project Manager and Task Manager for the design of corridor improvements to Siegen Lane to upgrade the two lane suburban road to a four lane urban boulevard. Performed road geometrics, develop suggested sequence of construction plans, and reviewed the drainage plans and calculations. Managed and authored the design study which included an alignment analysis, preliminary drainage design, a Phase I Environmental Site Assessment, a wetland study, and a noise study.
11/10-10/16	**New Orleans Regional Transit Authority, Loyola/Rampart Streetcar Rail Expansion, New Orleans LA.** Project Manager and Infrastructure Task Leader to prepare two sets of contract plans and specifications on an accelerated schedule to reconfigure the streetscape to include streetcar tracks in a shared traffic lane. Designed the roadway typical section in accordance with the City of New Orleans Complete Streets Ordinance. Led utility coordination effort and test hole program to locate all underground utilities to resolve utility conflicts. Led the road design, MOT during construction. Performed construction support services.
05/13-07/15	**LADOTD (H.001779), Red River Bridge at Jimmie Davis Highway (LA 511) Environmental Assessment, Bossier and Caddo Parishes, LA.** Lead roadway design engineer to design geometric layout alternatives to improve the capacity and accommodate pedestrian and bicycle access for the bridge crossing of the Red River along Jimmie Davis Highway. Tasks included the development of the purpose and need statement, the project design criteria, and the geometric alternatives of the bridge, interchange ramps on each side of the bridge, and roadway approaches. Developed a median U-turn concept for LA 511.
11/04-12/17	**LADOTD (State Highway Project No. 700-92-0016), Florida Avenue Bridge over IHNC, New Orleans, LA.** Deputy Project Manager and Project Engineer responsible for the geometric design of a high-level bridge with 158 ft vertical clearance and associated interchange ramps and approach roadways. Coordinated with utility companies and railroad agency for proposed relocations of a 48" water main, a 54" sewer force main, a 72" sewer force main, an electrical duct bank, a temporary railroad relocation, and several other utilities that were affected by the construction of the bridge. Proposed modifications to the site layout and parking area for an operator house associated with the existing adjacent draw bridge and a drainage pump station located under the proposed bridge. Prepared cost estimates for the main span and approach bid packages. Assisted in PM duties.
06/15-Ongoing	**LADOTD State Project No. H.004367.5: Route LA 3139, Earhart Expressway Extension to US 61, Jefferson Parish, LA.** Task Manager and Lead Roadway Engineer for the extension of the Earhart Expressway (LA 3139) onto Airline Drive (US 61). Developed urban highway geometric alternatives to accept the expressway extension into the Airline Drive Corridor. Alternatives considered the lane configuration, location of direct and indirect median openings, location and potential phasing of traffic signals, pedestrian movement within the corridor, bus stop locations, utility impacts, access management, and ability to drop lanes along the corridor in order to transition back to the current lane configuration at the west end of the project. Reviewed traffic report and participation in the environmental and public involvement tasks.



Firm	AECOM Technical Services, Inc.		
Name	Greg Trahan, PE	Years of Relevant Experience with this Employer	16
Title	Roadway Design	Years of Relevant Experience with Other Employer(s)	1

Degree(s)/Years/Specialization			BS/2005/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0036041/LA/03.31.23
Year Registered	2011	Discipline	Civil Engineer
Other Training			Highway Safety Manual Workshop; 2015 ATSSA Certified–Traffic Control Technician/ Supervisor/Flagger; 2016 ATSSA Certified–High Friction Surface Treatment Inspection & Installation; LA DOTD Traffic Process and Report Parts 1,2, and 3 (2018), 2019 ATSSA Certified–Traffic Control Supervisor Refresher
Contract Role(s)/Brief Description of Responsibilities			**Roadway Design.** Greg is a civil engineer experienced with working on roadway design and traffic projects. He has worked hard delivering credible and quality projects for AECOM since graduating college. During his time with AECOM, he has had experience as a Project Engineer and Project Manager for many transportation, planning, design, specification, and construction projects. He was elected President of the Baton Rouge Louisiana Engineers Society in May 2020.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
09/17-Ongoing	**Coastal Protection and Restoration Authority, LA 23 Over Mid-Barataria Sediment Diversion, Plaquemines Parish, LA.** Project Engineer that assisted in the Design Plans for the new bridge and roadway structure over the new sediment diversion. The project consists of a new concrete precast girder bridge, approximately 2,200 feet in length, and the connecting asphalt roadway. Design Plans include Plan and Profile sheets, Drainage Plan and Profile sheets, Sequence of Construction Plans. There will be multiple construction activities being conducted at one time, the sequence of Construction is a critical element of design in order to manage traffic and maintain roadway operations even if evacuation routes would be required.
2014	**LADOTD, Krotz Springs Bridge and Business US 90 Bridge In-Depth Bridge Inspection, LA.** Project Engineer that assisted in the Maintenance of Traffic Plans for the inspection of the Krotz Springs Bridge and the Business US 90 Bridge. These plans included provisions to detour traffic from the closed portions of the bridge or entrance ramps.
2/07-6/10	**Baton Rouge Dept. of Public Works, Siegen Lane Improvements, Highland Rd. to 650' south of Perkins Rd., Baton Rouge, LA.** Project Engineer that assisted in the design and plan development to widen 1.18-mile segment of Siegen Lane to a four lane boulevard. Tasks include the geometric design of the roadway, subsurface drainage, and the development of the sequence of construction. The drainage area encompassed approximately 225 acres. A study was conducted on the multiple detention ponds, using a pond modeling program to determine if the box culvert system would need to be upgraded. A HEC-RAS model was conducted on an existing drainage ditch crossing Siegen Lane to ensure that the proposed drainage would not exceed the existing tail water elevation. The sizing and spacing of culverts and inlets was determined using the LADOTD HYDRWIN hydraulics program. Prepared quantities and cost estimates for the project.

05/14-Ongoing	**LADOTD, Earhart Expressway Extension to US 61, Jefferson Parish, LA.** Project Engineer for the traffic study involving the new extension of the Earhart Expressway a six lane urban freeway, to Airline Drive, a four-lane highway, for a total of ten lanes. The study will include analyzing existing and future conditions along the US 61 (Airline Highway) and LA 3154 (Dickory Avenue). As part of this project Greg is analyzing design alternatives, traffic data collection (speed and vehicular classification) along the corridor, and crash data.
11/04-12/07	**LADOTD State Project No. 700-92-0016, Florida Avenue Bridge over IHNC, New Orleans, LA.** Assisted in the geometric design of two interchange ramps connecting to Florida Ave. Bridge and two relocated parking areas for two major public installations in the project area. He assisted in the design of girder splices for the steel main span alternative. He also assisted in the preparation of quantity calculations and cost estimates for the steel main span alternative.
05/13-Ongoing	**LADOTD, State Project No. H.001779.5 Red River Bridge at Jimmie Davis Highway (LA 511) EA, Bossier and Caddo Parishes, LA.** Assisted in preparing a feasibility study to widen the existing crossing of the Red River along Jimmie Davis Bridge and to connect shared use bicycle and pedestrian paths on each side of the river. Task included geometrics study of highway and interchange ramps to produce three feasibility alternatives.
12/1-4/17	**LADOTD, Safety Studies Retainer Contract, Low Cost Safety Improvements, Statewide, LA.** Project Engineer for the preparation of Safety Improvement Plans (SIP) for 282 systemic curves located throughout the state of Louisiana. The tasks associated with this project include; site visits to the curves, plan preparation of safety countermeasures for each curve, cost estimates for the plan set, and a pre-construction meeting with each DOTD district. Each site visit includes; a ball bank test, photo and an existing conditions documentation of each curve. The plan preparation includes deriving safety countermeasures at each curve location, preparing a letter size plan set of the safety countermeasures, including the Crash Modification Factors (CMFs) within the plan sheet, and preparing cost estimates for the safety countermeasures. After the completing each letter size plan sets, a meeting was held with each District to discuss countermeasures.
2/16-Ongoing	**Jefferson parish Public Works, Mounes St. Drainage Improvements, Jefferson Parish, LA.** Project Engineer for the traffic control plans for the construction of the drainage improvements along Mounes Street. Plans included the phasing of traffic to install inground box culverts within the limits of the travel lanes
5/10-9/12	**LADOTD State Project No. H.005171.1, I-49 Study to Identify Interim Improvements for Safety & Efficiency, St. Mary Parish, LA.** Aided in identifying roadway projects that would provide increased capacity or improved safety along the US 90 corridor. Some of the improvements may upgrade portions of US 90 to interstate standards.
05/1-04/13	**LADOTD, LA 935 Feasibility Study, Safety Retainer Contract, Ascension Parish, LA.** Project Engineer performed a Stage 0 on a segment of LA 935 from LA 431 to LA 22. Developed a conceptual alternative for the realignment of LA 935, including the typical section, design criteria, plan, and cost estimate. The road paralleling Black Bayou was realigned approximately 20' off the original alignment. This realignment allowed for the road to be widening to 12' lanes and add shoulders to provide a recovery area for drivers. AECOM also performed a cost analysis to ensure the feasibility of a build/no-build condition, minimize required Right-of-Way and/or acquisition of properties.

Firm	Forte & Tablada, Inc.		
Name	Allison Schilling, PE	Years of Relevant Experience with this Employer	4
Title	Roadway Design	Years of Relevant Experience with Other Employer(s)	35

Degree(s)/Years/Specialization			BS/1998
Active Registration Number/State/Expiration Date			PE.30265/LA/9.30.22
Year Registered	2002	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Roadway Design**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
01/17-01/18	**US 80 at Old Benton Rd. Roundabout, Bossier, LA.** Developed conceptual layout as well as preliminary and final plans for roundabout at US 80 and Old Benton Rd. in Bossier, LA. This roundabout is currently under construction as a permit project sponsored by the City of Bossier.
10/18-5/19	**H.000445.1-1- US 190 over UPRR and Little Teche Bayou, St. Landry Parish, LA.** Project Engineer for this project that developed a scoping document for the replacement or rehabilitation of the EB and WB US 190 bridges over the Union Pacific Railroad (UPRR) near I-49 and over Little Teche Bayou in St. Landy Parish, LA. Based on the findings, a Bridge Evaluation Report outlining the feasibility and preliminary cost estimates for several construction phasing alternatives, as well as a recommended scope of work, was developed.
2018	**LA 16 (Pete's Highway) at Cook Rd. Roundabout – Denham Springs, LA.** Worked as part of the Forte & Tablada team in reviewing the conceptual layout and preliminary design for roundabout at LA 16 and Cook Rd. in Denham Springs, LA. This project is currently in the final plan design phase.
2010-2012	**Multiple Roundabout Projects, Multiple Sites, LA.** Project Manager and supervised staff in the design of a roundabout at the intersection of US 190 and LA 434 in Bayou Lacombe, LA. Also worked as District Project Manager for the 3 roundabouts at the I-12 and US 51B interchange in Hammond, LA as well as the roundabout at the intersection of LA 1077 and LA 1085 in Madisonville, LA.
01/08-06/09	**LA 3158 (Airport Road at Old Covington Hwy. Roundabout).** Developed preliminary and final plans to construct a roundabout at the all-way stop controlled intersection of LA 3158 (Airport Rd.) and Old Covington Hwy. in Hammond, LA. Led a separate project after construction was complete to add landscaping to provide additional visibility of the roundabout.

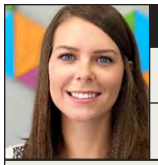
01/05-03/07	**LA 36/LA 59 (Abita Springs Roundabout).** This was the first roundabout constructed in District 62 and only the second one constructed in Louisiana. Mrs. Schilling developed conceptual drawings and presented to the Mayor of Abita Springs and the State Representative for the area for approval. The project involved purchasing a building within the Abita Springs Historic District several public meetings were required. The project involved minimizing impacts to a local park in one quadrant of the intersection, realignment of the Tammany Trace, converting a city street to a one-way street, paving of a gravel city street for maintenance of traffic during construction and realignment of a bank entrance driveway and city street to provide adequate distance from the roundabout. Mrs. Schilling met regularly with the local elected officials and business owners throughout the design of the project to discuss aspects of the project and added numerous improvements to mitigate impacts to the businesses and facilitate the movement of traffic through the area during construction. She also worked closely with FHWA and submitted the project for a FHWA "peer review" to ensure that the roundabout met design criteria used in other states. The project was late used a model in developing DOTD's Context Sensitive Solutions Policy.
01/10-05/12	**Cockerham Drive Improvements, Livingston Parish, LA.** Project Manager for the Preliminary and Final design plans for improvements to Cockerham Road, from Hatchell to Burgess Avenue. Improvements included pavement patching and overlay design, hydraulic analysis for installation of storm drain pipe and catch basins, and design of new concrete walkways and drives. This project provided safety and complete street enhancements along Cockerham Drive.
01/10-08/11	**I-12 (LA 1026 – LA 447) Juban to Walker Widening.** Developed preliminary and final plans to widen I-12 from 4 to 6 lanes. The project included widening the roadway to the inside, installation of cast-in-place median barriers with conduit for future lighting and overlaying the existing interstate travel lanes.
01/11-06/13	**I-12/US 190 EB Exit Improvements in Covington/Mandeville.** Developed preliminary and final plans to widen the eastbound exit to a double exit. The project included the geometric changes to the exit ramp, lengthening of the existing deceleration lane, overhead sign trusses, and guardrail.
01/07-04/09	**LA 1040 (LA 1040 – US 51) Old Baton Rouge Highway Realignment.** Developed preliminary and final plans to realign LA 1040 (Old Baton Rouge Highway) in Hammond to provide greater separation of the signalized US 51/US 190 and US 51/LA1040 intersections. The project included subsurface drainage, utility relocations, and partnering with the City of Hammond to acquire the right-of-way. The existing alignment was transferred to the City of Hammond after the project was complete.
01/06-06/10	**LA 1032 (US 190 – River Road) Realignment of River Road in Denham Springs.** Developed preliminary and final plans to realign LA 1032 (River Road) in Denham Springs to remove a "jog" in the roadway alignment on US 190. The project involved right-of-way acquisition, special design of a reverse crown at the US 190 intersection to minimize drainage impacts, and right-of-way taking to an adjacent business. It also involved working closely with private homeowners impacted by the realignment and transfer of a portion of River Road to the City of Denham Springs after the construction was complete.
01/05-07/06	**LA 1019 (LA 64 – LA 16) Safety improvements**. This project involved widening and overlay of LA 1019 to improve safety throughout the heavily travelled suburban corridor. Plans included redesign of roadway cross slope and superelevation for numerous curves throughout the project limits, the installation of raised pavement markers along both edges of the pavement for improved nighttime visibility, clearing and grubbing of the tree lines to improve sight distance from the numerous side streets and the addition/modification of the turn lanes at LA 16 while protecting a 100+ year oak tree. The project was the first project in Louisiana to include centerline rumble strips as a countermeasure to reduce head on crashes.

Firm	AECOM Technical Services, Inc.		
Name	David Wymore, PE	Years of Relevant Experience with this Employer	7
Title	Roadway Design	Years of Relevant Experience with Other Employer(s)	12

Degree(s)/Years/Specialization			BS/2002/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0043157/LA/3.31.23
Year Registered	2018	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Roadway Design**. David will serve as Roadway/Plan Development Technical Advisor.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
12/18-05/19	**S.P. No. H.011670, I-10 to Loyola Dr. Interchange (Design Build), Tender Offer, Boh Bros, LADOTD, Jefferson Parish, LA.** Roadway Design Manager for a design build proposal to modify the I-10 interchange at Loyola Drive to provide direct access connector ramps for traffic flowing to and from the new passenger terminal at Louis Armstrong International Airport. Led QC design team in review of proposal plans, proposal narrative, and ATC evaluations. Checked quantity takeoffs for consistency with plan set. Contributed to development of design build teams proposal narrative**.**
01/19-Ongoing	**Broadway St. Design-Build for Reconstruction of Main Lanes from Houston St. to IH 35, City of San Antonio, San Antonio, TX.** As Design Manager, oversaw the design of 1 miles of city street reconstruction. The reconstruction consisted of a complete replacement of the city street. The project consisted of reconstructing an existing 4-lane City of San Antonio street. The project included a complete street concept, side street parking, multiple utility relocates, ESA I&II, sidewalks traffic signals, and drainage improvements. He also managed 6 subconsultants.
08/14-12/16	**IH-10, PS&E, TxDOT, Sealy, TX.** As Project Manager, David oversaw the design of Segment 1 which is 3.0 miles of main lane and frontage road reconstruction. The reconstruction consisted of a complete replacement of main lanes, frontage road, cross streets, and bridges. The project consisted of reconstructing an existing 4-lane main lane concrete pavement divided facility to a proposed 6-lane concrete pavement undivided facility and reconstructing existing frontage roads on either side. David developed the horizontal and vertical alignments for the main lanes, 2 frontage roads, 9 ramps, 2 cross streets and 4 bridges. He designed 11 mechanically stabilized earth (MSE) retaining walls. David designed a traffic control plan which narrowed lanes but maintained the existing number of lanes throughout construction including a reversible HOV lane. The existing ingress and egress points between the main lane and frontage roads were maintained the full 24 months of construction. Oversaw the removal, drainage, signing, pavement markings, CTMS, overhead sign bridges, storm water pollution prevention plans, bridge specifications and cost estimates. He also managed 8 subconsultants.
12/10-04/12	**US 79, PS&E for Reconstruction of Two-Lane Roadway to Four-Lane Roadway, TxDOT, Houston, TX.** As Project Manager, prepared construction documents for widening an existing 2 lane undivided facility to four lanes with a continuous left turn lane for 1.4 miles and upgrading the existing 2 lane undivided facility to a four-lane divided facility for 2.9 miles. David used Geopak to develop the horizontal and vertical alignments. The project consisted of widening four existing culverts. He also developed a new drainage scheme to accommodate the additional impervious area. The project required the realignment of two County Roads.

08/06-06/10	**US 290 (Segment 4) PS&E, TxDOT, Houston, TX.** As Project Manager, oversaw the design of Segment 4 which is 2.0 miles of main lane and frontage road reconstruction. The reconstruction consisted of a complete replacement of main lanes, frontage road, cross streets, and bridges and reconstructing an existing 8-lane main lane concrete pavement undivided facility to a proposed 10-lane concrete pavement undivided facility and reconstructing existing frontage roads on either side. David developed the horizontal and vertical alignments for the main lanes, 2 frontage roads, 6 ramps, 4 cross streets and 8 bridges. He designed 10 mechanically stabilized earth (MSE) retaining walls, 9 sound walls, and 4 pedestrian block walls. Designed a traffic control plan which narrowed lanes but maintained the existing number of lanes throughout construction including a reversible HOV lane. The existing ingress and egress points between the main lane, frontage road, and HOV were maintained the full 38 months of construction. The project required the design of 3 diamond intersections and 13 high mast lights to be installed. Extensive grading was required for constructing 8 bridge header banks, 5 detention ponds totaling 140 acre-ft of storage and raising the existing frontage road up by 3 feet. Oversaw the quantities to include removal, drainage, signing, pavement markings, CTMS, overhead sign bridges, storm water pollution prevention plans, bridge specifications and cost estimates
06/11-02/12	**Gaines Road, Widen Intersection and Signal Improvements, Fort Bend County, Houston, TX.** As Project Manager, David prepared construction documents for widening the existing intersection along Gaines Road and installing a signalized intersection. David redesigned the existing open ditch to a closed storm sewer.
02/11-06/12	**South Mayde Creek, New Construction of Neighborhood Road, TxDOT, Houston, TX.** As Project Manager, David performed construction oversight for approximately 9,600 LF of 10-foot wide trail for pedestrian and bicycle use along South Mayde Creek. The trail is located along the north and south banks of the existing Harris County Flood Control District (HCFCD) drainage channel (South Mayde Creek) between Key Hole Lane and Heathergold Drive. A bridge connects the south and north trail segments across South Mayde Creek at Heathergold Drive, and there is one reinforced concrete box crossing and another bridge crossing at two tributary locations.
12/08-02/11	**PS&E for Widening of Main Lane and Bridges from Four Lanes to Eight Lanes, Sam Houston Tollway, Houston, TX.** As Project Engineer, David prepared construction documents for widening an existing 4 lane undivided facility for 2.8 miles. He used Geopak to develop the horizontal and vertical alignments for ramps with toll booths. He designed five mechanically stabilized earth (MSE) retaining walls. The project consisted of widening two existing bridges. One of the bridges was over Union Pacific Railroad which required rail road exhibits and coordination. He developed a new drainage scheme to accommodate the additional impervious area.
12/08-02/11	**CR 257, Reconstruction of Two-Lane Roadway Destroyed by a Hurricane, Brazoria County, Surf Side, TX.** As Project Engineer, David prepared construction documents for spot repairs and full roadway reconstruction from damage received by hurricane Ike for 9.7 miles. He used Geopak to develop horizontal and vertical alignments and cross sections.



Firm	AECOM Technical Services, Inc.		
Name	Sarah McEwen, PE, CFM	Years of Relevant Experience with this Employer	5
Title	Hydrology/Hydraulics	Years of Relevant Experience with Other Employer(s)	9

Degree(s)/Years/Specialization			BS/2013/Civil Engineering
Active Registration Number/State/Expiration Date			PE.42539/LA/9.30.22
Year Registered	2018	Discipline	Civil Engineering
Active Registration Number/State/Expiration Date			CFM, US 14-07857
Year Registered	2015	Discipline	Certified Floodplain Manager Additional Certification: Bridge Inspector
Contract Role(s)/Brief Description of Responsibilities			**Hydrology/Hydraulics**. Sarah is the Water Resource Manager of the Jackson, Mississippi AECOM Office. She has extensive experience with managing DOT related projects with respect to Bridge Hydraulics, Scour Evaluations, Internal Technical Reviews, and Roadway Hydraulics. She is also experienced with hydrologic modification impact analysis as part of site design and erosion control measures. She has a background in floodplain mapping and is a certified floodplain manager. Sarah has experience in HEC-HMS, GeoRAS, HEC-RAS, HEC-DSS, HEC-SSP, PCSWMM, HY-8, Hydraulic Toolbox, XPSWMM, ESRI ArcGIS, AutoCAD, SRH2D, MicroStation and GeoPak.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
01/19-Ongoing	**Road and Bridge Improvements Wyldwood Road, Travis County, TX.** Project Engineer. Project engineer in charge of the hydrology and hydraulic evaluations for two bridge sites along Wyldwood Road in Travis County, Texas. The hydrology consisted of implementing the NOAA Atlas 14 rainfall procedure for the Slaughter Creek and Danz Creek watersheds to develop the 2, 10, and 25-year peak discharges as well as the ultimate condition for the 100-year event. The hydraulic modeling included developing the FEMA Corrected Effective hydraulic modeling in HEC-RAS with current LiDAR and survey information. Design alternatives that meet the county criteria were evaluated as proposed conditions for each design storm. Currently, serving as lead review of the preliminary and construction phases.
01/17-01/22	**Sasol Chemicals, (USA) LLC, Drainage Impact Analysis, Lake Charles, LA.** Project Manager and Hydraulic Engineer. Served as project engineer that updated the HEC-HMS, HEC-RAS model, and report with as-built information. Also analyzed the results of preconstruction to post construction hydrologic and hydraulic impacts on FEMA and other regulations. Ongoing work to update report with design conditions and constructed as-builts for purposed of submitting a LOMR to the parish for inclusion in the FEMA map revision.
01/17-12/17	**FEMA Hydrologic and Hydraulic Support Services, New Orleans, LA.** Hydraulic Engineer. General contract for support and served as the engineer in charge of review of engineering designs submitted for consideration of funding. Included review of geological, hydrologic, hydraulic, and groundwater design components for a site in New Orleans.

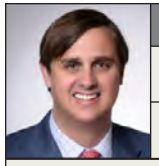
01/16-Ongoing	**MDOT, Scour Evaluations, Various Locations, MS.** Project Manager and Hydraulic Engineer. Led and completed the analysis for Phase I, II, III, and IV Scour Evaluations. For Phase I, data including all available historic bridge information, geotechnical, land use, stream conditions, and survey was collected to perform a geomorphic assessment. In Phase II, SRH2D was used to evaluate the riverine (with tidal boundary if appropriate and additional ADCIRC-SWAN for coastal scour) impacts for the appropriate AEPs. Scour analysis was conducted and compared with any observed scour to assess risk and develop the total scour profile. In Phase II, additional geotechnical boring information was collected to evaluate the structural stability with respect to scour. The critical scour elevation was found then compared to calculated and observed scour. Then if applicable a recommendation made to develop a Phase IV Plan of Action. During the POA, monitoring plans and detour routes were recommended and a completed FHWA POA draft submitted.
01/17-Ongoing	**CPRA, Mid-Barataria Sediment Diversion, Ironton, LA.** Project Engineer. Project Engineer in charge of coordination with subconsultants on weekly progress reports for submission to CPRA. Tasks include management and processing of data received from subconsultants. Other roles include reviewer of BODR report for technical approach and clarity. In addition, she led the scour evaluation of the bridge at a site with both riverine and coastal design factors evaluated for impact on the proposed structure including complex piers in a cohesive soil environment. Piers were evaluated using both HEC-18 and FLDOT methods due to the complex pier and cohesive soil conditions. A practical application of the scour methodology was used to replicate the most realistic scour conditions anticipated at the site.
01/18-Ongoing	**CPRA, Maurepas Swamp Engineering and Support Services, Garyville, LA.** Project Engineer. Project engineer in charge of reviewing existing XPSWMM subsurface modeling of local drainage in St. Johns Parish into Maurepas Swamp. The existing modeling was reviewed and converted into a PCSWMM model and updated with publicly available data for use in an evaluation of a diversion. Task include opening the existing model which was created in a version that is no longer recognized by current software, use and convert the available existing data in a new model, review for any land use or development changes, and develop a plan for necessary field data to be collected to finalize the updated existing conditions model. Tasks include evaluating the hydrologic routing around the proposed diversion, updating the HEC-RAS modeling, converting steady HEC-RAS into Unsteady, and designing hydraulic structures to ensure capacity throughout system to swamp.
01/17-01/18	**New Orleans Lakefront Airport Authority, Lakefront Airport 2D Subsurface Modeling, New Orleans, LA.** Hydraulic Engineer. General review and assistance on drainage design for the airport. As the project engineer work included using hydraulic software such as PCSWMM, to create hydraulic analysis of the pre- and post- conditions of site to drainage regulations.
01/17-01/19	**WR Grace Lake Charles Plant, Site Hydrology, Sulphur, LA.** Project Engineer. Performed hydrologic analysis for the refining facility using ArcGIS software and HEC-HMS. Analyzed various storm events and possible changes to site water treatment, storage, and discharge. As project engineer, she helped the client evaluate the hydraulic design submitted by another consultant for effectiveness with the site conditions. She became the Deputy Project Manager for a supplemental agreement to evaluate the subsurface and surface drainage systems and develop construction plans of a conveyance channel.

Firm	AECOM Technical Services, Inc.		
Name	Sreeni Bollu, PE	Years of Relevant Experience with this Employer	1
Title	Hydrology/Hydraulics	Years of Relevant Experience with Other Employer(s)	18

Degree(s)/Years/Specialization			MS/2003/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0034330/LA/03.31.23
Year Registered	2009	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			26490/TX/03.31.2023
Year Registered	2017	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			92547/FL/02.28.2023
Year Registered	2021	Discipline	Civil Engineer
Contract Role(s)/Brief Description1 of Responsibilities			**Hydrology/Hydraulics**. Sreeni is a civil engineer with over 18 years of experience in all phases of project development from conceptual design to construction management. He is in charge of project management and the civil engineering personnel, including schedules, staff, budgets, technical review and account management. He has provided professional consulting services to numerous public and private clients, serving as Project Manager or Project Engineer on roadway improvements, drainage studies, hydraulic models and designs, drainage improvements, levees, flood control projects, site developments, commercial & residential subdivisions, and construction management.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
06/21-Ongoing	**Broadmoor Groups D & E (New Orleans Department of Public Works, New Orleans, LA).** Project Manager for the development of construction plan sets for reconstruction of multiple roadways in the Broadmoor neighborhood of New Orleans. The project will consist of full reconstruction of the roadways, replacement of all drainage and water lines, sidewalk replacement/repairs, and the installation of ADA ramps at all intersections. The project is currently in final design and will advance through Construction Administration.
06/21-Ongoing	**Milan Group A (New Orleans Department of Public Works, New Orleans, LA).** Project Manager for the development of construction plan sets for reconstruction/restoration of multiple roadways in the Milan neighborhood of New Orleans, which is bounded by Napoleon Avenue, Claiborne Avenue, Louisiana Avenue and St. Charles Avenue. The project will consist of milling and overlaying with full depth patching of selected streets, incidental patching of other streets, sidewalk repairs, incidental repairs to drainage structures, and the installation of handicap ramps. The project is currently in Final design and will advance through Construction Administration and Resident Inspection.. .

06/21-Ongoing	**Jefferson Parish West Bank Program Management, Jefferson Parish, LA.** Project Manager assisting with the implementation of the West Bank projects for Jefferson Parish's Road Bond Improvement Program, which includes 70 roadway and bridge projects throughout Jefferson Parish. Mr. Bollu is responsible for the oversite of approximately 10-20 projects, including overseeing the design contractor's work, coordinating review with various Parish Departments, public and private utility companies, and other impacted agencies. Other responsibilities include review of plans and specifications submittal, scheduling, coordination for environmental clearances, right-of-way acquisition support, construction oversight, and project closeout.
06/21-Ongoing	**Mid-Barataria Diversion Design, (Coastal Protection and Restoration Authority (CPRA).** Project Engineering for the 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. Mr. Bollu assisted with detour roadway alignment creation/selection, TTC planning, and roadway plan preparation.
02/20-05/21	**Lake Vista Group C and Group E, New Orleans, LA.** Project Engineer responsible for the design of concrete roadway re-design and replacement, subsurface drainage improvements, and water main improvements.
02/20-05/21	**East Bank Drainage Improvements, St. Charles Parish, LA.** Lead Hydraulic Engineer/Project Manager responsible for creating H&H models to evaluate flooding within the existing neighborhood, provide alternate solutions to alleviate flooding and develop a report with recommended solutions with cost estimates for 25yr and 100yr rainfall events for Montz: 1,635 acres drainage basin, Norco: 800 acres drainage basin, New Sarpy: 690 acres drainage basin, Ormond: 1,420 acres drainage basin.
08/12-01/20	**West Bank Hurricane Protection Levee System (WBHPL), St. Charles Parish, LA.** Project Manager responsible for coordination, preparation of plans and specifications, construction administration and resident inspection. This project is approximately a nine (9) mile levee where the alignment extends from the Sunset Levee District on the western flank to the Davis Pond Guide Levee to the east. This project consists of levees, drainage borrow canals, parallel access roads for levee maintenance, pump stations, tidal exchange structures, and concrete floodwalls (T-Walls) at multiple locations.
08/12-01/20	**Upper Barataria Risk Reduction (UBRR), Lafourche Basin Levee District, LA.** Project Manager responsible for coordination with the design team and regulatory agencies; design of the segment of the project (Segment 1, 2 4 & 5). The details of the project are: The Upper Barataria Risk Reduction project provides continuous hurricane and storm damage risk reduction from LA Hwy 308 in Lafourche Parish to the Davis Pond Freshwater Diversion West Guide Levee in St. Charles Parish, affording risk reduction benefits for the six parishes in the project area, including Ascension, Assumption, Lafourche, St. Charles, St. James, and St. John the Baptist. The UBRR project includes the construction and enlargement of approximately 33 miles of hurricane risk reduction between LA Hwy 308 on the western end and the Davis Pond Diversion West Guide Levee on the eastern end. The project includes earthen levees, a 270' steel barge swing gate floodgate in Bayou Des Allemonds, a steel roller gate across LA Hwy 306, tidal interchange structures, concrete T-wall floodwalls, and pump station frontal protection.
08/12-01/20	**Breaux Ditch Improvements - Jefferson Parish, LA.** Project Manager responsible for civil design and preparation of the drawings to replace the existing ditch with 8' wide x 4' deep reinforced concrete flume between East Ames Blvd. and Leo Kerner Pkwy. on the West bank of Jefferson Parish to provide improved maintenance and stability. The total project length is approximately 1500 feet



Firm	Vectura Consulting Services, LLC		
Name	Laurence Lambert, PE, PTOE, PTP	Years of Relevant Experience with this Employer	6
Title	Traffic Engineering	Years of Relevant Experience with Other Employer(s)	18

Degree(s)/Years/Specialization			BS/1997/Civil Engineering MS/2006/Civil Engineering (Transportation focus) MBA/2010
Active Registration Number/State/Expiration Date			PE.0029901/LA/3.31.24
Year Registered	2001	Discipline	Civil
Contract Role(s)/Brief Description of Responsibilities			**Traffic Engineering**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
02/21-03/21	**H.013256.5 I-10 ITS Scott to Lake Charles (Southwest Louisiana).** Laurence was the lead traffic engineer for a Level 2 Traffic Management Plan (TMP) for the construction of ITS equipment along I-10. The plan included a safety strategy that included a CAT Scan, LOS determination utilizing Citrix data, lane closure recommendations based on a queue analysis and public information strategies.
04/18-12/21	**H.010960.5 LA 30 Roundabouts at Tanger & I-10 Gonzales (Ascension, LA).** Laurence provided a Quality Control review of the temporary construction and sequence of construction plans. Vectura also provided Quality Control review of signing and striping plans at 30% and 60% plan sets to ensure the roundabouts conformed to the Pavement Markings Details Sheet PM-09 and the Manual on Uniform Traffic Control Devices (MUTCD) details on roundabouts.
10/17-10/18	**H.013025 LA 182 (University Avenue) Corridor Planning Study (Lafayette, LA).** Laurence was the lead transportation engineer for a Corridor Planning Study for LA 182. The scope focused on improving safety and mobility for pedestrian, bicycle, and transit users. Laurence collected AM & PM peak vehicle turning movement counts as well as pedestrian and bicycle counts. Laurence coordinated with the Acadiana Planning Commission to develop growth rates and design year volumes. Laurence then performed Highway Capacity Manual analysis for 5 intersections along the intersection analyses for the signalized and roundabout controlled alternatives. Included in the study was a safety analyses of five intersections and the intermediate segments. Based on the results of the safety analysis, Laurence provided design criteria to the design team for improving safety of pedestrians, bicycles, and vehicles.
03/18-06/18	**H.006474.1 Shreveport Immediate ITS Phase 2b (Shreveport, LA).** Laurence was the task leader for Procurement and Alternative Analysis Configuration portions of the Systems Engineering Analysis (SEA) that complied with Code of Federal Regulations Title 23, 940.11). The Procurement task consisted of investigating the methods of procurement for the deployment project where the procurement options for the pros and cons for each method were documented. The Alternatives Analysis Configuration consisted of analyzing three possible project configurations where the pros and cons of the needed equipment and communication options were documented.

09/16-04/17	**H.004957.5 I-12 To Bush - LA 3241 (I-12 – LA 36) Corridor Study (St. Tammany Parish, LA).** Laurence was the lead traffic engineer for a DOTD traffic study for the new LA 3241 alignment with the purpose of obtaining both existing and projected future traffic variables in accordance with standard operating procedures typically performed in these types of analyses. Laurence worked closely with the NORPC and District 62 to develop design year volumes using data the TransCAD model. The traffic study examined concepts that improved the safety and efficiency of the roadway consistent with the latest DOTD policies related to access management. Laurence, along with Brin, collected 7-day, 24-hour counts w/ classification on mainlines, turning movement counts for morning and evening peak periods and speed data for mainlines. Laurence also developed a VISSIM traffic simulation model of the preferred alternative.
04/11-09/11	**SPN 424-04-0032 US 90 at Louisiana 85 Design-Build Maintenance of Traffic Plan (Iberia Parish, LA).** Laurence developed a Maintenance of Traffic plan that accommodated the bridge and road widening, but also maintain passage of large trucks and freight through the heavily travelled corridor crucial for agricultural goods and farming. Laurence was the Lead Traffic Engineer for one of the first design-build projects undertaken by DOTD, which included the construction of a grade separated, diamond interchange to replace the existing US 90 intersections with Louisiana 85 in Iberia Parish to upgrade this future I-49 corridor to interstate standards.
06/10-10/10	**SPN 454-02-0071 I-12 Widening Design-Build Amite River Bridge to Juban Road Maintenance of Traffic Plan (Livingston Parish, LA).** Laurence was responsible for designing a Maintenance of Traffic plan that would keep drivers informed of real time traffic situations through a comprehensive traffic management system. Four lanes (two lanes in each direction) were to remain open during peak travel times throughout the length of the project. Temporary lane closures only occurred at night.
04/07-12/07	**SPN 737-99-0799 Baton Rouge to New Orleans ITS-TIM Phase 1 Design Build Project (Jefferson and St. John the Baptist Parishes).** Laurence was the project manager for an ITS Design-Build project, where Laurence represented the DOTD ITS Section. Laurence was responsible for developing a Systems Engineering Analysis that was used to solicit proposals from Design-Build teams. Laurence also assisted the DOTD ITS Section with the development of the Scope of Services Package (SOSP) that was used during the procurement process.
09/06-09/07	**EBR 06-CS-HC-00012 Downtown Baton Rouge Signal Project (Baton Rouge).** Laurence was the Project Manager to develop construction plans to upgrade 29 signals in downtown Baton Rouge as part of the EBR Green Light Plan. He coordinated numerous utility conflicts during construction since current utility plans were not readily available in an old part of town. He made several signal pole foundation location adjustments based on numerous field visits with utility companies.

Firm	Vectura Consulting Services, LLC		
Name	Brin Ferlito, PE, PTOE	Years of Relevant Experience with this Employer	6
Title	Traffic Engineering	Years of Relevant Experience with Other Employer(s)	27

Degree(s)/Years/Specialization			BS/1988/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0025383/LA 9.30.23
Year Registered	1993	Discipline	Civil
Contract Role(s)/Brief Description of Responsibilities			**Traffic Engineering**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
07/19-Ongoing	**H.004791 DOTD Belle Chasse Bridge & Tunnel Replacement PPP (Belle Chasse, LA).** Brin is the project manager for the temporary and permanent traffic signal plans for the intersections of LA 23 at Burmaster St and at Engineers Rd. She based her traffic signal plans on design year volumes that were developed using growth rates from the New Orleans Regional Planning Commission Travel Demand Model. This project is the first ever Public-Private-Partnership performed by Louisiana DOTD. She coordinated the detour plans based on the sequence of construction as part of the Level 2 Transportation Management Plan (TMP).
02/20-11/21	**H.010616 DOTD I:20 LA 544 Overpass Replacement (Ruston, LA)**. Brin is the project manager for the Transportation Management Plan (TMP) as part of a design for a bridge replacement and three roundabouts in Ruston, LA. The TMP was a Level 2 and included evaluation of 10 Sequence of Construction Phases. Detours included rerouting traffic to other interchanges at nighttime only, rerouting traffic from I-20 to the off ramp and on ramp at nighttime only, and rerouting traffic to service roads in vicinity of the project. Brin coordinated the queue analysis with DOTD to determine when lane closures would be allowed utilizing 24-hour tube counts. She will also coordinate the development of temporary traffic signal plans for this project as well.
07/18-04/19	**LA 1 Pedestrian Crosswalk Study and Traffic/Pedestrian Signal Design West Baton Rouge Parish, Addis, LA.** Brin developed a Pedestrian Crosswalk Study and Traffic Signal Construction Plans for the intersection of LA 1 at LA 990 in Addis, LA. The study was based on DOTD Traffic Engineering Manual Crosswalk Guidelines followed by traffic signal design plans based on DOTD requirements. The study included traffic and pedestrian traffic data collection, a speed study, crash analyses, intersection analyses and progression analyses. The signal plans included pedestrian signal equipment, signal timing parameter calculations, crosswalk striping, signs, DOTD pay items, estimated quantities, and construction cost. Brin also assisted with the Parish with the DOTD Permit Request for Intersection Control Devices on a State Right-of-way.
09/16-04/17	H**.004957.5 I-12 To Bush - LA 3241 (I-12 – LA 36) Corridor Study (St. Tammany Parish, LA).** Brin was the project manager of a formal DOTD traffic study for the new alignment of LA 3241 with the purpose of obtaining both existing and projected future traffic variables in accordance with standard operating procedures typically performed in these types of analyses. The traffic study included alternative analyses to improve the safety and efficiency of the roadway consistent with the latest DOTD policies related to access management and complete streets. Specific access management features examined included intersection improvements, median openings, and U-turns, spacing and type of openings, signalization of intersections and roundabouts. Brin developed the safety analyses report for the project

08/12-05/13	**H.009998 LA 935 Safety/Stage 0 Study (Ascension Parish, LA).** Brin developed the safety analyses report for the Stage 0 Study. She coordinated and collected existing traffic data using Jamar equipment. She used HCS and Interactive Highway Safety Design Model (IHSDM) Software for the analyses. She developed MicroStation drawings with scaled aerials to show crash diagram locations as well as proposed alternate layouts. Histograms developed in Excel were used to show the comparison of various crash conditions with statewide averages. Crash records for 3 years were obtained from crash1 database.
06/02-04/04	**SPN 737-94-0030 Shreveport ITS Near-Term Phase 3A (Shreveport, LA).** Brin developed the construction plans for the design of ITS equipment on a 22 mile stretch of I-220 in Shreveport, LA. The project included 36 closed circuit television cameras, 5 dynamic message signs, and 143 radar vehicle detectors. Project included plan preparation of communications diagrams, fiber optic allocation diagrams, fiber optic termination diagrams, telecommunication facilities, power services, wireless transmitters and receivers, related conduit and end equipment, general notes, special details, estimated construction cost and terrain analyses.
06/01-08/03	**SPN 737-94-0028 Shreveport ITS Near-Term Phase 1 (Shreveport, LA).** Brin designed ITS equipment construction plans for a 10 mile stretch of I-20 in Shreveport, LA. Equipment included 17 Video cameras, 8 Dynamic Message Signs and 66 radar counters. This project included plan preparation of communications diagrams, fiber optic allocation diagrams, fiber optic termination diagrams, telecommunication facilities, power services, wireless transmitters and receivers, related conduit and end equipment, general notes, special details, estimated construction cost and terrain analyses.

Firm	Vectura Consulting Services, LLC		
Name	Prasanth Malisetty, PE, PTOE, PTP, RSP1	Years of Relevant Experience with this Employer	1
Title	Traffic Engineering	Years of Relevant Experience with Other Employer(s)	17

Degree(s) / Years / Specialization			BS/2003/Civil Engineering MS/2004/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0035792/LA /3.31.23
Year Registered	1993	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Traffic Engineering**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
09/20-12/21	**H.011909.5-4 Roundabout: US 171 at Boone St. (Vernon Parish), LA.** Prasanth was the lead design engineering for temporary signal design associated with the sequence of construction for the roundabout at US 171 at Boone St.
09/20-12/21	**H.010960.5 LA 30 Roundabouts at Tanger I-10 (Ascension Parish), LA.** Prasanth was the lead design engineering to produce the temporary signal design associated with the sequence of construction for the roundabouts on LA 30 in Gonzales, LA. This project consists of eight proposed construction phases.
01/21-05/21	**H.013256 - I-10 ITS Scott to Lake Charles (Lafayette, Acadia, and Jefferson Davis Parishes, LA.** Prasanth and Reece were responsible for measuring anticipated construction quantities and producing a cost estimate for fifteen sites along I-10 where CCTV cameras were being installed by using DOTD's Bid Tabulation and Cost Estimating Tool.
12/18-07/20	**H.002297 LA 37 Sullivan Road to Liberty Road, Baton Rouge, LA.** Prasanth was the project manager to develop feasible roadway improvement that will improve operation and increase safety along the LA 37 corridor. The project included data collection, development of growth rates, existing and future traffic analyses. Prasanth was responsible for traffic forecasting for no-build and future alternatives using the CRPC travel demand models. Also, performed the existing and future traffic analysis and propose potential alternatives to mitigate existing deficiencies.
11/17-12/18	**H.013264 District 08 Safety Investment Plan, LA.** Prasanth was the project engineer responsible for preforming districtwide safety analysis and preliminary engineering studies for various locations considered high potential for safety improvements. Responsible for evaluating crash statistics to identify possible roadway issues by using appropriate safety analysis tools and recommend potential operation safety countermeasures. Developed Countermeasure Evaluation Tool (CET) tool which aid in determining total crash reduction for each proposed countermeasure with associated cost savings and perform benefit / cost analysis.

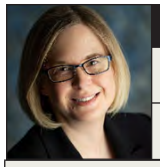
08/10-02/18	**DOTD Traffic Engineering Contracts, Statewide, LA.** As a project engineer for numerous task orders for Signal Timing Studies and Designs, Prasanth was responsible for coordinating data collection tasks, intersection analysis, crash analysis, developing coordinated signal timing plans and field implementation / fine tuning along 27 corridors throughout statewide which involved 264 intersections. Following are the list of corridors. ▶ PennDOT, "Bridge Safety Inspection Course" (FHWA/NHI-approved 130055 equivalent) – 2/2/2004 ▶ District 04; LA 1, LA 526 & US 171, Shreveport, LA; LA 3, LA 3105 & LA 72, Bossier, LA – 110 intersections, 7 corridors ▶ District 02; LA 3040 & LA 57, Houma, LA; LA 20, Thibodaux, LA; US 61, New Orleans, LA – 44 intersections, 4 corridors ▶ District 62; US 11, Slidell, LA; LA 19, Baker, LA; LA 44, Gonzales, LA; LA 3124 & LA 60, Bogalusa, LA; LA 10 Franklinton, LA; LA 16, Amite, LA; LA 38, Kentwood, LA; LA 25, Folsom, LA – 68 intersections, 9 corridors ▶ District 58; US 425, Vidalia & Ferriday, LA – 11 intersections, 2 corridors ▶ District 08; LA 1208-03, US 71 & LA 28 – 21 intersections, 3 corridors ▶ District 07; US 190 & US 171, DeRidder, LA – 10 intersections, 2 corridors

Firm	AECOM Technical Services, Inc.		
Name	Daniel Helms, PE, PTOE, RSP_{21}	Years of Relevant Experience with this Employer	2
Title	Maintenance of Traffic/TMP	Years of Relevant Experience with Other Employer(s)	19

Degree(s)/Years/Specialization			BSCE/1998/Civil Engineering MSCE/2003/Civil Engineering (Transportation)
Active Registration Number/State/Expiration Date			PE.0042486/LA/9.30.22
Year Registered	2018	Discipline	Civil Engineer
Contract Role(s)/Brief Description of Responsibilities			**Maintenance of Traffic/TMP**. Daniel has spent much of his career working on traffic, roadway, and safety projects for both public agencies and consulting companies and is knowledgeable in the Louisiana Department of Transportation and Development's (LADOTD's) Traffic Engineering Process and Report (TEPR), the Highway Safety Manual, the AASHTO Green Book. He will use this expertise to Lead all Traffic related tasks, including the review of traffic and crash data, development of a Transportation Management Plan (TMP) and construction signing/maintenance of traffic plans.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
05/20-Ongoing	**FM 518 Corridor Improvements; TxDOT, League City, TX.** Engineer of record for a signal design project for a series of traffic signals on a major urban corridor in League City, Texas. The project involved upgrading three traffic signals, including implementing a temporary signal. At one of the intersections, Daniel made design adjustments to eliminate the need for additional temporary signals. He is responsible for the design, development and summarization of quantities, general notes, traffic signal notes, and the engineer's estimate of probable cost. Daniel works with junior staff, along with staff of the prime consultant, to coordinate traffic signal improvements.
05/20-08/20	**FM 2090 at Tram Road; TxDOT, Splendora, TX.** As the Deputy Project Manager, Daniel worked with Junior Staff to develop traffic signal plans, for an isolated intersection near Metro Houston to install a traffic signal. Responsible for design of the traffic signal and striping plan, development and summarization of quantities, general notes, traffic signal notes, and signing and stamping of plans. He coordinated with the Prime Consultant to respond to comments from TxDOT.
02/20-Ongoing	**MOVEBR Jones Creek Road Extension, Segments 1A and 1B, City-Parish of East Baton Rouge, LA.** Traffic Task Lead for a roadway project, extending a suburban arterial from its current terminus at Tiger Bend Road to Airline Highway. Daniel is responsibilities include developing the traffic analysis, looking alternatives, adding signalized intersections, roundabouts, and alternative intersections. This project includes following LADOTD's Traffic Engineering Process and Report, coordinating analysis work with the City-Parish and LADOTD. He also leads the development of Appendix C – Existing Safety Analysis, which utilizes the CATScan tool.
02/20-07/20	**Bechtel, Port Arthur Liquefaction Project Transportation Management Plan, Port Arthur, TX.** Lead Traffic Engineer for the update of a Transportation Management Plan for the development of a Liquified Natural Gas Plant, near Port Arthur, Texas. The TMP analyzed the impacts to the road network of plant, including the influx of construction of workers and overland material deliveries to build the facility, and mitigate any impact to local road users.

02/19-01/20	**LADOTD, Barksdale Interchange Design-Build, Bossier City, LA.** Senior Transportation Engineer for a project to construct a new controlled access roadway, connecting at the I-20, I-220 interchange in northwest Louisiana. Daniel was responsible for: the development of the signing plans, including overhead and ground mounted signs, detour plans development of and providing quality control for the project's IMR, the Transportation Management Plan. The project required coordination and collaboration with state, federal and military stakeholders.
02/18-01/20	**LADOTD, I-20 Transportation Management Plan and Travel Assessment Shreveport and Bossier City, LA.** Project Manager for the I-20 Transportation Management Plan and Travel Assessment study, which involved LADOTD's first mesoscopic model. Responsibilities include the development of a Level 4 Transportation Management Plan (TMP) of the I-20 corridor. The elements for the plan require the review of alternate routes through the development of a mesoscopic simulation model, public information strategies, stakeholder involvement, ITS implementation, queuing analysis, and crash analysis. The TMP will analyze the impacts to the road networks of Shreveport and Bossier City, Louisiana, where an interstate pavement rehabilitation project is planned.
06/19-01/20	**I-59 Rubblization Project MDOT. Mississippi DOT, Forrest and Jones Counties, MS.** As the Project Manager, Daniel provided a key link between the project design team and the staff with MDOT. He provided guidance into the design and plan requirements, along with assisting in the project management responsibilities (financial tracking, required deliverables). The project required the development of roadway plans, ITS plans, signing plans, pavement marking plans, and a complex maintenance of traffic and construction sequencing plan to keep two (2) lanes open in each direction for potential hurricane evacuation.
06/07-12/17	**Traffic Safety Engineering Manager. Mississippi Department of Transportation, Statewide.** Day to day manager of the traffic safety engineering program. He performed site review, crash data analysis, benefit-to-cost analysis, countermeasure development and selection, design contract scope development and contract review, and design project management, including design and plan review. He managed all HSIP design projects, which included the review of roadway geometry, signing plans (permanent and temporary – construction), maintenance of traffic and construction sequencing plans.
10/04-06/07	**MDOT, Design Engineer, Roadway Design Division, Various Locations, MS.** Design team member, and eventually a design team leader. Responsibilities included working on design projects, ranging from bridge replacements to major roadway widening, know and able to implement AASHTO and MDOT Design Guidelines, participating and Field Inspection and Office Review meetings, and developing, reviewing, and finalizing final right-of-way (Phase A) and construction (Phase B) plans. This included construction signing plans, construction sequencing, and maintenance of traffic plans.
	US 49 Myers Creek Bridge Replacement Project; Forrest County, MS. This project required the development of construction plans to replace two deficient bridges on US 49 south of Hattiesburg. Daniel developed vertical profiles for the new bridge alignments along with a complex traffic control and construction sequencing plan that allowed both northbound and southbound traffic to use the same temporary bridge without the need for reconstruction due to differences in vertical elevations. He calculated all necessary quantities for the roadway portion of the project.
	SR 182 Bridge Replacement Project; Lowndes County, MS. This project required the development of construction plans to replace a deficient bridge with a box culvert on SR 182, east of Columbus, MS. Daniel developed the profile and alignment for an on-site detour. He was responsible for the development of a maintenance of traffic, construction sequencing and construction signing plan, as well. He calculated all necessary quantities for the roadway portion of the project.

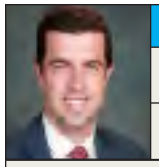


Firm	AECOM Technical Services, Inc.		
Name	Audra Rodgers, PE	Years of Relevant Experience with this Employer	9
Title	Railroad Coordination	Years of Relevant Experience with Other Employer(s)	8

Degree(s)/Years/Specialization			BS/2002/Civil Engineering MS/2003/Civil Engineering
Active Registration Number/State/Expiration Date			130275/TX/3.31.2023
Year Registered	2018	Discipline	Civil Engineer
Active Registration Number/State/Expiration Date			E-12245/NE/12.31.2022
Year Registered	2017	Discipline	Civil Engineer
Contract Role(s)/Brief Description of Responsibilities			**Railroad Coordination**. Audra has 18 years of experience in the structural and bridge industry as both a Project Engineer and Project Manager on numerous projects. She has experience in precast concrete fabrication, construction observation, structural assessment and inspection, cellular tower analysis, railroad and highway bridge design and commercial structural engineering. Audra is proficient with computer aided design and drawing tools and is also well versed in bridge survey technical abilities in the field. She has performed public project reviews for both BNSF and UPRR for over 16 years.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
01/15-07/15	**KCS Br. VD34.2 Vicksburg Subdivision, Delhi, LA.** Project Manager and Engineer for the design of precast concrete double box beam spans replacing an existing timber trestle spans on a bridge near Delhi, Louisiana. The main TPG spans were not replaced.
07/15-12/15	**KCS Br. L801.8 New Orleans Subdivision, Baton Rouge, LA.** Project Manager and Engineer for the design of a multi-span precast concrete double box beam bridge replacing an existing 40-span timber trestle bridge near Baton Rouge, Louisiana. H&H analysis and survey services were also provided. The bridge was shortened at one end by filling spans. A golf course path and bridge runs under the railroad bridge and had to be considered in the design.
07/15-07/16	**KCS Br. K646.5 Beaumont Subdivision, LA.** Project Manager and Engineer for the design of a multi-span precast concrete double box beam bridge replacing an existing 66-span timber trestle bridge near Florien, Louisiana. The flood elevation was within the existing bridge depth, requiring the bridge to be raised. Special consideration was given to keeping the bridge open as much as possible during staged construction. The alignment of the track was shifted so that the new bridge could be built adjacent to the existing bridge.
07/16-01/17	**Mississippi Department of Transportation (MDOT) US 84 over Mississippi River Bridges Fracture Critical and Element Inspections, MS.** Inspection Team Leader. MDOT needed Fracture Critical and Routine Element Inspections of both the Eastbound and Westbound Bridges on US 84 over the Mississippi River. Landon acted as Deputy Project Manager and Inspection Team Leader on the project, and prepared the final inspection report.

2017	**72nd Street Bridge Replacement, Omaha, NE.** Project Coordinator in charge of all railroad coordination with Union Pacific Railroad (UPRR) for the 72nd Street Bridge Replacement Project for the City of Omaha. The bridge is an overpass structure over UPRR tracks. Ms. Rodgers is responsible to negotiating the project through railroad reviews and approvals.
2015-Ongoing	**West Dallas Gateway Project, West Dallas, TX.** Bridge Lead, Lead Project Engineer in charge of the design of three railroad underpass grade separation bridges. The grade separations will allow for Bataan Street, Amonette Street, and Herbert Street to pass under the existing UPRR tracks, which currently separate the two areas of the City. The bridges will be built in phases, with the north half of the bridge being built first while the tracks are shifted to the south and the south half of the bridge built when the tracks are shifted onto the new north bridge. This minimizes the time that the UPRR tracks are out of service on a busy section of track.
2015-Ongoing	**Springfield Rail Improvement Project, Springfield, IL.** Bridge Review Lead, Lead Project Engineer in charge of the review of the design plans, design calculations, specifications, geotechnical reports and drainage reports on behalf of UPRR for ten underpass structures for the Springfield Rail Improvement Project. Underpass bridges include bridges over Carpenter St., Ash St., Laurel Ave., 5th St., 6th St., Cook St., S Grand Ave., Madison St., Jefferson St., and N Grand Ave. Bridges consist of steel beam or deck plate girder spans with steel deck and drilled shaft substructures. The project includes construction submittal review and some construction observation.
2019-2021	**Union Pacific Railroad Annual Bridge Replacement Program, Various Locations.** Layout, design, and coordination on multiple bridge replacements of timber structures on the UPRR system. Bridges were replaced with either new standard precast concrete spans on pile bents or pipe culverts.
2009-2010	**Wellborn Road, College Station, TX.** Project Engineer for the design of two double span railroad bridges on the Texas A&M campus over Wellborn Road. The superstructure consisted of steel beam spans. The substructure consisted of drilled shafts, some with tension ties utilized to minimize deflection due to expansive soils.
2009-2010	**Westrail By-Pass, Brownsville, TX.** Project Engineer for the design of a multi-span, over 1000 ft. long railroad bridge over the Rio Grande River in Brownsville, Texas. The superstructure consisted of precast concrete box, steel beam, and through plate girder spans. The substructure included pipe piles and drilled shafts. Homeland security requirements were essential considering half of the bridge is located in Mexico.

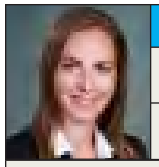


Firm	Ardaman & Associates, Inc.		
Name	Robert Jewell, PE	Years of Relevant Experience with this Employer	15
Title	Geotech Task Leader	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/2009/Civil Engineering
Active Registration Number/State/Expiration Date			PE.38579/LA/9.30.22 Advanced Level PDA Certification Traffic Control Supervisor Certification
Year Registered	2013	Discipline	Geotechnical Engineering
Contract Role(s)/Brief Description of Responsibilities			**Geotech Task Leader**. Robert serves as the manager of our Baton Rouge office and as project manager for various geotechnical engineering projects including pile and drilled shaft foundations, shallow foundations, static and dynamic pile testing, and slope stability. He has coordinated many geotechnical field investigations, including shallow and deep borings, ECPT soundings, and performed analyses and prepares design recommendation reports. For two years, he served as an on-site engineer for the LA Hwy. 1, Phase 1 project, where he conducted PDA testing and pile monitoring during construction.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
2018-2021	**Chef Menteur Pass Bridge & Approach, Orleans Parish, LA SP No. H.000263.5-1** Project Engineer. Planned the geotechnical investigation scope, oversaw the field and laboratory testing. Provide quality control on the test results of soil borings, cone penetration soundings (CPT) and laboratory testing.
2018-Ongoing	**I-220/I-20 Interchange Improvement and Barksdale Air Force Base Access Road, Bossier Parish, SP No. H.003370.** Project Engineer. Helped prepare the preliminary design and planning report for this Design Build project consisting 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.
07/15-Ongoing	**I-49 Connector (Lafayette Regional Airport to I-10/I-49/US 167 Interchange), Lafayette Parish, LA, SP No. H.004273.5.** Project Manager. Managing the geotechnical investigation and design for the construction of 5 miles of freeway consisting of a 3.5-mile elevated structure that will include pile supported approach slabs, pile foundations, slope stability, embankment settlement, advanced load test programs, and earth retaining structures. Overseeing and coordinating the field and laboratory program which will include a total of more than 400 borings including deep borings, shallow borings, and ECPT soundings. Geotechnical engineering analyses and design recommendations report will be developed for this project.
11/15-Ongoing	**McArthur Interchange Completion Phase II, US 90-Z, Jefferson Parish, LADOTD SP No. H.011309.** Project Manager. Project consists of bridge design that includes deep borings, laboratory testing, subsurface characterization and engineering analyses to provide foundation design recommendations, verification of test plans and construction monitoring plans. Design recommendations included deep foundations in the form of post grouted drilled shafts.

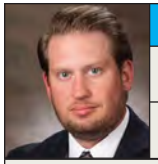
2015-Ongoing	**Pecue Lane I-10 Interchange I-10, East Baton Rouge, SP No. H.013579.** Project Engineer. This interchange consists of twin bridges with MSE wall abutments for both bridges crossing Interstate I-10 in south Baton Rouge. The end bends are supported on 20+ feet MSW walls. The estimated consolidation from the embankment fill is 2 to 4 inches. The settlement will cause down drag on the end bent piles. Analysis for the project included 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.
04/14-Ongoing	**I-12 to Bush Segment 2, LA 3241 (LA 36 – LA 435), St. Tammany Parish, LA, SP No. H.004435.** Project Engineer. 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.
10/11-04/13	**I-10 Veterans Blvd. to Clearview Parkway Construction Phase Services (Transcontinental Overpass), SP H.003064.** Project Engineer. Managed the test pile program (static and dynamic testing) oversight and conducted WEAP analysis of Pile Driving Equipment. Ardaman staff performed the dynamic testing with Pile Driving Analyzer (PDA) and observed static load testing. Also provided pile order length recommendations, pile driving criteria, and reviewed pile driving logs.
2009-2011	**LA 1 – Phase 1, Lafourche Parish, LA, SP No. 700-29-0112.** Assistant Project Engineer. Served in the field as on-site geotechnical engineer during construction for this long-term project in southeast Louisiana. His project experience consisted of conducting dynamic monitoring using the Pile Driving Analyzer, performing CAPWAP analyses, reviewing drive logs, and supervising field technicians.

	Firm	Ardaman & Associates, Inc.		
	Name	Megan Bourgeois, PE	Years of Relevant Experience with this Employer	16
	Title	Geotechnical	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/2006/Civil Engineering
Active Registration Number/State/Expiration Date			PE.36725/LA/3.31.24 Traffic Control Supervisor Certification/LA/Exp. 9.21.2024 Traffic Control Technician/LA/Exp. 5.18.2024 DOTD Flagger/LA/8.8.2024
Year Registered	2011	Discipline	Geotechnical Engineering
Contract Role(s)/Brief Description of Responsibilities			**Geotechnical**. Megan has more than 13 years of experience with shallow foundations, embankment settlement, pile and drilled shaft foundations, LRFD pile and shaft design, slope stability (embankment and excavation), pipeline and pump station recommendations, pavement recommendations, geotechnical instrumentation and construction monitoring. She has managed geotechnical engineering investigations and design evaluations, managed laboratory testing programs, while also serving as Ardaman's program manager for many LADOTD projects for bridges and roadways throughout Louisiana. She also serves as the director of our geotechnical engineering laboratory in Baton Rouge. In this role, she supervises the laboratory manager, oversees testing and provides guidance to laboratory staff, ensures appropriate protocol is followed and deadlines are met. **Megan meets MPR 9.**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
2015-Ongoing	**Pecue Lane I-10 Interchange I-10, East Baton Rouge, SP No. H.013579.** Project Manager. Managing all aspects of the project from field investigations, laboratory testing program, and engineering design. This interchange consists of twin bridges with MSE wall abutments for both bridges crossing Interstate I-10 in south Baton Rouge. The end bends are supported on 20+ feet MSW walls. The estimated consolidation from the embankment fill is 2 to 4 inches. The settlement will cause down drag on the end bent piles. Analysis for the project included 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, SP No. H.004273.5.** Laboratory Director/Project Engineer. Involved in the geotechnical investigation and design for the construction of 5 miles of freeway consisting of a 3.5-mile elevated structure that will include pile supported approach slabs, pile foundations, slope stability, embankment settlement, advanced load test programs, and earth retaining structures. Overseeing laboratory program which will include a total of more than 400 borings including deep borings, shallow borings, and ECPT soundings. Geotechnical engineering analyses and design recommendations report will be developed for this project.

09/15-11/15	**Tarbutton Road Interchange & I-20 Frontage Roads Bridge Redesign, City of Ruston, SP No. H.003298.** Project Manager. Bridge redesign project included review of existing geotechnical data for use in design analyses, drilled shaft foundation design, supervised slope stability analyses for the approach embankment and developed settlement monitoring plans with recommendations for implementation prior to abutment construction as well as drilled shaft monitoring/cross-hole sonic logging recommendations. Final report will include geotechnical design recommendations.
2014	**Jones Creek Bridge & Knox Branch Bridge, City of Baton Rouge, Oneal Lane, Baton Rouge, LA.** Ms. Bourgeois managed the project that consisted of engineering analyses and design recommendations (24-inch square pre-cast, pre-stressed concrete piles)relative to driven piles for two bridge locations.
2006-2011	**LA 1 – Phase 1 & 2, Lafourche Parish, LA, SP Nos. 700-29-0112 & 700-29-0130.** Project Engineer/Laboratory Director. This project is the second phase of the 17-mile elevated highway spanning from Golden Meadow to Fourchon. Directed the lab testing program to ensure strict adherence to LADOTD standards and managed the drilling operations which included deep borings and ECPT soundings in the coastal marshes via airboat mounted equipment. Provided geotechnical engineering through development of more than 70 soil boring logs and approximately 300 ECPT sounding logs for use in design of driven pile foundations.
2009-2013	**I-20 Mississippi River Bridge Review, Vicksburg, MS, SP No. H.004646.5.** Project Manager. Managed a compre-hensive laboratory testing program and was involved in refining the geotechnical site characterization for the bank/bluff where there is evidence of shifting creating movement in the bridge structure. Served as project engineer and performed seepage and drawdown analyses, slope stability analyses, evaluation of remedial measures, and development of technically feasible solutions. Co-authored the draft and final geotechnical analysis and design report.
2008-2013	**I-49 North, Phase II, Caddo Parish, LA., SP Nos. 700-09-0166 & H.003886.5.** Laboratory Director/Assistant Project Engineer. Closely coordinated an extensive laboratory testing program with an aggressive schedule to provide geotech-nical characterization data for use in design of deep foundations, earth retaining structures and culverts.



Firm	Ardaman & Associates, Inc.		
Name	Robert Rousset, PE	Years of Relevant Experience with this Employer	16
Title	Geotechnical	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/2008/Civil Engineering
Active Registration Number/State/Expiration Date			PE.38637/LA/9.30.22 Intermediate Level PDA Certification
Year Registered	2008	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Geotechnical**. Robert serves as the manager of Ardaman's New Orleans office and as project manager for various geotechnical engineering projects as well as contract administrator of several major contracts. He has managed projects that have included pile and drilled shaft foundations, shallow foundations, static and dynamic pile testing, and slope stability. Robert also achieved Intermediate Level Certification issued by the Pile Driving Contractors Association for Dynamic Measurement and Analysis Proficiency.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
2018-Ongoing	**Mid Barataria Sediment Diversion CMAR, Plaquemines Parish, LA, BA-153.** Project Manager. Mr. Rousset serves in the role of Project Manager for this CMAR project that includes the construction of a new Sediment Diversion Structure located in Plaquemines Parish, Louisiana, along the west bank of the Mississippi River, just north of Ironton and south of the Phillips 66 Alliance Refinery, near Mississippi River Mile 61. Ardaman will work together with the selected CMAR contractor, Archer Western – Alberici, to provide investigations, laboratory testing, instrumentation installations, and geotechnical engineering consulting services during design and construction phases of this project. The diversion structure will include an intake structure, a new Hwy. 23 bridge over the diversion, guide levee system, and outfall transition feature.
2016-2017	**I-12 (US 190 to LA 59), St. Tammany Parish, LA, SP No H.004113.** Project Manager. Oversaw and coordinated the geotechnical investigation which included approximately 23 deep soil borings and associated laboratory testing along an alignment that included 4 bridges.
07/14-2015	**I-12 to BUSH Segment 3, LA. HWY. 3241 (LA 435 to LA 40/LA 41), St. Tammany Parish, LA, SP No. H.004113.** Project Manager. Oversaw and coordinated the geotechnical investigation which included 26 deep and intermediate soil borings, sampling, and laboratory testing along the alignment that included one bridge, LA 435 over Talisheek Creek. Oversaw geotechnical analyses and preparation of design recommendation report which included pile supported approach slabs and pile foundations for the bridge structures and shallow foundation design for the culverts.
2012-2013	**Goose Bayou Bridge Route LA 45, Lafitte, LA, SP No. H.002260.5 Assistant.** Project Engineer. Managed geotechnical investigation for the bridge foundation that included drilling and laboratory testing of 2 deep borings and 4 ECPT soundings performed with barge-mounted drilling equipment under difficult access conditions. Provided signed and sealed, full size soil boring logs and ECPT sounding logs in LADOTD format.

2009-2011	**LA 1 – Phase 1, Lafourche Parish, LA, SP No. 700-29-0112.** Onsite Engineer. Served in the field as onsite engineer for Phase 1A of this long-term project in southeast Louisiana. The completed project consisted of 17 miles of elevated roadway with low-level bridges and medium-level bridges, two elevated interchanges, and two fixed high-level bridges over navigable waterways. Conducted dynamic monitoring using the PDA, performing CAPWAP analyses, reviewing drive logs, and supervising field technicians.
2010-2012	**I-49, Segment J, Caddo Parish, LA, SP No. H.003886.5.** Assistant Project Engineer. Mr. Rousset was responsible for setting up boring locations, coordinating field activities, assigning lab testing, reviewing laboratory test results, classifying soil types based on laboratory testing, and compiling soil boring logs in the LA DOTD format.
2009	**Central Thruway, East Baton Rouge Parish, LA Assistant.** Project Engineer. Performed PDA testing on pre-stressed, pre-cast concrete piles for several bridge locations.

Firm	Forte & Tablada, Inc.		
Name	Bradley Holleman, PLS, EI	Years of Relevant Experience with this Employer	1
Title	Survey - Title Work Task Leader	Years of Relevant Experience with Other Employer(s)	14

Degree(s)/Years/Specialization			BSCE/2009/Civil Engineering
Active Registration Number/State/Expiration Date			5082/LA/9.30.2022
Year Registered	2012	Discipline	Land Surveying
Contract Role(s)/Brief Description of Responsibilities			**Survey - Title Work Task Leader**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
05/12-09/12	**H.009456 – Tchefuncte River Bridge.** Surveyor-in-Charge for the topographic survey and existing drainage map. This project was for a bridge replacement over the Tchefuncte River in Tangipahoa Parish. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.
01/13-09/13	**H.009489 Jefferson Highway Overpass.** Surveyor-in-Charge for the bridge monitor survey, topographic survey and existing drainage map. This project was monitoring and the overpass replacement of Jefferson Highway over Airline Highway in East Baton Rouge Parish. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.
07/13-10/13	**I-12 to Bush Route La 3241 Survey Control.** Surveyor-in-Charge for setting the primary static control and digital levels for future phases of the project. This project was for the construction of a new connecting route from Interstate 12 to Bush Louisiana. The work consisted of setting deep rod monuments along the proposed route and conducting over 40 miles of digital levels between the deep rod monuments.
09/13-03/14	**H.002375 Amite River Bridge Near French Settlement.** Surveyor-in-Charge for the topographic survey, 3D laser scanning and existing drainage map. This project was for constructing a new bridge over Amite River in French Settlement Louisiana to the replace the existing swing bridge. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.
09/14-02/15	**H.011158 LA 3139.** Surveyor-in-Charge for the topographic survey, 3D laser scanning and existing drainage map. This project was for constructing a replacement span because of a damaged girder on the LA 3139 overpass over I-10. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.
12/14-03/16	**H.011137 & H.011152 I-12 (LA 21 to LA 59), St. Tammany Parish, LA.** Surveyor-in-Charge for the topographic survey, 3D laser scanning and existing drainage map. This project was for widening of Interstate 12 from LA 21 to La 59 in St. Tammany Parish. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.

09/15-11/15	**H.011923 Hooper Road Roundabout at Sullivan Road.** Surveyor-in-Charge for the topographic survey, 3D laser scanning and existing drainage map. This project was for construction of a roundabout at Hooper Road and Sullivan Road in East Baton Rouge Parish. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.
06/16-02/17	**H.000263 Chef Menteur Pass Bridge.** Surveyor-in-Charge for the topographic survey, 3D laser scanning and existing drainage map. This project was for the design of new bridge to replace the existing swing bridge on US 90 over Chef Menteur Pass. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.
03/17-03/18	**H004987 US 190 Collins Blvd, St. Tammany Parish, LA.** Surveyor-in-Charge for the topographic survey, 3D laser scanning and existing drainage map. This project was for the design of capacity improvements on US 190 in Covington. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.
05/18-11/18	**I-10: Loyola Interchange Improvements, Kenner, LA.** Surveyor-in-Charge for the control survey, utility survey and 3D mobile laser scanning. This project was for the design of new exit for the New Orleans Airport. The work consisted of completing a utility and control survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths that fell within the survey limits.
01/19-04/19	**H.012735 La 182 Barrow Street Bridge.** Surveyor-in-Charge for the topographic survey, 3D Mobile laser scanning and existing drainage map. This project was for the design of a new bridge on La 182 in Houma. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.
06/19-08/19	**H.004791 La 232 Belle Chasse Bridge.** Surveyor-in-Charge for the topographic survey and laser scanning. This project was additional work for the design of a bridge near the Belle Chasse Tunnel. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.
02/20-06/20	**H.000284 US 90 Pearl River Bridges.** Surveyor-in-Charge for the 3D Mobile laser scanning. This project was for the design of improvements to US 90 over Pearl River tributaries. The work consisted of completing mobile lidar scan and delivering a point cloud for DOTD use and extraction.
06/20-12/20	**4400017597 DOTD Rural Bridge Replacement.** Surveyor-in-Charge for the topographic survey. This project was for design of multiple bridge replacements throughout south Louisiana. The work consisted of completing a topographic survey, according to the LA DOTD Location and Survey Manual, including all utilities with depths and all drainage required along with finished floor elevations of all building that fall within the survey limits.

Firm	T. Baker Smith, LLC		
Name	Rene Hebert, PLS	Years of Relevant Experience with this Employer	14
Title	Survey - Title Work Task Leader/Property - Boundary	Years of Relevant Experience with Other Employer(s)	2

Degree(s)/Years/Specialization			BS/2008/Geomatics
Active Registration Number/State/Expiration Date			PLS.5070/LA/3.31.2024
Year Registered	2011	Discipline	Survey
Contract Role(s)/Brief Description of Responsibilities			**Survey - Title Work Task Leader/Property - Boundary**. As Survey Lead Professional, Rene has 16 years of project experience. He has served as Lead Professional of numerous survey projects where he has been responsible for overseeing and executing the technical aspect of surveying projects including producing and revising drawings, sketches, plans, etc. for contract documents and QC/QA of surveying services. He coordinates work among project technicians, field crew coordinator, field survey personnel, and other required professionals working on the project. Rene has gained valuable experience surveying the environment of south Louisiana including topographic, boundary and GPR surveys and underwater acoustic hydrographic surveys including multibeam, single beam, side scan sonar, acoustical soundings, magnetometry and other bathymetric surveys for industrial, government and private clients.

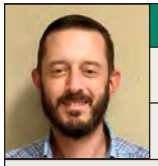
Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
10/14-02/15	**S.P. No. H.008149, Pier 1 Removal (Leeville Bridge), LA 1, Lafourche Parish (LADOTD.** Principal in Charge/Supervising Surveyor. Oversaw topographic control and underwater acoustic hydrographic surveys including multi beam bathymetric surveys to locate remaining pile structure and deliver sonar images of structure to LADOTD for US Coast Guard coordination of the pier removal at the Leeville Bridge
09/14-06/15	**S.P. No. H.001271, Cane River Bridge at Church Street, Route LA.** 1, Natchitoches Parish (LADOTD). Principal in Charge/ Supervising Surveyor. QAQC and supervising surveyor for topographic and underwater acoustic hydrographic surveys including multi beam, sub bottom profiler and magnetometer surveys of the existing swing span bridge and location of piers for the previous swing span bridge including data processing and deliverable preparation for the movable bridge replacement in downtown Natchitoches, LA. (2014)
09/11-10/11	**Canal Street Ferry Hydrographic Survey.** Survey Lead Professional. TBS Performed a hydrographic/bathymetric survey for the Canal Street Ferry Terminal Project.
07/18-08/19	**Port of New Orleans Napoleon & Nashville Wharves, Hydrographic Survey.** Lead Professional. Rene provided QA/QC services. TBS collected topographic survey data within the designated survey area. The designated survey area for phase 1A began 100' east of the existing loading ramp, then proceeded west to the eastern face of the Nashville B warehouse and from the riverside edge of the existing wharf to the centerline of the railroad track that ran along the land side of the warehouse loading dock.
01/12-03/12	**St. Bernard Port, Harbor and Terminal District Chalmette Slip Surveys, St. Bernard Port, Harbor and Terminal District St. Bernard Parish, LA.** Hydrographic Survey Project Manager. Performed underwater acoustic hydrographic surveys including multi-beam, side scan, magnetometry, and sub-bottom surveys in the Mississippi River in order to obtain detailed bottom conditions near the Chalmette Slip docking facility to recover damage heel-post turning dolphins and conduct other inspections.

Firm	Forte & Tablada, Inc.		
Name	Ross A. Wilson, PLS	Years of Relevant Experience with this Employer	10
Title	Topo Survey/Construction	Years of Relevant Experience with Other Employer(s)	2

Degree(s)/Years/Specialization			BS/2010/Geomatics
Active Registration Number/State/Expiration Date			PE.5148/LA/3.31.24
Year Registered	2015	Discipline	Land Surveying
Contract Role(s)/Brief Description of Responsibilities			**Topo Survey/Construction**

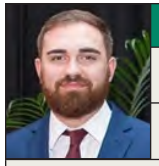
Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
04/21-06/21	**H.014628- LA 397: Turn Lanes at Rice Mill.** Surveyor responsible for topographic surveying at the intersection of LA 397 and Joe Spears Rd. in Calcasieu Parish.
8/19-Ongoing	**H.011670-I-10/Loyola Interchange Improvements- Kenner, LA.** Project Manager providing Topographic Survey, Right- of-Way Survey, and Drainage Survey. The project stretches from the levee in Kenner to the Williams Blvd. off ramp, as well as Loyola Avenue and portions of Veterans Blvd.
6/20-Ongoing	**H.013979, H.013995, H.013992, H.013994, H.013985, H.013954, H.013990.** Rural Bridge Replacement Initiative; 7 State Projects Numbers (22 Structures) in Districts 04, 05, 08 and 58 – Surveyor for topographic surveying of 22 bridges in Louisiana.
1/20-10/20	**H.012588, H.012169, H.012587 I-10: Atch Basin Br-W. Baton Rouge P/L, I-10: Iberville P/L-W End Miss Br, I-10: W End of Br 290-W End of LA 415- West Baton Rouge & Iberville Parishes.** Project Manager for complete topographic survey, approximately 18.3 miles, from the East end of the Atchafalaya Bridge to the West end of the I-10/LA 415 Interchange.
11/19-12/20	**H.012083- Calcasieu River Bridge Investigation, Calcasieu Parish, LA.** Surveyor to provide laser scanning services for the I-10/ Lake Calcasieu bridge in Lake Charles, LA. Terrestrial scans were done underneath the bridge for 10 spans on the East and West side, on top the deck to capture the superstructure, as well as from the water below to capture the sub structure. In addition to the terrestrial scans, mobile Lidar was done for future planning.
12/19-9/20	**H.011970- Bayou Terrebonne Bridges.–** Surveyor for the Bayou Terrebonne bridge along with the entire intersection and adjacent roads.
11/18-04/19	**LA 327 Spur: Staring Lane Ext. Route LA 327-S- East Baton Rouge Parish, LA.** Project Manager for a topographic survey for this project which is located in East Baton Rouge Parish, in between the intersections of La 42 (Burbank Dr.) and Staring Ln. and La 327 (Gardere Ln.) and La 30. A complete Topographic survey including all utilities with depths and all drainage was required, along with finish floor elevations of all buildings that fall within the survey limits.
05/17-10/18	**H.004791.5- Belle Chasse Bridge and Tunnel Replacement Hydrographic Survey- Plaquemines Parish, LA.** Surveyor for comprehensive topographic surveying services for the Belle Chase Bridge and Tunnel Replacement project for LA DOTD. Included in this work was a survey performed utilizing traditional methods, terrestrial laser scanning of roadway surfaces, and multi-beam 3-D hydrographic surveying.

01/18-6/19	**H.004100- I-10 (LA 415 to Essen Lane on I-10 and I-12)- East and West Baton Rouge Parishes- LA DOTD.** Project Manager for topographic survey of the work between LSU lakes and Essen Lane.
02/17-03/18	**H.010753.5- US 90/I-310 Interchange, St. Charles Parish, LA.** Surveyor responsible for topographic surveying and 3-D laser scanning at the intersection of US-90 and I-310 in St. Charles Parish.
8/14-Ongoing	**H.004273.5 – I-49 Connector – Lafayette Parish, LA – LA DOTD.** Survey Manager responsible for providing topographic surveying services for the I-49 Connector. The project is in a dense urban area and is approximately 5 miles long. Forte & Tablada, Inc. completed laser scanning services for much of the congested corridor as a means to obtaining topographic data without endangering surveyors.
03/13-07/15	**H.004698 – Almonaster Avenue Lift Bridge – Orleans Parish, LA.** Survey Manager responsible for performing topographic and property surveys, developing a drainage map, establishing existing right-of-way for the north line of I- 10, Almonaster Avenue, and CSX Railroad property, and establishing elevations to develop a Digital Terrain Model with widths matching the limits of the topographic survey.
10/18-02/19	**H.012343 Sunshine Bridge Repair.** Surveyor responsible for establishing control on and near the Sunshine Bridge to use survey and laser scanning methods to monitor the damage on the bridge. This project included utilizing LiDAR data.
06/19-09/19	**H.000303.6- Danziger Bridge Repair, Orleans Parish, LA.** Surveyor for Topographic and Monitoring survey and laser scanning of Danziger bridge. This survey is necessary due to damage of joints, deck, and girder ends of the fixed spans on both sides of the bridge. This project included utilizing LiDAR data.
1/12-12/20	**H.012308- Cook Road Improvements, Livingston Parish, LA.** Surveyor for Topographic and Right-of-Way surveys for this project that designed improvements to an existing section of two lane roadway and an unimproved area with the construction of a four (4) lane boulevard section from LA Hwy 16 (Pete's Hwy) to LA Hwy 1026 (Juban Road), along with several bridges.

	**Firm**	**Forte & Tablada, Inc.**		
	Name	Spencer Rimes, PLA	Years of Relevant Experience with this Employer	1
	Title	3D Laser Scanning	Years of Relevant Experience with Other Employer(s)	12

Degree(s)/Years/Specialization			MLA/2009/Landscape Architecture
Active Registration Number/State/Expiration Date			BS/2005/Horticulture
Year Registered	N/A	Discipline	N/A
Contract Role(s)/Brief Description of Responsibilities			**3D Laser Scanning**. Spencer is a GIS/Data Analyst with 12 years of experience. He graduated from Louisiana State University with a degree in Landscape Architecture with a GIS concentration. He has experience in ArcGIS, Autocad, Microstation and Inroads Survey, Adobe Creative Suite, as well as hydrographic mapping software.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
6/13-4/14	**USACE Levee Inspections – Louisiana, TX, and IL.** GIS Specialist for levee system inspections. The work consists of manual inspection using a GPS-enabled tablet, recording all deficiencies and creating advanced reports, photo logs and detailed maps with their associated quality ratings.
5/14-8/15	**Strategic Sites Inventory Program – Statewide.** Site planning and design consultant for Louisiana Economic Development. The program consists of identifying development-ready sites and accelerating the availability of those sites for industrial and commercial development.
11/15-3/16	**LA 327 – Gardere Lane Topographic Survey – Baton Rouge, LA.** GIS Analyst for topographic survey of drainage features and development of the existing drainage map using a combination of field-collected data and LiDAR imagery.
1/18-6/19	**LA 415 to Essen Lane Topographic Survey – Baton Rouge, LA.** GIS Analyst for topographic and drainage survey. The work consists of field data collection of features and attributes utilizing an imaging laser scanner and creating the overall drainage network using a combination of as-built drawings and field-collected data.
9/20-5/21	**LADOTD Hydrographic Bridge Surveys – Statewide.** Technical lead for multibeam surveys related to bridge scour analysis. The work consists of hardware calibration, data collection, and post-processing of survey data.
9/21	**Westbank Closure Complex Multi-Beam Hydrographic Survey.** Served as a technical lead for the comprehensive multibeam hydrographic scour survey.

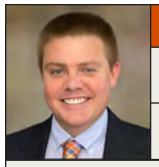


Firm	Forte & Tablada, Inc.		
Name	Brent M. Campbell	Years of Relevant Experience with this Employer	8
Title	3D Laser Scanning	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/2013/Construction Management
Active Registration Number/State/Expiration Date			N/A
Year Registered	N/A	Discipline	N/A
Contract Role(s)/Brief Description of Responsibilities			**3D Laser Scanning**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
9/21	**Westbank Closure Complex Multi-Beam Hydrographic Survey, Belle Chasse, LA.** Utilizing a shallow draft vessel equipped with advanced multi-beam sonar equipment, Forte & Tablada performed a comprehensive survey extending bank-to-bank of the station and beyond the protection fenders for a global depiction of scour. Scour results were presented in a color ramped elevation map, as well as imagery showing the presence of debris on an intake screen. Brent served as Advanced Measurements technician for the project.
1/20-10/20	**H.012588, H.012169, H.012587 I-10: Atch Basin Br-W. Baton Rouge P/L, I-10: Iberville P/L-W End Miss Br, I-10: W End of Br 290-W End of LA 415- West Baton Rouge & Iberville Parishes.** AMM Technician for complete topographic survey, approximately 18.3 miles, from the East end of the Atchafalaya Bridge to the West end of the I-10/LA 415 Interchange.
10/19-10/20	**H.012485.1- Inspection of Metal Culverts- Statewide, LA.** Laser scanning technician to provide inspections and data acquisition for approximately 230 culvert locations statewide. Culvert measurements were acquired with a mixture of 3-D laser scanning, sonar, and LIDAR.
12/19-9/20	**H.011970- Bayou Terrebonne Bridges.** Responsible for laser scanning the Bayou Terrebonne bridge along with the entire intersection and adjacent roads.
05/19-09/19	**H.000303.6- Danziger Bridge Rehabilitation, Orleans Parish, LA.** Laser scanning and project technician for survey investigation of Danziger Bridge. Included laser scanning and comparison of actual conditions to original plans.
05/17-10/18	**H.004791.5- Belle Chasse Bridge and Tunnel Replacement Hydrographic Survey- Plaquemines Parish, LA.** Responsible for laser scanning for the Belle Chase Bridge and Tunnel Replacement project for LA DOTD. Included in this work was a survey performed utilizing traditional methods, terrestrial laser scanning of roadway surfaces, and multi-beam 3-D hydrographic surveying.
11/19-12/20	**H.012083- Calcasieu River Bridge Investigation, Calcasieu Parish, LA.** Laser scanning and project technician to provide laser scanning services for the I-10/Lake Calcasieu bridge in Lake Charles, LA. Terrestrial scans were done underneath the bridge for 10 spans on the East and West side, on top the deck to capture the superstructure, as well as from the water below to capture the sub structure. In addition to the terrestrial scans, mobile Lidar was done for future planning.

1/22-Ongoing	**Hat Creek Permit Survey, Bossier Parish, LA.** Advanced Measurements technician for UAV based aerial LiDAR and hydrographic surveys to provide plan and profile plans for permitting purposes. The project included flying approximately 200 acres on the Red River to provide a bare earth model to our engineers. This method allowed us to rapidly capture survey grade data versus traditional survey methods. A hydrographic survey of the Red River was performed using a sonarmite mounted on a shallow water vessel due to the low levels of the river. This hydrographic survey data was also provided to our engineers where it was integrated with the aerial LiDAR to provide the client with plan and profile plans for permit applications.
10/21-Ongoing	**Merryville Aerial LiDAR, Beauregard Parish, LA.** Advanced Measurements technician for UAV based aerial LiDAR to quickly capture the site topography. The project included flying approximately 175 acres in Merryville, LA to provide a bare earth model to our engineers. Due to the projects tight schedule constraints, we were able to do an initial topo survey of the site in a single day, then produce a surface model and contours for our engineers two days later. The surface model was used for preliminary site design and drainage flow characteristics.
11/18-04/19	**LA 327 Spur: Staring Lane Ext. Route LA 327-S- East Baton Rouge Parish, LA.** Responsible for laser scanning between the intersections of La 42 (Burbank Dr.) and Staring Ln. and La 327 (Gardere Ln.) and La 30. A complete Topographic survey including all utilities with depths and all drainage was required, along with finish floor elevations of all buildings that fall within the survey limits.
02/17-03/18	**H.010753.5 – US 90/I-310 Interchange – St. Charles Parish, LA.** Project Technician responsible for topographic surveying and 3-D laser scanning at the intersection of US90 and I-310 in St. Charles Parish. This project will allow improvements for safety and efficiency. The complete topographic survey includes all utilities with depths and all drainage required along with finish floor elevations of all buildings that fall within the survey limits.
8/14-Ongoing	**H.004273.5 -I-49 Connector – Lafayette Parish, LA.** Responsible for laser scanning services for the I-49 Connector. The project is in a dense urban area and is approximately 5 miles long. Forte & Tablada, Inc. completed laser scanning services for much of the congested corridor as a means to obtaining topographic data without endangering surveyors.
01/13-12/13	**H.009933 MacArthur Interchange Project Phase 1B – Orleans Parish, LA.** Responsible for laser scanning general areas in support of topographical survey including location and elevation surveys, for redundancy and volume.
01/13-03/13	**H.009250 I-10 (Highland to LA 73) – East Baton Rouge and Ascension Parishes, LA.** Responsible for laser scanning of several bridges overpassing I-10, and extracting/coding survey coordinates and alignments. Also determined minimum horizontal and vertical clearances.
03/13-07/15	**H.004698 Almonaster Avenue Lift Bridge – Orleans Parish, LA.** Responsible for laser scanning of Almonaster lift bridge and determination of various bridge geometrics and counterweight volume based on scan data. Provided 2-D plan geometry and elevations, as well as coded survey data. Used scanning to perform rail survey for inaccessible areas.

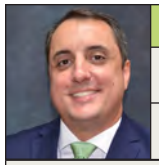


Firm	CONSOR Engineers, LLC		
Name	Michael Dukes, PE	Years of Relevant Experience with this Employer	12
Title	Underwater/Acoustical	Years of Relevant Experience with Other Employer(s)	2

Degree(s)/Years/Specialization			BS/2008/Civil Engineering, MS/2009/Civil Engineering MS/2019/Engineering Mgmt.
Active Registration Number/State/Expiration Date			PE.40986/LA/3.31.23
Year Registered	2016	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Underwater/Acoustical**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
	Mr. Dukes has 14 years of experience in underwater bridge inspections. He has performed underwater bridge inspections, acoustic imaging inspections, and hydrographic surveys for state departments of transportation in Louisiana, Alaska, Arkansas, California, Florida, Kansas, Missouri, Mississippi, Montana, Nebraska, Oklahoma, South Carolina, South Dakota, Texas, and Virginia. Federal clients include the US Navy, US Coast Guard, and Bureau of Indiana Affairs. He has experience with special underwater diving equipment including a clear water box for underwater photography, underwater video equipment, underwater D-meter, and underwater hydraulic tools. He has made presentations on underwater bridge inspections and acoustic imaging at numerous conferences, including the Louisiana Transportation Conference. **Courses:** ▶ NHI 130055, "Safety Inspection of In-Service Bridges" – 10/16/2015 ▶ NHI 130053, "Bridge Inspection Refresher Training" – 03/12/2021 ▶ NHI 130091, "Underwater Bridge Inspection" – 01/30/2015 ▶ NHI 130078, "Fracture Critical Inspection," – 05/10/2013 ▶ NHI 135085, "Plan of Action for Scour Critical Bridges" – 10/15/2020 **Certifications:** ▶ Surface-Supplied Air Diving Supervisor – ADCI #58165 ▶ FHWA-certified NHI Bridge Instructor (2015): NHI 130053, NHI 130078 ▶ HYPACK Hydrographic Surveying Field to Finish Single Bean Training – 05/21/2018

09/13-Ongoing	**Contract 4400009105: Statewide Underwater Bridge Inspections, Louisiana DOTD.** Team Leader/Acoustic Imaging. Under seven task orders for two consecutive contracts, CONSOR has performed 1200+ underwater inspections of bridges in LADOTD Districts statewide. The project included Level I, II, and III inspections utilizing surface-supplied air and commercial SCUBA diving systems, for concrete, steel, and timber bridges and culverts and 2D and 2D Acoustic Imaging on select bridges. Inspections have included challenging aspects specifically related to wildlife, fast currents, difficult access as well as culvert structures requiring penetration dives through extensive silt and debris build up. CONSOR's most recently completed task order (2019) included 254 bridges in LADOTD District 2, which encompasses the parishes of Orleans, Jefferson, Lafourche, and Terrebonne. The bridges inspected have included I-10 Eastbound/Westbound bridges over Lake Pontchartrain, US 11 over Lake Pontchartrain, and I-10 Eastbound/Westbound over the Bonnet Carre Spillway. CONSOR's current task order, ending in June 2022, has completed 350+ inspections to date in LADOTD Districts 2, 4, 5, 7, 8, 58, and 62. Comprehensive engineering reports are prepared and submitted in LADOTD AssetWise Bridge Management System.
11/14-Ongoing	**Statewide Underwater Bridge Inspections, Texas DOT.** Project Manager/Team Leader CONSOR is providing underwater bridge inspection and acoustic imaging statewide under a task order-based contract. Each bridge is inspected from two feet above the mean high tide waterline to the mudline. Each inspection requires a detailed engineering report that includes client-specific forms, channel cross-section sketch, follow-up action worksheet, elemental data inspection record, and inventory and defect photographs. Task orders have included the underwater inspection and acoustic imaging of on- and off-system bridges in the Houston, Paris, and Atlanta Districts.
1/10-Ongoing	**Statewide Underwater Bridge Inspections, South Carolina DOT.** Team Leader Under four consecutive contracts, CONSOR has performed 550+ underwater bridge inspections throughout the state. Responsibilities included the investigation, evaluation, and recommendation of repairs to the bridges' substructure units (located in the water). Bridges ranged in size from small, completely submerged box culverts to large, river-crossing trusses and cable stays. After the inspection, a complete report was prepared for each bridge detailing the findings, rating the bridges in both NBIS and BMS, and stating recommended repairs. Acoustic imaging was used on bridges over the Cooper and Wando Rivers to document scour for repair recommendations, a project for which CONSOR an Engineering Excellence award from the American Council of Engineering Companies.

	Firm	T. Baker Smith, LLC		
	Name	Jean Reulet, PLS	Years of Relevant Experience with this Employer	1
	Title	Title Work/Research	Years of Relevant Experience with Other Employer(s)	13

Degree(s)/Years/Specialization			BS/2011/Geomatics
Active Registration Number/State/Expiration Date			5145/LA/3.31.24
Year Registered	2015	Discipline	Survey
Contract Role(s)/Brief Description of Responsibilities			**Title Work/Research**. Jean has served in various roles as a professional land surveyor since 2015. His field experience for LADOTD projects began in 2012 where he has been involved in dozens of topographic surveys of varying sizes across southern Louisiana. He has participated in all stages of a topographic survey from field data collection to final deliverables preparation according to the LADOTD's Location and Survey Manual. Jean is experienced in the use of cutting edge technology such as terrestrial and mobile LIDAR methods for collecting topographic and structural data in an efficient and safe manner.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
06/20-06/21	**Multiple S.P. Nos., Contract No. 4400017597,** Rural Bridge Replacement Initiative, Southern LA. Survey Dept. Assistant Manager. Performed data processing, project QAQC and management for Topographic Survey.
03/21-06/21	**H.010885: LA 91: Bayou Plaquemine Brule Br Replace, Estherwood, LA.** Survey Dept. Assistant Manager. Performed data processing, project QAQC and management for Topographic Survey. H.010885: LA 91: Bayou Plaquemine Brule Br Replace, Estherwood, LA. Survey Dept. Assistant Manager. Performed data processing, project QAQC and management for Topographic Survey.
04/20-11/20	**H.000688: US 11 Norfolk Southern RR Overpass (HBI), Slidell, LA.** Sr. Project Manager. Performed data processing and project QAQC for Topographic Survey
04/20-06/20	**H.000284: US 90: Pearl River Bridges (HBI), Orleans Parish, LA.** Sr. Project Manager. Performed data processing, project QAQC and management for Topographic Survey, Mobile LiDAR Scanning project.
01/20 – 08/20	**H.010652: LA 73: US 61 (Airline) – Essen Lane, Baton Rouge, LA**. Sr. Project Manager. Performed data processing, project QAQC and management for Topographic Survey, Mobile LiDAR Scanning project.
06/19-08/19	**H.004791: LA 23: Belle Chasse Bridge & Tunnel (HBI), Belle Chasse, LA.** Sr. Project Manager. Performed data processing, project QAQC and management for Topographic Survey
08/19-11/19	**H.011645: LA 3002 Access Management, Denham Springs, LA.** Sr. Project Manager. Performed data processing, project QAQC and management for Topographic Survey, Mobile LiDAR Scanning project.
04/19-04/19	**H.005121: I-10 to LA 1 Connector, W. Baton Rouge Parish, LA.** Sr. Project Manager. Performed data processing, project QAQC and management for Topographic Survey
01/19-04/19	**H.012735: LA 182 Barrow St. Bridge, Houma, LA.** Sr. Project Manager. Performed data processing, project QAQC and management for Topographic Survey.
10/18-04/19	**H.012591: I-10 Paris Road – Lake Pontchartrain, Orleans Parish, LA.** Sr. Project Manager. Performed data processing, project QAQC and management for Topographic Survey, Mobile LiDAR Scanning project.

	Firm	T. Baker Smith, LLC		
	Name	T. J. Stokes, PE	Years of Relevant Experience with this Employer	1
	Title	SUE/Utility Coordination	Years of Relevant Experience with Other Employer(s)	12

Degree(s)/Years/Specialization			BS/2009/Industrial Engineering
Active Registration Number/State/Expiration Date			PE.40079/LA/3.31.24
Year Registered	2015	Discipline	Industrial
Contract Role(s)/Brief Description of Responsibilities			**SUE/Utility Coordination**. T.J. has successfully managed numerous SUE projects specializing in transportation and roadway projects. As the Lead Professional for Utility Engineering, he is currently overseeing the completion of DOTD and MDOT retainer contracts along with numerous other public and private client projects. He has thorough knowledge of the SUE standards listed in CI/ASCE Standard 38-02 and is familiar with all SUE technologies and equipment, including but not limited to, ground penetrating radar (GPR), hydro/air vacuum excavation, and numerous other types of geophysical locating equipment.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
06/2021-Ongoing	**4400014661: LADOTD – IDIQ SUE Services Statewide, LA.** Task Order No. 2, State Project No. H.012541.5-LA 594 Overpass at I-20 – Overall Project Manager. Responsible for QL B SUE in accordance with ASCE 38-02.
05/18-Ongoing (previous employer)	**H.011670: LADOTD – Loyola Interchange Improvements.** SUE Division Manager/Project Manager. Responsible for QL B SUE.
04/18-2021 (previous employer)	**H.007300: LADOTD – Kansas Lane and Garrett Road Widening.** SUE Division Manager/Project Manager. Responsible for QL A and B SUE.
01/18-2021 (previous employer)	**H.004100: LADOTD – I-10 Widening (LA 415 to Essen Lane)**. SUE Division Manager/Project Manager. Responsible for Quality Level B SUE.
01/18-07/18 (previous employer)	**H.004791: LADOTD – LA 23: Belle Chasse Bridge and Tunnel.** SUE Division Manager/Project Manager. QL A and B SUE.
06/21-06/21	**Safety Widening of Roddy Road (US 61 to LA 935), Ascension Parish, LA.** Ascension Parish Government – SUE Engineer. Provided Subsurface Utility Engineering and R/W Mapping for the for the Roddy Road Safety Widening from US 61 to LA 935 as part of the Move Ascension Program. Project included geometric improvements to be made at the LA 429 intersection including Left-turn bays on the EB, WB and SB approaches and right-turn bays at the NB and SB approaches; Geometric improvements at LA 935 to include Left-turn bays at the EB, NB and SB approaches, right-turn bays at the NB approach; replacement of the bridges over New River and Bayou Narcisse.
12/21-12/21	**LA 3127 Extension: LA 70 to LA 1, Ascension Parish, LA.** Ascension Parish Government – SUE Engineer. Performed Subsurface Utility engineering (SUE) QL B-A in accordance with CI/ASCE 38-02 for utilities affected by project alignment. Level A test holes were conducted on 21 underground pipelines which either crossed the route or were within the R/W of the roadway. Subsurface utilities designated as part of the SUE services included water mains, sewer force mains, sewer effluent lines, pipelines carrying various products and ranging from 6" to 30" in diameter, buried electrical services, buried telephone, buried fiber optic telephone, fiber optic television, television, and gas mains. The project is proposed by Ascension Parish as the first phase of a 4-lane divided highway to south of Donaldsonville, LA.

Firm	Wiss, Janney, Elstner Associates, Inc.		
Name	Len Phelps	Years of Relevant Experience with this Employer	37
Title	SSPC Specialist	Years of Relevant Experience with Other Employer(s)	8

Degree(s)/Years/Specialization			BS/2009/Mechanical Engineering BS/1979/Biology BA/1979/Chemistry MS/1991/Chemistry
Active Registration Number/State/Expiration Date			N/A
Year Registered	2021	Discipline	**SSPC Specialist**
Contract Role(s)/Brief Description of Responsibilities			Len will serve as the Primary Coating Inspector.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
04/21-11/21	**Pacific Highway Land Port of Entry Envelope Renovation, Blaine, WA.** Lead Chemist, as part of the building envelope upgrade, provided project advice regarding the coating specification, minimum adhesion rating for tests on canopy coating, coating tape adhesion test results, and coating submittals.
08/21	**I-255 Jefferson Barracks Bridge over the Mississippi River, Emergency Repairs, Mehlville, MO.** The twin structures consist of a main span 910-ft long tied-arch structure with a steel box arch and a 12-foot-deep steel I-shaped tie girder. WJE completed bridge rehabilitation plans for both structures with construction ongoing. As Lead Chemist, assisted with bridge cable specification development and guidance regarding metalizing of the hanger cables that have experienced corrosion in the splash zone. The specification included trial testing to determine the proper blast media to prepare the surface without substantially removing the existing galvanized coating.
04/15	**I-20/I-55 Bridge over the Pearl River, Fatigue Retrofits, Jackson, MS.** The twin I-20/I-55 structures consist of precast prestressed concrete girder approach spans and a 3-span continuous welded plate girder river crossing with a maximum span length of 130 ft. MDOT retained WJE to develop and install fatigue retrofits to address distortion-induced cracking and to correct observed section loss in the girders at the abutments. As Lead Chemist, provided guidance for the surface preparation which included coatings containing lead and painting of the bridge repairs. Also advised on bridge coating repair issues including the removal of a holding primer prior to the application of a permanent coating system.

10/11-03/14	**Airport Cooling Tower, Location Withheld for Client Confidentiality.** Blistering and delamination of the polyurethane-based liner from interior concrete surfaces of upper and lower precast concrete cells of a cooling tower prompted a field investigation of the liner system, which included observations of the liner, sealant, and panel-to-panel conditions, as well as measurement of in-wall concrete relative humidity, determination of liner adhesion and coating thickness measurements. Samples of the liner and concrete substrate were also obtained and reserved for laboratory studies by Mr. Phelps. Laboratory studies of selected samples included visual, microscopic, and petrographic examinations; analyses by SEM/EDS; and analyses by infrared spectroscopy, and x-ray diffraction. Studies for acid-soluble chloride contents and conformational coating thickness were also conducted. The primary contributing cause to these delaminations was exposure of water to the backside of the liner at open, breached, weathered, and split sealant joints. Water at the backside interface can move past the backer rod to the sealant and create breaches in the sealant joints by freezing/ice jacking. Irregularities associated with installation techniques and methods may also contribute to the formation of mid-field blisters. Drawings and specifications were prepared to remediate the failed coating.
06/11-04/14	**Reeds Island Bridge, Hilo, HI.** Served as Primary Coating Inspector and Lead Chemist to prepare specifications for preparation and shop painting of new galvanized steel, and for the painting and repair of site elements in a damp, wet environment due to average rainfall of about 130 inches of rain per year and waterway below. Led efforts to perform site inspections of shop and field surface preparation and coating application. The field coating application was in a wet environment due to frequent Hilo rainfall, and waterway below.
10/12-11/12	**Iowa Department of Transportation, Various Locations.** Served as a Primary Coating Advisor and Reviewer for the inspection and evaluation of weathering steel patinas for thirty-one bridges as part of research project to evaluate the performance of weathering steel bridge structures to identify types of structures that are most vulnerable to chloride contamination, identify locations on individual structures that are most susceptible, identify possible testing methods or inspection techniques, evaluate the effectiveness of water washing, and develop prioritization for washing based on the type and condition of the structure.
09/05-10/07	**State of Hawaii, Aloha Stadium, Honolulu, HI.** Primary Coating Inspector and Lead Chemist responsible for assessing the condition of the substrate and extant coatings applied to structural weathering steel of the Aloha Stadium. Subsequently developed specifications for the preparation and coating (zinc-rich primer; epoxy stripe, filler, and intermediate; and fluoropolymer finish-- brush, roller, and airless spray) of the salt contaminated structural weathering steel. Performed numerous site inspections of multiple phases of work required to prepare and coat the steel in a salt environment.
03/99-08/99	**Chicago Skyway, Chicago, IL.** Project Manager and Primary Coating Inspector performing a condition assessment of existing coatings and underlying steel substrate of the Calumet Bridge, viaducts, overpasses, and ramps. Adhesion testing, coating thickness measurement, review of substrate condition, and assessment of original substrate preparation were done.
12/96	**Bridge of the Americas, Panama City, Panama.** Primary Coating Inspector overseeing the coating condition survey for the bridge condition evaluation of the riveted tied-arch bridge that runs east to west and spans a mile and a half over the Panama Canal. For the condition survey of the coating covering the bridge steel (an oil-based primer pigmented with red lead and top coated with aluminum pigmented alkyd-based coating), witnessed tests conducted by contractor on the existing coating system and he conducted random on-site evaluations of the existing coating on accessible areas of the bridge, including surface chloride analyses, peel-adhesion tests, and coating thickness tests. Performed a review of the coating specifications and proposed a method of surface preparation and a recoating system.

	Firm	CONSOR Engineers, LLC		
	Name	Heath Pope, PE, ADCI, Dive Supervisor	Years of Relevant Experience with this Employer	5
	Title	Underwater Inspections	Years of Relevant Experience with Other Employer(s)	26

Degree(s)/Years/Specialization			BS/1992/Civil Engineering MBA/2004
Active Registration Number/State/Expiration Date			PE.36946/LA/9.30.22
Year Registered	2012	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Underwater Inspections**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
1/17-Ongoing	Mr. Pope provides more than 27 years of experience with a wide range of inspection and repair/rehabilitation projects. As a professional engineer and commercial diver, he routinely performs above-water and underwater condition assessments and repair design inspections; his experience includes a wide range of structures, including bridges, piers, wharves, relieving platforms, dry docks, quay walls, bulkheads, caissons, pipelines, and fender and mooring systems. Typical clients include state departments of transportation (DOTs), the US Navy, major port authorities, US Coast Guard, and several other federal agencies, municipal, and private clients throughout the US, Canada, and the Pacific Rim. He also serves as a member and contributing author on the ASCE Ports and Harbors committee which developed the ASCE Waterfront Facilities Inspection and Assessment Standard Practice Manual, published June 2015. **Courses:** ▶ NHI 130055, "Safety Inspection of In-Service Bridges" – 2/4/2005 ▶ NHI 130053, "Bridge Inspection Refresher Training" – 1/25/2018 ▶ NHI 130078, "Fracture Critical Inspection Techniques for Steel Bridges" – 3/6/2009 ▶ NHI 130091, "Underwater Bridge Inspection" – 9/1/2007 ▶ NHI 130110, "Tunnel Safety Inspection" – 3/3/2017 ▶ NHI 135047, "Stream Stability & Scour Highway Bridges for Bridge Inspection" – 2/21/2007 **Certifications:** ▶ Surface-Supplied Air Diving Supervisor – ADCI #24803

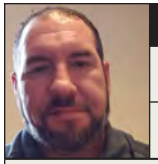
04/15-05/15	**Statewide Underwater Bridge Inspections, West Virginia DOT.** Team Leader: CONSOR has been selected for two task order-based contracts to provide underwater inspection services statewide. The project included a visual/tactile underwater inspection of the I-77 North and South Bridge over the Little Kanawha River and Rail Trail. The inspection was performed utilizing a four-person dive team with constant, direct communication between the dive supervisor and the diver. CONSOR provided a comprehensive engineering report that included structural, scour and channel conditions, evaluation of previous corrective actions, repair recommendations, sounding data, photographs, and drawings.
7/09-Ongoing	**Statewide Underwater Bridge Inspection – Alaska DOT and Public Facilities.** Deputy Project Manager/Team Leader: Since 2006, CONSOR has been selected for five 3-year term agreement contracts for the underwater inspection of marine and freshwater structures, including bridges and ferry terminals in locations ranging from the west end of the Aleutians, the Arctic Circle, and the southern Inside Passage in Alaska. The project includes the detection of damaged structure elements, section loss, timber decay or attack by marine borers, scour, and undermining of footings or concrete walls. Many of the bridges required dives to 95 ft. Therefore, a portable inflatable recompression bag system was brought to these remote sites as a precaution. In 2015, our contract was expanded to include fracture critical inspection of complex structures statewide
05/09-Ongoing	**Statewide Underwater Bridge Inspections, South Carolina DOT.** Team Leader. Under four contracts, CONSOR has performed 550+ underwater bridge inspections throughout the state. Responsibilities included the investigation, evaluation, and recommendation of repairs to the bridges' substructure units (located in the water). Bridges ranged in size from small, completely submerged box culverts to large, river-crossing trusses and cable stays. After the inspection, a complete report was prepared for each bridge detailing the findings, rating the bridges in both NBIS and BMS, and stating recommended repairs. Acoustic imaging was used on bridges over the Cooper and Wando Rivers to document scour for repair recommendations.

Firm	CONSOR Engineers, LLC		
Name	Dustin Noel, PE, ADCI Diver	Years of Relevant Experience with this Employer	13
Title	Underwater Inspections	Years of Relevant Experience with Other Employer(s)	6

Degree(s)/Years/Specialization			BS/2003/Civil Engineering
Active Registration Number/State/Expiration Date			26411/OK/10.31.2022
Year Registered	2003	Discipline	Civil Engineering
Contract Role(s)/Brief Description of Responsibilities			**Underwater Inspections**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
	Mr. Noel is a structural engineer with more than 19 years of experience performing NBIS safety inspections of bridges using FHWA standards. His experience includes routine, fracture critical, and underwater bridge inspections. Mr. Noel's client portfolio includes state departments of transportation nationwide, including Louisiana, as well as federal agencies. Mr. Noel serves as a lead instructor for PennDOT's Basic Bridge Safety Inspection Course; Bridge Safety Inspection Refresher Training; and Load Rating Analysis of Highway Bridges. He is a SPRAT Level III-certified rope access technician. **Courses**: ▶ PennDOT, "Bridge Safety Inspection Course" (FHWA/NHI-approved 130055 equivalent) – 2/2/2004 ▶ NHI 130053, "Bridge Safety Inspection Refresher Course" – 3/27/2019 ▶ NHI 130078, "Fracture Critical Inspection Techniques for Steel Bridges" – 6/07/2011 ▶ NHI 130088, "Bridge Construction Inspection" – 1/08/2008 ▶ NHI 130091, "Underwater Bridge Inspection" – 1/25/2019 **Certifications:** ▶ Surface-Supplied Air Diving Supervisor– ACDI #58346 ▶ SPRAT Level III Engineer Climber ▶ FHWA-certified NHI Bridge Inspection Instructor (2019): NHI 130053, NHI 130078
03/13-Ongoing	**Statewide Underwater Bridge Inspections, Pennsylvania DOT.** Project Manager/Team Leader: The PennDOT Bureau of Maintenance and Operations has selected CONSOR for a third consecutive five-year contract to perform underwater inspections on bridges and tunnels statewide. The project includes NBIS inspection, scour evaluation, and report preparation with photographs and drawings, as well as participation in bridge owner meetings.
08/12-05/18	**Statewide Underwater Bridge Inspections, Virginia DOT.** Team Leader. Under four contracts, CONSOR was selected to provide professional NBIS diving services for inspection and analysis on bridges throughout Virginia. CONSOR provided all personnel and equipment necessary to perform the underwater inspections that included recommendations of follow-up action and the preparation of inspection reports. In areas with salt water and/or brackish water, a minimum of 10% of each substructure element was cleaned of marine growth. Color photography was used and included as a part of each final inspection report.

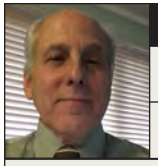
1/17-Ongoing	**Contract 4400009105: Statewide Underwater Bridge Inspections, Louisiana DOTD.** Project Manager/Team Leader. Under seven task orders for two consecutive contracts, CONSOR has performed 1200+ underwater inspections of bridges in LADOTD Districts statewide. The project included Level I, II, and III inspections utilizing surface-supplied air and commercial SCUBA diving systems, for concrete, steel, and timber bridges and culverts and 2D and 2D Acoustic Imaging on select bridges. Inspections have included challenging aspects specifically related to wildlife, fast currents, difficult access as well as culvert structures requiring penetration dives through extensive silt and debris build up. CONSOR's most recently completed task order (2019) included 254 bridges in LADOTD District 2, which encompasses the parishes of Orleans, Jefferson, Lafourche, and Terrebonne. The bridges inspected have included I-10 Eastbound/Westbound bridges over Lake Pontchartrain, US 11 over Lake Pontchartrain, and I-10 Eastbound/Westbound over the Bonnet Carre Spillway. CONSOR's current task order, ending in June 2022, has completed 350+ inspections to date in LADOTD Districts 2, 4, 5, 7, 8, 58, and 62. Comprehensive engineering reports are prepared and submitted in LADOTD AssetWise Bridge Management System.
2014-2016	**Underwater Bridge Inspection Statewide, Louisiana DOTD.** Project Manager/Team Leader. At his previous firm, Mr. Pope performed on this five-year retainer contract to perform underwater bridge inspections throughout Louisiana, including 100% visual inspections of submerged elements in accordance with NBIS requirements. Task orders included: Task 1 (2014) in District Seven – underwater inspection of 277 concrete, steel, and timber bridges; Task 2 (2014) in District Three – underwater inspection of 96 concrete, steel, and timber bridges; Task 3 (2014-2015) in District 61 – underwater inspection of 69 concrete, steel, and timber bridges; and Task 5 (2016) in District Two – underwater inspection of 30 concrete, steel, and timber bridges.
1/17-Ongoing	**Statewide Underwater Bridge Inspections, Iowa DOT.** Team Leader/Dive Supervisor. CONSOR has performed four consecutive cycles of statewide underwater bridge inspections, totaling 200+ inspections. Bridges included timber, steel, and concrete construction crossing streams and rivers with swift currents, limited access, and zero visibility. Each inspection required an in-depth engineering report with photographs and CADD drawings illustrating defects.
1/17-Ongoing	**Statewide Underwater Bridge Inspections, Mississippi DOT.** Team Leader/Dive Supervisor. CONSOR has been selected for three contract cycles of NBIS underwater inspections for 200+ bridges throughout the state. Underwater acoustic imaging and hydrographic surveying was performed on six bridges on the Mississippi and Pearl Rivers. Diving conditions included fast flow with debris and limited visibility. Structural conditions were documented with underwater photography. Non-destructive testing was used to accurately determine section loss of steel piles, and timber piles were inspected using a Resistograph drill. Soundings were taken upstream and downstream of the bridge while full contours were developed for each bridge site. Reports included NBIS component ratings and Element Level inspections. Scour countermeasures were designed for the I-10 Bridge in Pascagoula when soundings indicated excessive scour had occurred.



Firm	AECOM Technical Services, Inc.		
Name	Jonathan Vavasseur, PWS	Years of Relevant Experience with this Employer	2
Title	Environmental Task Leader/Wetlands/Sect. 404/Water Quality	Years of Relevant Experience with Other Employer(s)	15

Degree(s)/Years/Specialization			BS/2002/Wildlife and Fisheries Sciences
Active Registration Number/State/Expiration Date			N/A
Year Registered	2018	Discipline	Certified Professional Wetland Scientist (PWS)
Contract Role(s)/Brief Description of Responsibilities			**Environmental Task Leader/Wetlands/Sect. 404/Water Quality**. Jonathan is a certified Professional Wetland Scientist and Regulatory Permitting Specialist with over 17 years of experience in environmental, regulatory, and ecological consulting with a strong concentration in wetland ecology. He has served as the team leader and field coordinator for environmental project teams. Jonathan has led various projects that range from wetland delineations, threatened and endangered (T&E) surveys, biological assessments, and environmental site assessments throughout the southeast U.S. for federal and state agencies, municipalities, and private clients.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
11/20-04/21	**City of East Baton Rouge, College Drive Corridor Improvements, East Baton Rouge, LA.** Senior Project Biologist/Permitting Specialist. Conducted wetland delineations and T&E Surveys as well as Section 404/10 Permitting for all roadway segments within the proposed improvement corridors.
07/14-07/15	**US Army Corps of Engineers (USACE), Wetland Delineation and Reporting, Baton Rouge, LA**. Lead Field Biologist and Project Coordinator responsible for conducting wetland delineations and technical reporting for an approximate 220-acre tract owned by the Baton Rouge Metropolitan Airport.
08/15-08/18	**Louisiana Department of Transportation and Development (DOTD), FHWA Funded Highway Projects, Statewide, LA.** Environmental Impact Specialist - DCL (Biologist) responsible for coordinating and overseeing all wetland projects for DOTD. Lead biologist responsible for coordinating all linear and tract wetland delineations and technical reporting for federally funded highway projects statewide. Work included serving as the environmental coordinator, coordinating and conducting the wetland and T&E field surveys, NEPA processing for federally-funded highway projects, as well as technical reporting for state highway projects
07/20-09/20	**City of East Baton Rouge, Jones Creek Road Extension Project, East Baton Rouge, LA.** Senior Project Biologist/Permitting Specialist. Conducted Wetland Delineation and T&E Surveys as well as Section 404/10 USACE Permitting
02/19-08/20	**Department of Defense, Wetland and T&E Surveys, NASJRB New Orleans, LA.** Project Manager and Senior Project Biologist responsible for conducting wetland and T&E species field surveys, technical reporting and NEPA documentation for a 500+ acre proposed vegetation clearing project for the Department of Defense.
06/19-12/19	**Department of the Airforce, East Gate Relocation, Barksdale Air Force Base, LA.** Senior Project Biologist. Conducted Wetland Delineations for the Proposed Gate Relocation and New Roadway.

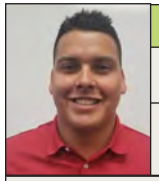


Firm	AECOM Technical Services, Inc.		
Name	Gary Kassoff	Years of Relevant Experience with this Employer	7
Title	Coast Guard Permitting/Agency Coordination	Years of Relevant Experience with Other Employer(s)	40

Degree(s)/Years/Specialization			MS/1974/Environmental Health Science BS/1969/Biology
Active Registration Number/State/Expiration Date			N/A
Year Registered	N/A	Discipline	N/A
Contract Role(s)/Brief Description of Responsibilities			**Coast Guard Permitting/Agency Coordination**. Gary had over 40 years of experience processing USCG Bridge Permit applications, evaluating movable bridge operations and drawbridge regulations, preparing navigational reports, and administering requirements of NEPA while serving as the Bridge Program Manager for the First CG District in the northeast U.S. He was responsible for the issuance of over 750 drawbridge regulation, 1000 bridge permits and countless bridge construction reviews. He was the USCG official responsible for the preparation and issuance of NEPA documentation to meet USCG Bridge Program environmental mandates pursuant to NEPA. Since 2014 with AECOM he has worked as a bridge permit and navigation specialist preparing bridge permit applications, navigational reports and providing coordination with marine interests for various clients throughout the U.S. as well as assisting with environmental documentation preparation. Assisted in preparing applications for U.S. Army Corps of Engineers approvals.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
04/17-12/17	**SFDPW, 3rd Street Bridge over Islais Creek, San Francisco, CA.** Prepared Project Initiation on behalf of the SFDPW for submission to the USCG for modification of existing 3rd Street Bridge. Presented existing and future needs of navigation justifying reduction in required navigational clearances
04/11-11/13	**Port Authority of NY/NJ, Bayonne Bridge Raising, NY/NJ.** Project Manager for USCG's NEPA lead agency mandate and bridge permitting responsibility for raising of the historic Bayonne Bridge. The project increased the bridge vertical clearance from 150 to 225 feet thereby ensuring access for post-Panamax vessels into Port of New York and allowing the Port of NY/NJ to maintain its commercial competitiveness. Working under a federally imposed time mandate he successfully directed a controversial environmental review process, coordinated with federal, state and local agencies culminating in an approved EA/FONSI and issuance of a USCG Bridge permit. Coordinated closely with the U.S. Army Corps of Engineers regarding impact on Federally authorized navigation channel.
09/15-07/18	**CTDOT, Devon Railroad Bridge Replacement, CT, NJ.** Provided permitting, environmental and constructability presentation for RFP and client interview contributing to project award. Prepared navigational study assisted with bridge permit application and impact assessment for this movable bridge structure replacement along heavily transited commuter/regional rail corridor. Coordinated with U.S. Army Corps of Engineers regarding its federal regulatory responsibilities.

01/05-12/12	**Amtrak, Northeast Corridor Historic RR Movable Bridge Replacements, Thames and Niantic Rivers, CT.** Coast Guard program manager for bridge permitting and navigational coordination for replacement of two Amtrak Northeast Corridor movable bridges (Thames River and Niantic River). Oversaw significant navigational and environmental coordination between Amtrak, commercial and recreational boating interests and the U.S. Navy. Developed in-water construction procedures to maintain construction schedule while meeting needs of navigation.
8/16-Ongoing	**Boston DPW, Northern Avenue Bridge Replacement, Boston, MA.** Provided Bridge Permitting and navigational expertise for RFP which resulted in selection of team for A&E services for replacement of a historic and iconic bridge in Downtown Boston. Active member of ongoing bridge permit and environmental preparation. As part of permit application team, prepared Navigation Impact Report for USCG Bridge Permit Application and provided bridge permit processing expertise. As part of AECOM Team coordinated closely with the U.S. Army Corps of Engineers which served as lead federal agency for federal cultural resource mandates.
10/16-05/19	**MDSHA, Cobb Island Bridge Replacement, Newburg/Cobb Island, MD.** Prepared a navigational report for marine activity along Neale Sound as navigational expert for AECOM Team for replacement of Cobb Island Bridge. The results of the navigational report were included in the MD SHA's bridge permit application to the CG in support of proposed bridge design and navigational clearances. Coordinated with CG Portsmouth, VA bridge office. Successful USCG approval of bridge permit, required clearance gauges and navigational lighting.
06/17-06/20	**Triborough Bridge and Tunnel Authority, Bronx Whitestone Bridge Fender, Bronx/Queens, NY.** Provided CG Bridge permitting requirements and navigational protection concerns for fender protection design for major NYC highway bridge across active commercial and recreational waterway leading to issuance of USCG Bridge permit. Continued to coordinate with CG and other public officials and marine interests to assist in design and approval of bridge protective systems. Assisted in permit applications to the Corps of Engineers.
01/08-12/10	**NYCEDC, Arthur Kill RR Bridge, Conversion to Remote Drawbridge Operation, NY/NJ.** Oversaw bridge owner conversion from onsite operation of vertical lift RR Bridge to a remote location. Processed federal drawbridge operation regulation modification. Coordinated with regional navigational interests to ensure safety of navigation was assured while meeting operational efficiencies of bridge owner. As the major marine access into the Port of NY/NJ contentious/controversial issues were addressed and all parties were satisfied with bridge operation.
07/16-07/17	**Burlington County, Centerton Bridge Replacement, Rancoas Woods, NJ.** Prepared Coast Guard-required navigational impact report identifying the existing and prospective needs of navigation across Rancocas Creek. The results of the report supported conversion of an inoperative movable bridge to a low-level fixed bridge. Coordinated with CG Portsmouth, VA bridge office.



Firm	T. Baker Smith, LLC		
Name	Victor Hernandez	Years of Relevant Experience with this Employer	5
Title	Coast Guard Permitting - Agency Coordination/ Wetlands - Sect. 404 - Water Quality - Coastal Use	Years of Relevant Experience with Other Employer(s)	2

Degree(s)/Years/Specialization			BS/2014/Biology
Active Registration Number/State/Expiration Date			N/A
Year Registered	N/A	Discipline	N/A
Contract Role(s)/Brief Description of Responsibilities			**Coast Guard Permitting - Agency Coordination/Wetlands - Sect. 404 - Water Quality - Coastal Use**. Victor is an environmental professional and holds a bachelor's degree in biology. He supports senior professionals and project managers in the development and coordination of projects. He assists with the preparation of environmental permits and conducts environmental research. He assists with environmental monitoring studies, environmental assessments, threatened and endangered species surveys. Additionally, Victor prepares reports and completes field work as necessary to complete documentation for projects, including SWPPP Plans/Inspections, soil sampling, wetland delineations, coordination of noise and air studies, wildlife identification, endangered species/habitat biological assessments and eagle surveys.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
05/2020-07/2020	**Multiple S.P. Nos., Contract No. 4400017597, Rural Bridge Replacement Initiative, Southern LA.** Environmental Professional. Provided wetland delineations (assessing vegetation, soil and hydrology), gathered soil survey data, conducted scenic stream evaluation/ review, conducted T&E species survey including bridge assessment for the presence of bats, also completed NEPA documents.
02/2021-Ongoing	**Multiple S.P. Nos., Contract No. 4400017597, Rural Bridge Replacement Initiative Ph. 2, Southern LA.** Environmental Professional. Provided wetland delineations (assessing vegetation, soil and hydrology), gathered soil survey data, conducted scenic stream evaluation/review, conducted T&E species survey including bridge assessment for the presence of bats, also completed NEPA documents.
12/2018-12/2018	**S.P. H.013080 - McLemore Rd./Bee Bayou OSBR, Richland Parish, LA.** Environmental Support. Prepared SOVs, gathered agency responses, completed environmental checklists, prepared wetlands delineation report, assisted with permit drawing preparation for USACE permitting through DOTD, wetlands mitigation assistance to Parish for the off -system bridge replacement project.
12/2018-12/2018	**S.P. H.013144 - Pine Bluff Rd. / Drain to Cypress Creek OSBR, Ouachita Parish, LA.** Environmental Support. Prepared SOVs, gathered agency responses, completed environmental checklists, prepared wetlands delineation report, assisted with permit drawing preparation for USACE permitting through DOTD, wetlands mitigation assistance to Parish for the off -system bridge replacement of two (2) bridge sites in Ouachita Parish.
12/2018-12/2018	**S.P. H.013199 Country Estates Dr. / St. Louis Bayou OSBR, Terrebonne Parish, LA.** Environmental Support. Prepared SOVs, gathered agency responses, completed environmental checklists, prepared wetlands delineation report, assisted with permit drawing preparation for USACE permitting through DOTD, wetlands mitigation assistance to Parish for the off -system bridge replacement project.

Firm	AECOM Technical Services, Inc.		
Name	Triena Meiser	Years of Relevant Experience with this Employer	11
Title	Section 106/HABS/HAER	Years of Relevant Experience with Other Employer(s)	7

Degree(s)/Years/Specialization			MA/2003/Historic Preservation Planning BA/1998/History
Active Registration Number/State/Expiration Date			N/A
Year Registered	N/A	Discipline	N/A
Contract Role(s)/Brief Description of Responsibilities			**Section 106/HABS/HAER**. Trina will assist the cultural resources team. She is an architectural historian and a historic preservation planner who meets the Secretary of the Interior's qualifications (36 CFR Part 61; 48 Fed. Reg. 44738) in architectural history and history. She has taken the ACHP course: Successfully Navigating Section 106 Review– August 17, 2019. Ms. Meiser has more than 15 years of experience in identifying, evaluating, and planning for cultural and architectural resources, including a wide variety of historic buildings, structures, districts, and landscapes. She specializes in technical analysis based on archival research and survey to support regulatory compliance, specifically under Section 106 of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA). She conducts cultural resources studies, including inventory, survey, and evaluation reports; technical reports for NHPA and NEPA compliance in support of Environmental Impact Statements (EISs); National Register of Historic Places (NRHP) evaluations and nominations; impacts analyses, Section 4(fF assessments, and findings of effect; and Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER)/Historic American Landscape Survey (HALS) documents. She consults on transportation, energy, military, civic, and other community projects with designers, developers, and agencies, including State Historic Preservation Offices (SHPOs). Her experience in historic preservation provides a strong understanding of federal, state, and local regulations and a thorough knowledge of the Secretary of the Interior's Standards for the Treatment of Historic Properties and their function in effects analysis and preservation planning.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
07/15-06/16	**LADOTD State Project No. H.004273.5: I-49 Connector, Lafayette Regional Airport to I-10/I-49/US 167 Interchange, LA. Lafayette Parish, LA.** Surveyed and evaluated potential historic properties affected by a project to construct I-49 corridor in Lafayette, Louisiana. Researched and prepared historical context for the evaluation of buildings and districts in the Area of Potential Effects under Section 106 of NHPA.
01/19-05/19	**U.S. Department of Transportation, Federal Railroad Administration, Dallas to Houston High Speed Rail Historic Resources Survey, Leon, Waller, Madison, and Harris Counties, TX.** Surveyed the amended proposed alignment for the railroad project through rural and urban areas, including northwestern Houston. Conducted evaluation of primarily residential and agricultural resources, as well as commercial and civic buildings, and cemeteries. Prepared addendum reports for Leon, Waller, Madison, and Harris counties.

08/16-Ongoing	**Los Angeles County Metropolitan Transportation Authority (LACMTA), Purple Line Extension, Los Angeles, CA.** Reviewed potential design changes to the Westside Purple Line Extension Project to identify potential issues under Section 106 of the NHPA and NEPA that could result from unanticipated adverse effects on historic properties. Ongoing recommendations for steps to identify character- defining features and avoid adverse effects by adhering to the SOI Standards.
06/14-Ongoing	**Northern Indiana Commuter Transportation District (NICTD), West Lake Corridor Project, Cook County, IL, and Lake County, IN.** For NICTD and FTA, conducting survey and evaluation of historic properties affected by a project to extend the South Shore Line commuter railroad from Millennium Station in Chicago to communities in Lake County, Indiana. Preparing a historic property report per INDOT guidelines for Indiana and Illinois resources. Preparing impacts analysis for the Draft Environmental Impact Statement (DEIS) under NEPA and effects analysis under Section 106 of NHPA.
06/13-06/14	**Chicago Transit Partners (CTP), Wilson Transfer Station Project, Chicago, IL.** Providing consultation on historic properties affected by a project to rehabilitate the Wilson Station on the Chicago Transit Authority (CTA) Red Line elevated train. Prepared survey documentation and revisions to the Environmental Assessment (EA) and Memorandum of Agreement (MOA) between CTA and the SHPO. Prepared Section 4(f) analysis of effects to historic properties.
11/13-05/14	**Wisconsin Department of Transportation (WisDOT), County Trunk Highway G Widening Project, Rock County, WI.** Conducted an evaluation of potential historic properties, including farmsteads and rural residences, along a portion of County Trunk Highway G in Rock County, Wisconsin. Consulted with designers on avoidance of historic properties. Prepared Determination of Eligibility analysis and Finding of No Adverse Effect analysis in compliance with Section 106.
11/12-12/14	**California High Speed Rail Authority, California High Speed Train Project, Merced to Fresno Segment, Central CA.** Inventoried and evaluated more than 400 properties in Merced, Madera, and Fresno Counties in compliance with Section 106. Evaluations were conducted under a Programmatic Agreement between the State Historic Preservation Office and the California High-Speed Train Authority. [3/2011-2/2013] **Los Angeles County Metropolitan Transit Authority, Regional Connector Transit Project, Los Angeles County, CA.** Prepared Cultural Resources Mitigation Management Plan for the project through downtown Los Angeles, with measures concerning 21 significant historical resources. Prepared HABS record for a resource that will be demolished as a result of the project.
06/11-12/13	**California Department of Transportation (Caltrans), State Route 94 High Occupancy Vehicle Lanes Project, San Diego, CA.** As project manager for cultural resources studies, planned for historic and archaeological surveys and evaluations of resources within the Area of Potential Effects for a segment of State Route 94 widening in a highly urbanized area of San Diego. Prepared Historical Resources Evaluation Report to Caltrans standards in compliance with Section 106 and Section 4(f) requirements.
03/08-09/14	**City of Del Mar, North Torrey Pines Road Bridge Restoration, Del Mar, CA.** Prepared HAER documentation of the North Torrey Pines Bridge. Consulted with engineers to resolve significant impacts to the National Register-eligible resource. Assessed the deterioration of the bridge and established the historic character-defining features to be preserved. Evaluated restoration plans to implement mitigation measures in compliance with the Secretary of Interior's Standards. Monitored construction for appropriate treatments to the historic property.
02/10-01/12	**County of San Bernardino, Shadow Mountain Grade Separation at Route 66 Project, San Bernardino County, CA** Prepared technical report for the evaluation of historical resources along a portion of Historic Route 66 in San Bernardino County. Evaluated more than 10 resources and assessed impacts to historical resources due to the proposed introduction of a new overpass and highway connector.
03/12-08/13	**Orange County Transportation Authority (OCTA), Interstate 5/State Route 55 to State Route 57 HOV Lanes Project, San Diego, CA.** Conducted supplemental cultural resources studies for the project located in San Diego County. Surveyed resources within the Area of Potential Effects to analyze potential impacts to historical resources. Summarized findings in the Historical Resources Evaluation Report and Historic Property Survey Report per Caltrans standards in compliance with Section 106

Firm	AECOM Technical Services, Inc.		
Name	Tanya McDougall	Years of Relevant Experience with this Employer	7
Title	Section 106/HABS/HAER	Years of Relevant Experience with Other Employer(s)	9

Degree(s)/Years/Specialization			MS/2008/Historic Preservation BS/2005/History; Historic Preservation
Active Registration Number/State/Expiration Date			N/A
Year Registered	N/A	Discipline	N/A
Contract Role(s)/Brief Description of Responsibilities			**Section 106/HABS/HAER**. Tanya has over 16 years of experience in Section 106/HABS/HAERS and in managing and completing cultural resources investigations for state and federal agencies and private entities throughout the United States. She is a Cultural Resources Team Lead and meets the Secretary of the Interior's qualifications (36 CFR Part 61; 48 Fed. Reg. 44738) in architectural history and history. She is well acquainted with coordinating cultural resources surveys for linear and arial projects, as well as coordinating fieldwork for archeological and historic resources and research of primary source materials to inform National Register of Historic Places evaluations. Through her experience, Ms. McDougall has been the primary author for a variety of cultural resources projects and has successfully completed over 22 mitigation projects for historic properties.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
02/14-08/14	**Dallas Area Rapid Transit (DART), Historic American Engineering Record (HAER) Documentation for the Dallas Quadrangular Warren Through Truss Bridge, Dallas, TX.** Senior Architectural Historian conducted archival research on the historic bridge and prepared a HAER Level II equivalent document for the resource, which included preparing archival quality black and white photographs, a detailed description of the resource, and an in-depth historic context. The documentation served as mitigation for the removal of the bridge from rail service and was accepted by the THC in 2014.
02/13-05/13	**Oklahoma Department of Transportation (ODOT), HAER Documentation of the Bird Creek Bridge along Route 66 near Catoosa, Rogers County, OK**. Senior Architectural Historian conducted intensive level archival research for the historic Route 66 Bird Creek Bridge at several repositories, including the Oklahoma State Archives, Oklahoma Historical Society archives, Oklahoma State University special archives, Rogers County Clerk, and local libraries. The primary and secondary source information collected during the archival search was used to develop a resource specific historic context, discussing the structures association and significance within the larger Route 66 corridor. In addition, Tanya prepared a detailed description of the bridge and its surroundings. The HAER documentation prepared was used by ODOT as mitigation for the removal of the structure from vehicular traffic.

05/12-02/13	**ODOT, HAER Documentation of 9 ODOT Bridges, Bryan, Logan, Payne, Sequoya, Okfuskee, Craig, Creek, and Pittsburg counties, OK.** Senior Architectural Historian performed intensive level archival research for 9 bridges in various counties in Oklahoma. Repositories visited included the County Clerk's Office for each county, local libraries and archives, Oklahoma State Archives, and Oklahoma Historical Society archives. Archival quality digital photography that meets the National Park Service standards for digital photography was taken of one of the two Bryan County bridges documented during this project. One HAER was prepared for each bridge, which served as mitigation for the removal of the structures from vehicular traffic. ODOT accepted the documentation in 2013 and posted the reports on their website for public viewing.
10/11-04/12	**ODOT, HAER Documentation of 5 ODOT Bridges, Osage, Pawnee, Oklahoma, Jackson, and Harmon counties, OK.** Architectural Historian prepared HAER reports for five bridges in various counties in Oklahoma. Intensive level research for each bridge was conducted at various repositories in Oklahoma. Photo documentation of each bridge was undertaken to record the current conditions of the structure within its environment. The documentation was completed for ODOT and served as mitigation for the demolition of the structures. The documentation was accepted by ODOT in 2012 and was posted on their website for public viewing.
03/10-06/10	**Dallas Area Rapid Transit (DART), HAER Documentation of the Evans Road Rock Structure, San Antonio, Bexar County, TX.** Architectural Historian prepared the HAER documentation for the Evans Road rock structure in San Antonio, Texas. The document included archival black and white photographs, historic context, and detailed architectural description. The document served as mitigation for its removal from vehicular traffic. The documentation was accepted by the National Park Service in 2010.
01/08-07/09	**U.S. Army Corps of Engineers, Fort Worth District, Mitigation of Architectural Documentation Central City Portion of the Trinity River Master Plan, Fort Worth, TX**. Architectural Historian assisted in preparing HABS-like documentation of approximately 20 structures in the historic North Fort Worth business community, as well as assisting in completion of National Register nominations for 12 commercial buildings dating to the 1920s and 1930s.

Firm	AECOM Technical Services, Inc.		
Name	Derek Chisholm, AICP, LEED	Years of Relevant Experience with this Employer	5
Title	NEPA	Years of Relevant Experience with Other Employer(s)	23

Degree(s)/Years/Specialization			BS/1993/Organizational Management MPA/1997/Environmental Planning Specialty
Active Registration Number/State/Expiration Date			FHWA-NHI-142005 NEPA and Transportation Decision-Making Nov 4-6, 2014 American Institute of Certified Planners #147159 2011 LEED Green Associate (#10148303) 2014 Envision Sustainable Professional Certified in Charrette Management by National Charrette Institute (2006)
Year Registered	N/A	Discipline	N/A
Contract Role(s)/Brief Description of Responsibilities			**NEPA.** Derek is a senior-level NEPA expert and Project Manager, living in Louisiana, with over twenty-five years of progressive experience. He has managed complex, conceptual planning and NEPA studies for different State DOTs, FHWA, and FTA. Derek was recruited from the public sector in by a regional consulting firm, Parametrix, Inc., in Portland Oregon. He was hired to work on the Columbia River Crossing, at the time the largest public works project on the West Coast. The project included conceptual design and NEPA for a new Interstate bridge across the Columbia River. The project faced numerous challenges related to displacements, endangered species, and the need to acquire property from a National Landmark. He was co-located with the various agencies and contractors on a multi-year effort that resulted in committed federal funding, a Record of Decision, local and federal permits, a well-developed conceptual design, and a design-build procurement package. He started as the Built Environment Manager, and later managed the entire NEPA team. This multi-year assignment helped him develop expertise in managing complex projects with multi-disciplined teams. He is a very experienced manager; his two degrees have a management focus, and he currently trains and oversees all AECOM Transportation Project Managers in the Gulf South. His projects are routinely delivered ahead of or on schedule and for the originally contracted value. Derek has contributed to numerous other EIS's and EA's Nationally and has spent years working closely with the local AECOM Team on projects including the I-49 Lafayette Connector and the Jimmie Davis Bridge. Derek, and the projects that he has helped lead, have won numerous awards, some of which are shown below. In 2014, after 14 years of experience in Portland, Oregon, including work as an Adjunct Professor and service as the Chair of his local Planning Commission, Derek moved back to the South, to work with URS in New Orleans. Following the AECOM/URS merger, he became an Associate Vice President with AECOM. In 2016, Derek was elected the President of the Louisiana State Chapter of the American Planning Association. In 2018, he contributed chapters to the books Bicycle Urbanism and the ASCE's Engineering for Sustainable Communities.

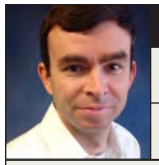
Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
10/16-Ongoing	**LADOTD State Project No. H.004273.5, I-49 Lafayette Connector Project, Lafayette, LA**. The team is currently completing the Functional Plan for the I-49 corridor in Lafayette is structured around a context sensitive solutions approach. Mr. Chisholm serves as the bridge between the public and stakeholder involvement of the CSS process and the environmental team. Mr. Chisholm set up the comment management system and is facilitating the Section 106 consultation.
03/19-Ongoing	**Gordie Howe International Bridge, Detroit, MI to Windsor Canada.** AECOM is delivering the longest span bridge in North America. Mr. Chisholm is assisting the project based on his previous experience working on sustainable design and construction issues for similar projects. He is helping in the pursuit of both LEED and ISI Envision certifications for the bridge and portals.
11/17-Ongoing	**LADOTD State Project No. H.001779.2, Jimmie Davis Bridge Supplemental EA, Bossier and Caddo Parishes, LA.** Mr. Chisholm has served as a Senior Advisor on this project, providing quality control review and assisting on complex issues related to bicycling connectivity, Section 4(f) and the final FHWA comments on the preliminary, draft Supplemental Environmental Assessment.
03/06-02/13	**Columbia River Crossing, Portland, OR.** This project included a major bridge over a navigable waterway with multi-modal improvements between Portland Oregon and Vancouver Washington, including the extension of the Portland Light Rail Transit system. As the Consultant Environmental Team Manager, Mr. Chisholm worked with the design teams and others to prepare environmental documentation, plan amendments, and numerous impact analyses. Various complex tasks were managed by Mr. Chisholm and his team including reburial of tribal remains, deminimis negotiations for park impacts, navigation and aviation vertical constraints, a Biological Opinion and take, construction phasing, marine mammal protection, and more. The environmental work won National Environmental Excellence Awards for its Climate Change Evaluation and the Fish Hydro-acoustics Impacts Study. Mr. Chisholm started as the Built Environment Manager, and later managed the entire NEPA team. ODOT and WSDOT Respective Leads for Project, Nancy Boyd (WsDOT) And Kris Stricler (ODOT) - thanking the team at the release of the FEIS: "You all deserve a pat on the back and we can't say congratulations enough. This is an achievement that the entire country will look to." WSDOT, SW Region Headquarters sharing key stakeholder input on one of the many technical reports authored by Mr. Chisholm: "I wanted you all to be aware of some of the excellent work that has been done by the Parametrix team working on CRC: ….from Metro President David Bragdon: "CRC project staff's memo in our materials ("Impacts of the CRC Project on Land Uses in Oregon and Washington") is the best document I've seen so far in this process. It contains not just data, but wisdom. It goes a long way to addressing my concerns. References**:** Client side NEPA PM – Heather Wills (now Senior Consultant with WSP). 503-478-2873. hwills@wsp.com Client NEPA DPM, and PM near the end of the project – Steve Morrow (now WFLHD Environmental Specialist) 360-619-7811. stephen.morrow@dot.gov ROD - FHWA-WA-EIS-08-01-F. 12/07/2011
11/2018-Ongoing	**FHWA Synthesis Report on Automated Vehicles and NEPA, Nationwide.** Mr. Chisholm is the Project Manager for this national study of the manner in which automated vehicles are being incoorpate in NEPA analysis. The draft report has been submitted to the FHWA Project Manager. It includes over a hundred pages with a literature review covering all relevant legislation and guidance as well as the findings from numerous modeling studies showing the benefits of platooning, connectivity and other advancements on highway system performance. The team interviewed various subject matter experts and DOT leaders who were working on AV deployment projects and NEPA studies, nationwide.

Firm	AECOM Technical Services, Inc.		
Name	Lou Costa	Years of Relevant Experience with this Employer	21
Title	NEPA	Years of Relevant Experience with Other Employer(s)	31

Degree(s)/Years/Specialization			BA/1964/Political Science and History; MCP/1970/City Planning and Urban Design NHI Course 142005, "National Environmental Policy Act (NEPA) and Transportation Decision Making" Introduction to Federal Projects and Historic Preservation offered through the General Services Administration
Active Registration Number/State/Expiration Date			N/A
Year Registered	N/A	Discipline	Environmental
Contract Role(s)/Brief Description of Responsibilities			**NEPA**. Lou will assess built environment impacts using skills developed over 50 years in the environmental analysis of highway and transit facilities as well as the management of other transportation, and historic preservation projects.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
07/15-Ongoing	**LADOTD State Project No. H.004273.5 I-49 Lafayette Connector Supplemental EIS**. Task Lead for preparation of the SEIS for the 5.5-mile segment of I-49 South through urban area of Lafayette, LA. This assignment includes management of the Section 106 process for the project-both the Standing Structures Inventory Update and the consultation process. To date work has involved preparing the Inventory Update and coordinating with the CSS and design team members in a Concept Refinement Process to identify alternatives to be studied in the SEIS.
02/03-01/08	**LADOTD State Project No. 700-92-0011 I-49 South - Raceland to Westbank Expressway EIS, Lafourche, St. Charles, and Jefferson Parishes, LA.** Project Manager for the EIS for 38 miles of interstate highway in the US 90 corridor. Led a team providing line and grade, public outreach, traffic analysis, website development, cultural resource investigation, and preparation of supplemental environmental reports. Originally the project was intended to prepare two EISs for each of two sections of independent utility. Following the review of the DEIS for SIU 1 comments and in response to the 2005 hurricane season, a single EIS was undertaken. AECOM performed line and grade and public outreach services as well as program management. Louis was the lead author of the EIS document. A ROD was issued by FHWA in 2008. This project was one of the first LADOTD projects to include a Project Management Plan mandated for mega-projects by SAFETEA-LU.
10/00-10/05	**LADOTD State Project No. 799-99-0230 I-49 South Lafayette Regional Airport to LA 88 EIS, Iberia, Lafayette, and St. Martin Parishes, LA.** Deputy Project Manager for an EIS for 10.8 miles of new urban and suburban interstate highway in the US 90 alignment. Major issues included highly congested intersections at railroad grade crossings in industrial areas and community opposition. A ROD was issued by FHWA in 2005

11/00-12/06	**LADOTD State Project No. 700-99-0230 I-49 South - Wax Lake Outlet to Berwick EIS, St. Mary Parish, LA.** Project Manager for an EIS for 9.3 miles of rural and suburban interstate highway in the US 90 alignment plus a 1-mile rural access road. Wetlands were largely avoided by the use of the existing alignment, but Louisiana Black Bear habitat and the proximity of a main line railroad paralleling US 90 were major concerns. The project included an extensive public participation program. Work involved standardizing travel lane widths, adding safety shoulders, and providing interchanges, frontage roads, and drainage improvements. A ROD was issued by FHWA in 2006.
01/12-03/14	**Maryland Transit Authority, Purple Line EIS, Suburban Washington, D.C.** Member of the EIS team for the preparation of this document. Primary areas of his responsibility were the construction impacts, visual assessment, indirect and cumulative sections, and the responses to comments. The project received the 2015 FTA Outstanding Achievement Award for Excellence in Environmental Document Preparation in the EIS category. A ROD was issued by FTA in 2014.
07/08 – 08/12	**Metropolitan Atlanta Rapid Transit Authority, Atlanta BeltLine Tier 1 EIS, Atlanta, GA.** Member of the EIS team for this major transit project to create a 23-mile light rail system and trails encircling the inner city of Atlanta in existing railroad corridors, including the creation of four major transfer facilities where the new rail line intersects with the existing MARTA heavy rail transit system. Mr. Costa prepared the transportation and land use sections and performed a quality control review of the other chapters. He also prepared the ROD that was issued by FTA in 2012.
1995-1997	**Regional Transit Authority, Canal Streetcar EIS, New Orleans, LA.** Agency Project Manager for the reintroduction of streetcar service on Canal Street. Work on the EIS began following a Major Investment Study. The scope included a new streetcar storage and maintenance facility, improvements to the existing streetcar manufacturing and maintenance facility, a transfer terminal at the outbound end of the line, and a connection to the Riverfront Line. Noise, utility conflicts, and historic preservation were major issues. A ROD was issued by FTA in 1997.
05/13-07/15	**LADOTD, State Project No. H.001779.5 Red River Bridge at Jimmie Davis Highway (LA 511) EA, Bossier and Caddo Parishes, LA.** Project Manager for an Environmental Assessment (EA) to improve capacity of the LA 511 crossing of the Red River. Major concerns are community concern that the project is long overdue, commercial relocations, impacts to wetlands, and the inclusion of a shared use trail on the bridge to connect the existing trails on each side. A FONSI was issued by FHWA in 2015.
06/01-07/03	**LADOTD, State Project No. 700-26-0254 Harvey Boulevard – Wall Boulevard to Engineers Road EA, Jefferson and Plaquemines Parishes, LA.** Project Manager for an EA for extending a suburban residential roadway on both an existing right-of-way and a new alignment to cross a canal to connect with Engineers Road (LA 3017). Major issues were noise, an adjacent seaplane facility, and community opposition based on expectation of truck traffic in a residential area. A FONSI was issued by FHWA in 2003.



Firm	AECOM Technical Services, Inc.		
Name	Jonathan Martinez	Years of Relevant Experience with this Employer	19
Title	Wetlands - Sect. 404 - Water Quality/Coastal Use	Years of Relevant Experience with Other Employer(s)	0

Degree(s)/Years/Specialization			BS/2002/Forestry/Ecosystem Management
Active Registration Number/State/Expiration Date			ACOE Wetland Delineation and Management; (Reg. IV) Training
Year Registered	N/A	Discipline	N/A
Contract Role(s)/Brief Description of Responsibilities			**Wetlands - Sect. 404 - Water Quality/Coastal Use**. Jonathan will provide wetlands and threatened and endangered species services for this project. He has nearly twenty years' experience, all in New Orleans, developing NEPA analyses and permit applications for LADOTD projects.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
07/15-Ongoing	**LADOTD State Project No. H.004273.5, I–49 Connector Supplemental EIS, Lafayette, LA.** Project planner for the SEIS conducted for 5.5–mile segment of I–49 South between I–49/I–10 interchange and the Lafayette Regional Airport through urban Lafayette. The work advances the project beyond the Record of Decision issued by FHWA in January 2003. While the project initially required a Reevaluation of the concept of the 2003 Selected Alternative, the passage of time, changes in the environment and community concerns have resulted in refinements to that concept substantial enough to warrant a Supplemental Environmental Impact Statement (SEIS). Jonathan wrote the natural environmental sections of the SEIS and assists with review of Phase I ESA and the Section 106 Consultation process. He performed the wetland delineation and preparation of the Section 404 permit and worked with other staff.
01/10-05/14	**Stage 0 Feasibility Study and Report, US 61/Tulane Avenue Carrollton Avenue to Claiborne Avenue, New Orleans, LA.** Environmental planner for project includes improvements such as median widening, cold mill and overlay with restriping and reconstruction of sidewalks along Tulane from S. Carrollton Avenue to S. Claiborne Avenue in Orleans Parish. The project will implement corridor improvements that will enhance quality of life, livability, and sustainability in the corridor and will support future transportation demand and adjacent land use including pedestrian, bike, and transit system operations. The completed corridor includes amenities associated with a complete streets concept.
10/06-12/07	**I-210 Stage 0 Corridor Study Route I-210, LADOTD, Lake Charles, LA.** (701-65-0710 & 701-65-0899) AECOM conducted a comprehensive traffic and transportation study for the Interstate 210 (1- 210) Corridor in Lake Charles to quantify deteriorating traffic operational conditions and to define transportation strategies that would contribute to long term mobility and the economic viability of the area. The 12-mile corridor spans between Interstate 10 (1-10) at Exit 34, to 1-10 west of the Calcasieu River and includes nine interchanges. The objective of the study was to identify and evaluate existing transportation resources and opportunities; to identify current and future transportation capacity and operational deficiencies; and to identify operational and geometric improvements for the 1-210 Corridor.

09/20-Ongoing	**Feasibility Study/Report/TEPR, College Drive, City of Baton Rouge, Parish of East Baton Rouge, LA.** Project Planner for the Design Study, Traffic Study, and Preliminary Plans for the completion of roadway improvement on College Drive and its vicinity between Perkins Road and Bawell Street inclusive of the interchange with I–10. The Design Study will include development of numerous concepts to enhance operational capacity and efficiency along the corridor while including Complete Streets and green infrastructure improvements. Preliminary alternatives were developed and documented using LADOTD Stage 0 Project and Scope and Environmental Checklists in order to apply for state and federal funding grant applications to expand funding for the project beyond the allocation of the parish MOVEBR bond funds. Completed the Stage 0 checklists.
0915-04/17	**Multimodal Transportation and Traffic & Safety Analysis, and Transportation Plan (NODTA), City of New Orleans Department of Public Works, New Orleans, LA.** Planner for multimodal transportation analysis and plan for the New Orleans Downtown and historic French Quarter neighborhood. Dozens on bicycle, pedestrian and vehicular alternatives were developed and evaluated and selected improvements were programmed, based on the integrated modal-access analysis, including pedestrian LOS modeling around transit stops. Extensive curb-use revisions, car-free zones, and other innovations were developed for the Quarter and CBD.
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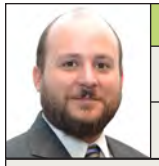


Firm	T. Baker Smith, LLC		
Name	Brady Trahan, PWS	Years of Relevant Experience with this Employer	16
Title	Wetlands/Sect. 404/Water Quality	Years of Relevant Experience with Other Employer(s)	5

Degree(s)/Years/Specialization			BS/2018/Microbiology
Active Registration Number/State/Expiration Date			N/A
Year Registered	N/A	Discipline	N/A
Contract Role(s)/Brief Description of Responsibilities			**Wetlands/Sect. 404/Water Quality**. Brady has 12 years of experience in wetland delineations and mitigation, Section 10/404 permitting, Coastal Zone Management permitting, oyster assessments, and environmental site assessments. He also has experience in coordinating the efforts of subcontractors, endangered species surveys, wildlife management plans, large-scale wetland and vegetation mapping projects, wading bird rookery surveys and general environmental permitting for oil and gas activities and commercial real estate development. Brady provides clients with permitting assistance with the U.S. Department of the Army Corps of Engineers (COE), U.S. Environmental Protection Agency, Federal Energy Regulatory Commission, U.S. Department of Interior Fish and Wildlife Service, Louisiana Department of Natural Resources, Louisiana Department of Wildlife and Fisheries, and other state and local agencies.

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
11/10-07/14	**S.P. 700-51-0110, Interchange for US 90/LA 318 Route US 90, LADOTD, St. Mary Parish, LA.** Principal in Charge. Oversight and coordination of the Stage 2 Environmental Assessment for the LA Highway 318 crossing over US Highway 90 alternative. Primary environmental focus was assisting with public outreach and completing a 340-acre wetland delineation.
01/14- 05/18	**S.P. H.010724, Pecan Island Road Bridge over The Chenal, LADOTD, Pointe Coupee Parish, LA.** Principal in Charge. Oversaw permitting and environmental services, including Coastal Zone Permit, SOVs, USACE permit drawings, wetland delineation, and NEPA documents & SOVs for off-system bridge replacement.
06/13-09/18	**S.P. H.010559, Bayou Mercier Road/Berard Canal Bayou, LADOTD, St. Martin Parish, LA.** Principal in Charge. Oversaw permitting and environmental services, including Coastal Zone Permit, SOVs, USACE permit drawings, wetland delineation, and SOVs for off-system bridge replacement.
06/13-12/14	**S.P. H.010598, Derrick Road Bridge, LADOTD, Iberville Parish, LA.** Principal in Charge. Oversaw environmental surveys, wetland delineation, NEPA document preparation and USACE permitting through LADOTD for the off-system bridge replacement project.
12/18 -07/19	**S.P. H.013144 - Pine Bluff Rd. / Drain to Cypress Creek OSBR, Ouachita Parish, LA.** Environmental Lead Professional. Responsible for environmental surveys, wetland delineation, NEPA package and USACE permit sketches through LADOTD for the replacement of two (2) bridge sites in Ouachita Parish.
12/18- 06/19	**S.P. H.013080 - McLemore Rd. / Bee Bayou OSBR, Richland Parish, LA.** Environmental Lead Professional. Responsible for environmental surveys, wetland delineation, NEPA package and USACE permit sketches through LADOTD for the replacement of one, 150' long bridge in Richland Parish.

Firm	AECOM Technical Services, Inc.		
Name	Michael Patorno, PE	Years of Relevant Experience with this Employer	27
Title	Project Principal	Years of Relevant Experience with Other Employer(s)	12

Degree(s)/Years/Specialization			MS/1994/Civil Engineering BS/1983/Civil Engineering
Active Registration Number/State/Expiration Date			PE.0024197/LA/9.30.23 Additional active licenses in AL, AR, TX, MS
Year Registered	1991	Discipline	Civil Engineer
Contract Role(s)/Brief Description of Responsibilities			**Project Principal**. Michael will be the Principal-in-Charge for this contract. He is a professional engineer with 39 years of experience as a Program and Operations Manager overseeing the programs within the gulf coast, including both federal and non-federal programs. Programs and projects include planning, designs, program and construction management, and permitting. This work includes oversight and management of various departments in transportation, water resources, structural, geotechnical, general civil, program and construction management, as well as environmental permitting and regulatory. Mike has run major programs as large as $2 billion in size and spanning many years. These major programs required managing staff from over a dozen separate AECOM offices while providing coordination with numerous federal, state, and local stakeholder agencies, as well as with no-governmental organizations. **Michael meets MPR 1.**

Experience Dates (mm/yy - mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
01/07-01/17	**United States Army Corps of Engineers, Program Management and Engineering Support Services, USACE-Hurricane Protection Office (HPO), Jefferson Parish and New Orleans, LA.** Mike serves as Program Manager responsible for managing this 10-year program to initially repair and eventually upgrade the City of New Orleans Hurricane Protection System. This program included working with the USACE side by side as well as with contractors on design build delivery systems for this over $2 billion in improvements. In a follow-up contract to the Task Force Guardian program to make repairs after Hurricane Katrina, we marketed and were awarded a contract to assist the HPO with providing improvements to the levee system in New Orleans East. Includes design and construction of floodwalls, levees, and gates, and requires utility relocation, pump station remediation, bridges, roadways, and real estate coordination.

07/94-05/06	**United States Army Corps of Engineers, East of Harvey Floodwall, USACE New Orleans District, Jefferson Parish, LA.** Program Manager who led a team of engineers in the design of 8,000 feet of floodwall in a heavy industrial area with limited construction area. Provided support to the design team on a number of technical and coordination issues. Project required designs for the foundation, hydraulics, concrete, and steel as well as development of relocation and ROW needs and right-of-way. All design work was completed in a short time frame. Cost: $2 million design; $136 million construction.
06/98-04/05	**State Project No. 98-026-B: Louisiana Department of Transportation & Development (LADOTD) Program Management, 1998 Road Bond Improvement Program, Jefferson Parish, LA.** Principal for Jefferson Parish's $275 million Program, which included 112 roadway and bridge projects throughout the Parish. The project included writing contracts and amendments for engineers' contracts; planning meetings; coordination of consultants, Parish departments, Parish's politicians, SELA, LDOTD (when necessary), railroad companies and public and private utilities; approving consultant invoices and construction cost estimates; oversight on design; review of plans and specifications submittals; scheduling; budget analysis; right-of-way acquisition support; construction oversight; review of contractor invoices and claims; and project closeout. As a part of this program, numerous intersections and signals were upgraded.
10/00-04/02	**State Project No. No. 450-15-0079: Louisiana Department of Transportation & Development (LADOTD), Interstate 10 Improvements (Clearview to Causeway), LA.** Principal for project including preliminary and final design of roadway improvements to Interstate 10 from Clearview Boulevard to Causeway Boulevard in Jefferson Parish. Improvements included an auxiliary lane addition connecting both interchange transition lanes. Widening included improvements to the bridge crossing over the Suburban Canal as well as transitioning near the Cleary Overpass.

AECOM

Section 17

AECOM
6th Avenue Viaduct
Substructure Replacement,
Denver, CO

Delivering a better world

17. Firm Experience

Firm Name	AECOM Technical Services, Inc.		Past Performance Evaluation Discipline(s)*	Bridge, Roadway, Traffic, Environmental
Project Name	I-49 Connector		Firm responsibility (prime or sub?)	Sub
Project Number	H.004273	Owner's name	Louisiana Department of Transportation and Development (LADOTD)	
Project Location	Lafayette, LA	Owner's Project Manager	Jenny Fu	
Owner's Address, Phone, Email	PO Box 94245, Baton Rouge, LA 70804-9245; 225.379.1321; zhengzheng.fu@la.gov			
Services Commenced by This Firm (mm/yy)	07/15	Total Consultant Contract Cost ($1,000's)	$32,000	
Services Completed by This Firm (mm/yy)	Ongoing	Cost of Consultant Services Provided by This Firm ($1,000's)	$11,000	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

✓ Bridge Design ✓ Architectural Design

✓ Retaining/Noise Wall Design ✓ Environmental Permitting

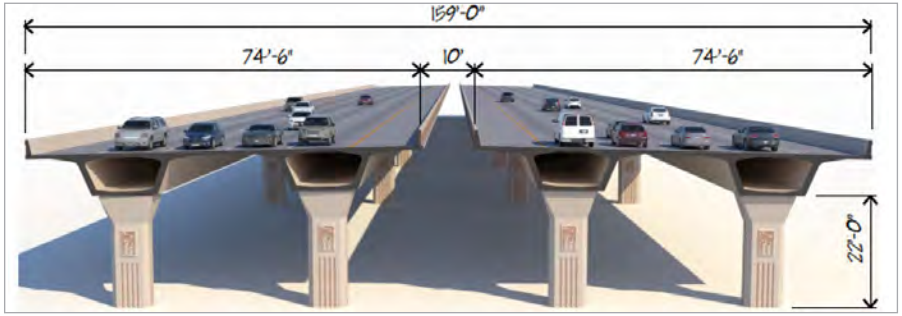
The 5.5-mile I-49 Lafayette Connector project is one of the largest undertaken by the DOTD, with an estimated construction cost of $1.3 billion. AECOM's roles include were multi-discipline primarily supporting CSS, NEPA and structures. The following paragraphs highlight AECOM's structural design efforts to date.

The AECOM Team is responsible for the design and coordination of all structural design, including a 2-mile continuous elevated six-lane interstate viaduct with signature feature bridge components. Other structure requirements along the corridor include (2) new grade-separated interchanges at Kaliste-Saloom and University/Surrey, I-49 and University Bridges over the Vermillion River and the development of over (25) retaining and noise wall structures. **The AECOM Team developed both superstructure and substructure designs in accordance with DOTD BDM criteria**. Design work also required the development of conceptual railroad design submittals for (2) grade separations at BNSF and LDRR. These submittals were led by AECOM's Railroad Coordinator, Jonathan McDowell.

The AECOM Team performed an alternative structural analysis **evaluating precast LG Girder, LU Girder and Precast Segmental Girder alternatives** for a 2-mile, twin-viaduct structure through downtown Lafayette. The alternative analysis efforts evaluated cost (initial & long-term), maintenance of traffic and bridge aesthetic criteria to identify the best valued structure type. The bridge typical section consists of two separate 75-ft wide structures that provided four (4) continuous through lanes with 12-ft shoulders. LG & LU Girder designs utilized **DOTD's BDM Design Charts while MIDAS and CSiBridge software** helped identify segmental girder requirements.

The alternative design analysis required at the Kaliste-Saloom Interchange required the AECOM Team to evaluate curved steel plate girder, steel trapezoidal girder and precast segmental alternatives for this multi-level interchange. This 3-way, elevated interchange had numerous geometric, right-of-way, and utility coordination challenges that warranted the development of four (4) curved **flyover structures supported on hammerhead, C-pier and straddle bent configurations with concrete pile foundations on prestressed concrete pile groups**.

AECOM Team: Ken Butler, Gary Maji, Chris McKown, Steve Haynes, Daniel Boyd, Sean Voisinet, Jonathan McDowell, Derek Chisholm, Lou Costa, Jonathan Martinez



I-49 ML Typical Section

Firm Name	AECOM Technical Services, Inc.		Past Performance Evaluation Discipline(s)*	Bridge, Roadway, Traffic, Environmental
Project Name	South Academy Boulevard		Firm responsibility (prime or sub?)	Prime
Project Number	N/A	Owner's name	El Paso County Department of Public Works	
Project Location	Colorado Springs, CO	Owner's Project Manager	Brett Hartell	
Owner's Address, Phone, Email	3275 Akers Dr, Colorado Springs, CO 80922; 719.217.4263; bretthartell@elpasoco.com			
Services Commenced by This Firm (mm/yy)	05/20	Total Consultant Contract Cost ($1,000's)	$1,900	
Services Completed by This Firm (mm/yy)	10/21	Cost of Consultant Services Provided by This Firm ($1,000's)	$1,500	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

- ✓ Bridge Rehabilitation
- ✓ Retaining/Noise Wall Design
- ✓ Architectural Design
- ✓ Roadway & Traffic Design
- ✓ Preventative Maintenance & Repair
- ✓ NDT/Evaluation
- ✓ Bridge Inspection
- ✓ Environmental Permitting

AECOM led full-disciplinary design (i.e. project management, survey, environmental permitting, roadway, traffic, and bridge design) for the 2-mile widening of South Academy Boulevard between I-25 and Proby Parkway in Colorado Springs, CO. Structural design required for this rehabilitation project includes the widening design for three (3) pair of bridges and over 34,000 square feet of structural noise walls. The following highlight the required bridge rehabilitation design efforts:

South Academy Boulevard/Fountain Creek. Design for these 460-ft, 5-span, prestressed AASHTO Type IV girder bridges required a detailed structural inspection, substructure scour mitigation design, nondestructive testing to evaluate the existing deck condition, bridge deck and substructure widening, and expansion joint reconstruction. **The design team worked integrally with bridge hydraulics to identify, evaluate and design foundation scour mitigation countermeasures** to the existing steel pile supported pier footings using compaction grouting techniques, constructing concrete pile collars and placing riprap to stabilize the substructure and increase the structure durability.

South Academy Boulevard/US 85 and BNSF RR. The design for these 637-ft, 6-span, steel plate girder bridges over US 85 and BNSF required extensive bridge inspection, railroad coordination, nondestructive testing to evaluate the existing deck condition, a steel fatigue assessment/load rating analysis to evaluate the remaining life of the fatigue prone details, superstructure/substructure widening and expansion joint and bearing repair details to extend the bridge design life. As part of the steel girder fatigue assessment, **we performed a detailed structural inspection of the longitudinal plate girder welds, web plate buckling locations and transverse stiffener/diaphragm connection plate weld details to record the existing conditions, document the appropriate AASHTO fatigue category and measure crack propagation**. This information was used to estimate the remaining fatigue life of the structure by using the AASHTOWare BrR modeling in accordance with AASHTO standards.

South Academy Boulevard/Bradley Road. Bridge rehabilitation for these 183-ft, 3-span, parabolic concrete T-beam bridges required a detailed structural inspection, NDT testing to evaluate the existing deck and superstructure/substructure widening. This design required bridge widening using precast, prestressed concrete box girders and single pier column substructures supported on drill shaft foundations. **AECOM performed an infrared thermographic inspection to locate/quantify deck delaminations and debonding of the overlay and took deck cores to determine the chloride ion content of the concrete deck to evaluate the superstructure deterioration and provide deck rehabilitation details**.

AECOM Team: Gary Maji, Chris McKown, Steve Haynes, Sean Voisinet

Firm Name	AECOM Technical Services, Inc.		Past Performance Evaluation Discipline(s)*	Bridge, Roadway, Traffic, Environmental
Project Name	Virginia DOT (VDOT) Statewide Bridge Services Contract		Firm responsibility (prime or sub?)	Prime
Project Number	N/A	Owner's name	Virginia Department of Transportation	
Project Location	Statewide in Virginia	Owner's Project Manager	Todd Marshall, PE	
Owner's Address, Phone, Email	731 Harrison Avenue, Salem, VA 24153; 540-387-5460; Todd.Marshall@VDOT.Virginia.gov			
Services Commenced by This Firm (mm/yy)	10/18	Total Consultant Contract Cost ($1,000's)	$ 7,400	
Services Completed by This Firm (mm/yy)	Ongoing	Cost of Consultant Services Provided by This Firm ($1,000's)	$ 6,100	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

- ✓ Bridge Design
- ✓ Bridge Rehabilitation
- ✓ Truss Rehabilitation
- ✓ Environmental Permitting
- ✓ Preventative Maintenance & Repair
- ✓ NDT/Evaluation
- ✓ Bridge Inspection
- ✓ Roadway & Traffic Design

For more than 26 years, AECOM has provided engineering service for bridge repair, maintenance, rehabilitation, and design on a task order basis for routine and emergency projects across all nine of Virginia's transportation districts. Under this contract, AECOM provided full-disciplinary design (roadway, traffic, environmental) services completing dozens of tasks simultaneously. We have been able to manage these successfully due to the collaboration of professionals from multiple AECOM office across the country. The following projects highlight our team's diverse and relevant bridge preservation experience:

Bridge Deck Evaluation and Rehabilitation

Thorough assessment of bridge deck condition allows our engineers to develop targeted and cost-effective rehabilitation programs. Our field assessments techniques, such as chloride ion profiles, infrared thermography, impact echo, 3D GPR, and digital image processing, have been used successfully to develop deck rehabilitation programs for more than 60 bridges in Virginia on the current and previous terms of this on-call contract, including four bridges on I-77 over Clear Fork Creek, 22 structures on Route 360 corridor, and five bridges in the VDOT Lynchburg District.

Bridge Superstructure Replacement

Development of bridge superstructure replacement plans often requires careful consideration of traffic impacts and a detailed sequence of construction. We have designed superstructure replacement projects for more than 200 bridges in Virginia on the current and previous terms of this on-call contract. Our focus on constructability and cost-effective solutions proved successful on such tasks as Route 17 over NS Railway, Route 601 over Route 29, and a single task with 34 bridges in the VDOT Salem District, which were bundled into six separate construction contracts.

Bridge Superstructure Repairs

Under the current and previous terms of this contract, AECOM has completed more than 50 superstructure repair projects, ranging from repair of impact damage at Route 723 over I-66 or retrofit of fatigue cracking at Route 58 over NS Railway to truss floor system replacement at Route 685 over Craig Creek and emergency bearing replacements on Interstate 81 over Reed Creek.

AECOM Team: Rob Dean, Bobby Prince, Ed Zhou

Firm Name	AECOM Technical Services, Inc.	Past Performance Evaluation Discipline(s)*	Bridge, Roadway, Traffic, Environmental
Project Name	CDOT NPS (Non-Project Specific) General Engineering Services	Firm responsibility (prime or sub?)	Prime
Project Number	N/A	Owner's name	Colorado Department of Transportation
Project Location	Denver, CO	Owner's Project Manager	Tristan Siegel
Owner's Address, Phone, Email	2829 W Howard Pl, Denver, CO 80204; 303-757.9196; tristan.siegel@state.co.us		
Services Commenced by This Firm (mm/yy)	06/18	Total Consultant Contract Cost ($1,000's)	$5,000
Services Completed by This Firm (mm/yy)	Ongoing	Cost of Consultant Services Provided by This Firm ($1,000's)	$4,500

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

- ✓ Bridge Design
- ✓ Bridge Rehabilitation
- ✓ Retaining/Noise Wall Design
- ✓ Roadway & Traffic Design
- ✓ Preventative Maintenance & Repair
- ✓ NDT/Evaluation
- ✓ Bridge Inspection
- ✓ Environmental Permitting

The AECOM Team currently holds several NPS (i.e. IDIQ) general and specialty bridge design service contracts to provided "as-needed" support to CDOT and Staff Bridge for the development of transportation bridge replacement, bridge evaluation, bridge maintenance & repair, and emergency design services. This work also included roadway, traffic and environmental design services as necessary to support the bridge design. The following projects highlight our team's diverse and relevant bridge design experience:

SH 59/I-70 Emergency Bridge Replacement. After a truck accident closed the SH 59 Bridge over I-70 in Eastern Colorado, CDOT, AECOM and Lawrence Construction used a CMAR alternative delivery to replace the bridge and bring the interchange geometry to **current AASTHO standards re-opening the interchange 75 days after the initial closure**. The project team accelerated construction maximizing the use of prefabricated components including steel sheet pile walls and precast box girders with overhang segments.

I-76 Bridges over Sand Creek/I-70 Bridge Floyd Hill. AECOM Team **installed and monitored bridge instrumentation to evaluate the existing steel fatigue life, structural movements and load carrying capacity** of two (2) twin, skewed steel girder bridges along I-76 and I-70 in metro Denver. The I-76 Bridges/Sand Creek are 50-yr old severely skewed steel girders that are nearing replacement. These bridges see over 75,000 AADT but were not yet programmed for replacement. AECOM installed bridge instrumentation to **evaluate remaining steel fatigue life, performed onsite load testing** and recommended steel retrofit details at locations that echoed our FEM analysis results. AECOM also installed instrumentation on the I-70 Bridges at Floyd Hill to evaluate, monitor and **predict bridge movements by beta-testing our FEM models with onsite readings**. This analysis helped CDOT to better predict bridge repair effectiveness and help prolong structure design life until bridge funding could be identified.

I-76 Bridges over York Street. As part of a blended team, AECOM is providing bridge and constructability design services for the rehabilitation or replacement of the I-76 Bridges over York Street in metro Denver. These bridges carry 75,000 AADT with over 20% trucks and maintaining traffic (MOT) throughout reconstruction is critical. Throughout the preliminary design phase, **AECOM evaluated bridge widening, rehabilitation and replacement alternatives** to identify a preferred structure alternative. MOT considerations required ABC alternatives including slide-in-bridge-construction, maximizing precast options, and unique phasing and roadway configurations considering **temporary bridge and overbuild scenarios** to confirm a cost-effective solution.

AECOM Team: Gary Maji, Sean Voisinet, Craig Parent, Kendra VanGorp, Ed Zhou

Firm Name	AECOM Technical Services, Inc.		Past Performance Evaluation Discipline(s)*	Bridge
Project Name	Repair Assessment of Bridge No. 93.1, I-20 EB to I-55 NB		Firm responsibility (prime or sub?)	Prime
Project Number	N/A	Owner's name	Mississippi Department of Transportation	
Project Location	Rankin County, MS	Owner's Project Manager	Scott Westerfield	
Owner's Address, Phone, Email	401 N West St, Jackson, MS 39201; 601.3589.7200; swesterfield@mdot.ms.gov			
Services Commenced by This Firm (mm/yy)	06/2020	Total Consultant Contract Cost ($1,000's)	$ 65	
Services Completed by This Firm (mm/yy)	06/2021	Cost of Consultant Services Provided by This Firm ($1,000's)	$ 65	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

- ✓ Bridge Rehabilitation
- ✓ NDT/Evaluation
- ✓ Preventative Maintenance & Repair
- ✓ Bridge Inspection

AECOM provided an in-depth field investigation report, conceptual finite-element modeling, bridge load rating analysis and repair recommendations for Bridge No. 93.1 in Rankin County, MS. This bridge is in generally fair condition, however, diagonal cracking of the concrete girders with moderate spalling was noted at the dapped girder ends which weakened the structural integrity of the bridge and warranted a load posting. Through an on-call engineering services contract, AECOM performed the following tasks:

Data collection/Plan review. AECOM performed a detailed review of the original "as-constructed" plans, bridge rehabilitation and widening plans and the bridge inspection reports to assess the existing structure conditions and identify critical concerns to help formulate an approach to the evaluating the structural integrity of the bridge. This 17-span, 1316.9-ft long structure included both simple- and continuous-span, multi-cell cast-in-place ("CIP") box girders supported on unlaminated neoprene pads and steel expansion bearings. Our team had noted that many of these dapped girder ends exhibited nib flexure and combined shear cracking and both shear corner and diagonal tension cracking.

Field inspection/Load rating analysis. This inspection consisted of exterior and interior inspection including accessing inside of the box girders. The inspection team used NDT inspection tools and techniques to quantify the existing conditions considering the box girder's general deterioration, loss of section and missing/corroded reinforcement. **This inspection determined the extent of the existing structure defects, bearing deterioration, rotation and movements and interior/exterior box girder damage** allowing the load rating team to more accurately evaluate the structure's condition. AECOM's LFD load rating was developed **using a three-dimensional finite element model (FEM) using CSiBridge software**. This modeling strategy provided a more accurate determination of the dead and live load distribution to each web compared with an approximate distribution factor method as outlined in the AASHTO Standard Specifications, 17th Edition.

Repair Recommendations. Based upon the bridge inspection and load rating results, the design team provided rehabilitation recommendations and prepared a conceptual cost estimate for bridge repair using determined plan quantities and typical unit costs. Repair recommendations included bearing repair/replacements, bridge deck seal using high molecular weight methacrylate (HMWM), concrete patching, expansion joint replacement and dapped girder rehabilitation. Dapped girder rehabilitation considered both **FRP (fiber reinforced polymer) wrap strengthening and full dapped girder reconstruction alternatives.**

AECOM Team:
Steve Haynes
Craig Parent
Landon Whitton

Firm name	Forte & Tablada, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	Retainer Contract for Bridge Preservation – Atchafalaya Floodway	Firm responsibility (prime or sub?)	Sub
Project number	H.009461.5	Owner's name	LADOTD c/o Stantec Consulting Services, Inc.
Project location	W. Baton Rouge, Iberville, and St. Martin Parishes in LA	Owner's Project Manager	Brian Johnson, P.E. (Stantec)
Owner's address, phone, email	1200 Brickyard Ln, Suite 400, Baton Rouge, LA 70802; brian.johnson2@stantec.com		
Services commenced by this firm (mm/yy)	10/15	Total consultant contract cost ($1,000's)	Unknown
Services completed by this firm (mm/yy)	04/19	Cost of consultant services provided by this firm ($1,000's)	$118.2

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

- ✓ Bridge Design
- ✓ Bridge Rehabilitation
- ✓ Retaining/Noise Wall Design
- ✓ Preventative Maintenance & Repair
- ✓ Bridge Inspection

As part of a Bridge Preservation retainer contract with LADOTD, Forte & Tablada, Inc., as a sub consultant to Stantec, provided engineering services for the rehabilitation of multiple bridges along I-10 between Baton Rouge and Lafayette. Bridge types included PPC and steel girder spans, steel grid deck, and slab spans. Scope of work included performing a detailed inspection, documenting deficiencies, and preparing rehabilitation plans for all bridges. Repairs included concrete spall repairs, concrete barrier rail repairs, joint replacements, heat straightening of steel girders impacted by over-height vehicles, painting of steel members, and steel grid deck repair/replacement. We also reviewed shop drawings and developed temporary barrier rail details that were used by the Contractor while making barrier rail repairs on the Atchafalaya Basin bridge.

Forte & Tablada, Inc. Team: Joffrey Easley

Firm name	Forte & Tablada, Inc.		Past Performance Evaluation Discipline(s)*	Bridge
Project Name	Retainer for Bridge Preservation – US90Z: Westbank Expressway Rehab		Firm Responsibility (Prime or Sub?)	Sub
Project Number	H.010017.5	Owner's name	LADOTD c/o HNTB	
Project Location	Jefferson Parish, LA	Owner's Project Manager	Dusty Bastion, P.E. (HNTB)	
Owner's Address, Phone, Email	1000 Perkins Rowe, Suite 640, Baton Rouge, LA 70810; dbastion@HNTB.com			
Services Commenced by This Firm (mm/yy)	01/21	Total Consultant Contract Cost ($1,000's)	Unknown	
Services Completed by This Firm (mm/yy)	09/21	Cost of Consultant Services Provided by This Firm ($1,000's)	$450.6	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

- ✓ Bridge Design
- ✓ Bridge Rehabilitation
- ✓ Preventative Maintenance & Repair
- ✓ NDT/Evaluation
- ✓ Bridge Inspection

Forte & Tablada, Inc., as a sub consultant to HNTB on a Bridge Preservation retainer contract with LADOTD, developed plans for the rehabilitation of the nearly 6-mile long Westbank Expressway in Jefferson Parish, LA. This bridge is composed of a concrete tub girder superstructure supported by concrete inverted tee bents with concrete column(s). Cracking of the inverted tee bents at the girder seats throughout the length of the bridge has been documented by LADOTD bridge inspectors for many years. Based on previous inspections and a pilot rehabilitation project, it was decided to epoxy inject all cracks greater than 0.016" and to coat the vertical surfaces of all bents with an elastomeric coating to improve the long-term performance of this bridge.

Due to the number of bents to be inspected (nearly 400) and time constraints, unique inspection procedures were developed to identify the girder seat cracks that require epoxy injection and their length.

1. Preliminary inspection of approximately thirty (30) cracks from a manlift;
2. Pressure washing the vertical bent surface in the vicinity of the girder seats;
3. Identification of suspect cracks using high-powered binoculars;
4. Capturing high-resolution images of the questionable cracks from the ground without the use of a man-lift;
5. Using procedures developed in-house to determine the crack width.

Forte & Tablada, Inc. Team: Joffrey Easley

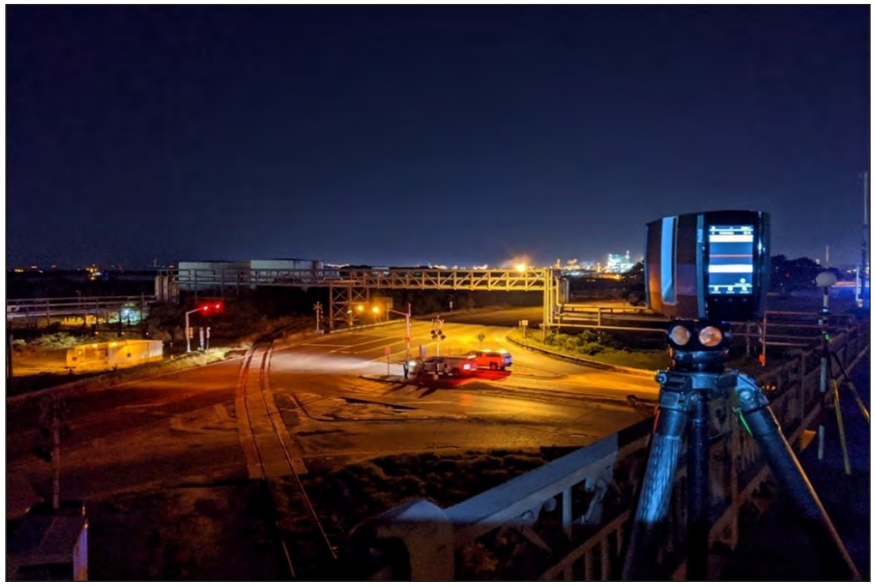
Firm name	Forte & Tablada, Inc.			Past Performance Evaluation Discipline(s)*	Survey
Project name	Calcasieu River Bridge Investigation			Firm responsibility (prime or sub?)	Prime
Project number	S.P. No. H.012083.5	Owner's name	LADOTD		
Project location	Calcasieu Parish, LA	Owner's Project Manager	Stanley Ard		
Owner's address, phone, email	1201 Capital Access Road, Baton Rouge, LA 70802; 225.379.1292; Stanley.Ard@la.gov				
Services commenced by this firm (mm/yy)	11/19	Total consultant contract cost ($1,000's)	$312.4		
Services completed by this firm (mm/yy)	N/A	Cost of consultant services provided by this firm ($1,000's)	$312.4		

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

✓ Survey
✓ Bridge Inspection
✓ Bridge Evaluation

Forte & Tablada provided laser scanning services for the I-10/Lake Calcasieu bridge in Lake Charles, LA. The purpose of this project is to analyze any movement of the sub and superstructure, as well as completing two sets of scans (cold and hot weather) to determine if there are any significant changes in the structure due to temperature change. Terrestrial scans were done underneath the bridge for 10 spans on the East and West side, on top the deck to capture the superstructure, as well as from the water below to capture the sub structure. In addition to the terrestrial scans, mobile Lidar was done for future planning.

Forte & Tablada, Inc. Team: Brent Campbell, Ross Wilson



Firm name	Wiss, Janney, Elstner Associates, Inc.		Past Performance Evaluation Discipline(s)*	Bridge
Project name	Danziger Lift Bridge Repair		Firm responsibility (prime or sub?)	Prime
Project number	Contract 4400009424, H.000303	Owner's name	Louisiana Department of Transportation and Development	
Project location	New Orleans. LA	Owner's Project Manager	Mark Bucci	
Owner's address, phone, email	1201 Capitol Access Rd., 6th floor, Baton Rouge, LA 70802; 225.379.1321; ZhengZheng.Fu@LA.GOV			
Services commenced by this firm (mm/yy)	07/19	Total consultant contract cost ($1,000's)	$1,386	
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$1,347 (to date)	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

- ✓ Movable Bridge Rehabilitation
- ✓ Bridge Inspection
- ✓ Instrumentation
- ✓ NDT/Evaluation
- ✓ Preventative Maintenance & Repair

The Danziger Lift Bridge is an electro-mechanical, tower drive vertical lift bridge that opened to vehicular traffic in 1984. The bridge was reportedly experiencing operational issues, which included the movable span no longer fitting into the available space between the towers as well as one corner of the bridge not seating properly. WJE was tasked with performing an inspection of relevant portions of the main span contributing to the reported operational issues, an in-depth inspection of the lift bridge machinery and electrical systems, and development of repairs to restore the long-term functionality and reliability of the bridge. WJE installed instrumentation and monitoring equipment during the field investigation to evaluate the bridge's operations over an extended period. Based on the findings from our investigation, WJE prepared emergency repair plans and specifications to address some of the operational issues with the bridge. Significant findings and the associated remedies included the following.

- Improving the lift span riding surface on the steel orthotropic deck with the installation of polyester polymer concrete repairs.
- Identification of pinion shaft bearing damage and the subsequent restoration of the pinion shafts and bearings.
- Addressing the contact of the lift span during warm temperatures with the approach spans by monitoring the joint movements and identifying that daily thermal movements of the approach spans were causing the issue, and that by cleaning the expansion joints, the issue was alleviated.

- Design of a new lift span skew control system after existing components were removed from the bridge and could not be relocated or replaced in kind.
- Design of electrical controls for the clutches associated with the span drive differentials.
- Strain gage testing to measure span balance and implementation of counterweight changes to improve seating of the span.
- Strain gage testing also showed that the span drive differentials on both towers were not functioning properly requiring coordination with the manufacturer to properly adjust the clutches in the differentials.
- Inspection of trunnion bearings and the installation of an automated acoustic monitoring system to assess bearing performance until scheduled replacements are required.

Wiss, Janney, Elstner Associates, Inc. Team: Jonathan McGormley, John Williams, Gareth Rees

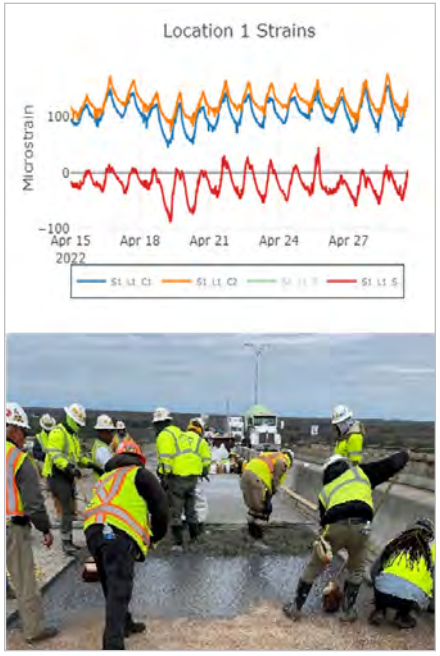
Firm name	Wiss, Janney, Elstner Associates, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	Hale Boggs Memorial (Luling) Bridge Deck Overlay Repair Consultation and Instrumentation Services	Firm responsibility (prime or sub?)	Sub
Project number	H.012617.6	Owner's name	Louisiana Department of Transportation and Development
Project location	Luling, St. Charles Parish, LA	Owner's Project Manager	Chris Guidry
Owner's address, phone, email	1201 Capitol Access Rd., 6th floor, Baton Rouge, LA 70802		
Services commenced by this firm (mm/yy)	03/21	Total consultant contract cost ($1,000's)	$499
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$332

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

- ✓ Bridge Inspection
- ✓ Instrumentation
- ✓ NDT/Evaluation
- ✓ Preventative Maintenance & Repair

WJE is providing technical guidance and quality assurance assistance to the LADOTD and the contractor repairing the concrete overlay on the steel orthotropic bridge deck spans of this twin pylon, cable-stayed bridge over the Mississippi River. The overlay consists of an epoxy and fabric underlayment system with embedded granite chips overlain by steel fiber reinforced concrete (SFRC). WJE's scope of work included review and modifications to the original overlay specifications to promote better constructability and performance, development of different overly repair methods to accommodate contractor materials on-hand, location and marking of overlay repairs, QA/QC during placement of the overlay repairs, and development and implementation of a long-term monitoring plan to assess the performance of the various repair methods. For the monitoring system, WJE installed a series of strain gages at each layer of the overlay system in order to determine the stability and long-term integrity of each selected patch repair. A duplicate set of gages were installed at each repair location for redundancy and comparison. The instrumentation reports to a central datalogger which transmits the data via cellular modem to a web-based server where it is displayed on a webpage. Over the next two years, WJE will monitor the three study patch repairs with the objective of providing recommendations to the DOTD for future overlay repair or replacement options.

As part of its work, WJE was tasked with assessing the cause of the current overlay failures. This included visual examination of the failures, in-situ bond tests of the SFRC to the epoxy underlayment, and petrographic examination of the concrete to epoxy bond surfaces. During overlay repairs, WJE engineers were present to provide QA services and technical guidance to the contractor. This work included Schmidt rebound hammer testing of concrete surfaces and subsequent petrographic examination of concrete removed from repair patches damaged by rain during placement.



Wiss, Janney, Elstner Associates, Inc. Team: Jonathan McGormley

Firm name	Wiss, Janney, Elstner Associates, Inc.	Past Performance Evaluation Discipline(s)*	Bridge
Project name	East Roundbunch Road over Cow Bayou	Firm responsibility (prime or sub?)	Prime
Project number		Owner's name	Texas Department of Transportation – Bridge Division
Project location	Orange County, TX	Owner's Project Manager	Courtney Holle, PE
Owner's address, phone, email	Austin, TX, 512.416.2717; Courtney.Holle@txdot.gov		
Services commenced by this firm (mm/yy)	06/14	Total consultant contract cost ($1,000's)	$3,409
Services completed by this firm (mm/yy)	06/16	Cost of consultant services provided by this firm ($1,000's)	$1,048

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

- ✓ Movable Bridge Rehabilitation
- ✓ Bridge Inspection
- ✓ Preventative Maintenance & Repair

WJE provided the mechanical and electrical engineering for the replacement of all machinery on this center bearing swing span bridge. WJE was also responsible for the structural engineering and overall rehabilitation project. Moveable bridge services included a scoping inspection, bridge design report, preparation of plans, specifications, and cost estimate for all machinery, as well as provision of construction services. The intent of the project was to rehabilitate this historic design structure to provide long-term reliable service.

Essential design objectives were to replace the deteriorated and outmoded machinery systems with current state-of-the-art systems that would require less maintenance and be more reliable and efficient than the existing drive which had experienced failures and was in a state of advanced wear. The mechanical design provided complete details for new span drive machinery and support machinery in accordance with the current AASHTO requirements. The span drive machinery was comprised of components with a proven history of utilization on movable bridges and was powered by an electric motor. The support machinery included a new bronze plain center bearing, balance wheels, and a wedge at each corner driven by an electro-mechanical drive train.

The design also included center pier live load support rollers. The machinery and structure were protected from risks due to over-travel with energy absorbing end of travel bumpers at the full open and the full closed positions. Elastomeric bumpers were provided as a simple low-cost solution with minimal maintenance requirements. The electrical design included the provision of new drives, controls, and field devices for the span drive machinery and the end wedge machinery. Electrical design details also included design and integration of new traffic control features, bridge and maintenance lighting, and a CCTV system.

Wiss, Janney, Elstner Associates, Inc. Team: Gareth Rees, John Williams

Firm Name	KPFF Consulting Engineers			Past Performance Evaluation Discipline(s)*	Bridge
Project Name	Luling Stay Cable Evaluation and Replacement			Firm Responsibility (Prime or Sub?)	Prime
Project Number	Unknown	Owner's Name	LADOTD		
Project Location	Luling, LA	Owner's Project Manager	Jenny Fu		
Owner's Address, Phone, Email	1201 Capitol Access Rd., 6th floor; Baton Rouge, LA 70802; 225.379.1321; zhengzheng.fu@la.gov				
Services Commenced by This Firm (mm/yy)	09/08	Total Consultant Contract Cost ($1,000's)	$1,000		
Services Completed by This Firm (mm/yy)	03/09	Cost of Consultant Services Provided by This Firm ($1,000's)	$500		

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

- ✓ Preventative Maintenance & Repair
- ✓ Bridge Inspection
- ✓ NDT/Evaluation

KPFF professionals led a team and successfully completed the in-depth inspection effort for a 1,230-foot-span cable-stayed bridge across the Mississippi River. The inspection included hands-on inspection of main span superstructure encompassing twin trapezoidal steel box girders, orthotropic steel deck, supporting steel towers, and the stay cable array. Work included development of approach, including inspection methods and scope, access methods, maintenance of traffic, and an extensive NDT program for steel superstructure and stay cables.

Detailed inspection and nondestructive testing revealed that the condition of 39 out of the bridge's 72 cables was questionable, with multiple cables requiring substantial repair or replacement. The stay cables were comprised of a cement-grouted, ¼-in diameter parallel wire system. Several strategies involving a range of repair and replacement options were evaluated, using life cycle cost analysis. It was concluded that replacing all cables presented the best value among evaluated alternatives. The design of the complete 72-cable array replacement is the first occasion on which this process was attempted in North America. The final design of the replacement cables was heavily influenced by the geometric restrictions of the existing anchorage locations. The replacement cables are designed for a 75-year design life and incorporate the advancements made in corrosion protection and vibration control since the original design of th4e bridge. Maintenance of traffic design was an essential part of the project, since I-310 is a critical regional link and hurricane evacuation route in the State of Louisiana. Traffic maintenance during cable replacement was designed to be as unobtrusive to the public and commerce as practical – the cable replacement was staged to occur with minimal lane closures. A stay cable replacement construction contract totaling $31 million was awarded in 2009, and was completed in 2011.

KPFF Team: Mark Powlison

Firm Name	CONSOR Engineers, LLC		Past Performance Evaluation Discipline(s)*	Bridge
Project Name	Retainer Contract for Underwater Bridge Inspection Services, Statewide		Firm Responsibility (Prime or Sub?)	Prime
Project Number	4400009105	Owner's Name	Louisiana Department of Transportation & Development	
Project Location	Louisiana, Statewide	Owner's Project Manager	Haylye Brown	
Owner's Address, Phone, Email	1201 Capitol Access Road, Baton Rouge, LA 70804; 225.349.1200; haylye.brown@la.gov			
Services Commenced by This Firm (mm/yy)	01/17	Total Consultant Contract Cost ($1,000's)	$4,492 (to date)	
Services Completed by This Firm (mm/yy)	Present	Cost of Consultant Services Provided by This Firm ($1,000's)	$4,492 (to date)	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

✓ Underwater Inspection Imaging ✓ Bridge Inspection

✓ NDT/Evaluation

Under a second consecutive contract, CONSOR has performed 800+ underwater inspections of bridges in LADOTD Districts statewide. The project included Level I, II, and III inspections utilizing surface-supplied air and commercial SCUBA diving systems, for concrete, steel, and timber bridges and culverts and 2D and 2D Acoustic Imaging on select bridges. Inspections have included challenging aspects specifically related to wildlife, fast currents, difficult access as well as culvert structures requiring penetration dives through extensive silt and debris build up. CONSOR's most recently completed task order (2019) included 254 bridges in District 2, which encompasses the parishes of Orleans, Jefferson, Lafourche, and Terrebonne. The bridges inspected included I-10 Eastbound/Westbound bridges over Lake Pontchartrain, US 11 over Lake Pontchartrain, and I-10 Eastbound/Westbound over the Bonnet Carre Spillway. CONSOR's current task order, ending in June 2022, includes 350+ inspections to date in LADOTD Districts 2, 4, 5, 7, 8, 58, and 62. Comprehensive engineering reports are prepared and submitted in LADOTD AssetWise Bridge Management System.

CONSOR Team: Heath Pope, Michael Dukes

Firm Name	CONSOR Engineers, LLC			Past Performance Evaluation Discipline(s)*	Bridge
Project Name	Statewide Underwater Bridge Inspections and Acoustic Imaging			Firm Responsibility (Prime or Sub?)	Prime
Project Number	2084 (2018 contract)	Owner's Name		South Carolina Department of Transportation	
Project Location	Statewide		Owner's Project Manager	Mark Hunter, PE	
Owner's Address, Phone, Email	955 Park Street/Columbia, SC 29202-0191; 809.737.4111; MWHunter@scdot.org				
Services Commenced by This Firm (mm/yy)	09/18	Total Consultant Contract Cost ($1,000's)		$366 (2018 contract)	
Services Completed by This Firm (mm/yy)	02/20	Cost of Consultant Services Provided by This Firm ($1,000's)		$366	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

✓ Underwater Imaging ✓ Bridge Inspection
✓ NDT/Evaluation

Since 2008 under five contracts, CONSOR has performed 550+ underwater bridge inspections throughout the state. Responsibilities included the investigation, evaluation, and recommendation of repairs to the bridges' substructure units (located in the water). Bridges ranged in size from small, completely submerged box culverts to large, river-crossing trusses, and cable stays. After the inspection, a complete report was prepared for each bridge detailing the findings, rating the bridges in both NBIS and BMS, and stating recommended repairs. 3D modeling was used on I-95 NBL over the Great Pee Dee River to assess the progress of channel migration and its encroachment on additional piers. Acoustic imaging was used on bridges over the Cooper and Wando Rivers to document scour for repair recommendations, a project for which CONSOR won an Engineering Excellence award from the American Council of Engineering Companies. CONSOR has received multiple perfect scores (500 out of 500) for our work on this contract.

CONSOR also provided emergency underwater inspections of 21 bridges affected by flooding in 2015. Fourteen of the bridges were located on I-95 and were inspected during the placement of concrete scour countermeasures. The concrete was pumped in from the bridge decks and was critical in preventing extreme scour during the flood. CONSOR performed underwater examinations of the concrete after it had been pumped in to determine its efficacy. CONSOR's assessment of the placement and quality of the concrete installation was the determining factor in reopening 70 miles of I-95 for the traveling public. Underwater acoustic imaging was also used during this process to assess substructure conditions when flow velocities prevented safe diving operations.

CONSOR Team: Michael Dukes, Heath Pope, Dustin Noel

Firm Name	Ardaman & Associates, Inc.			Past Performance Evaluation Discipline(s)*	Geotechnical
Project name	I-20 Mississippi River Bridge Review			Firm responsibility (prime or sub?)	Prime
Project number	SP No. H.004646.5	Owner's name	LADOTD		
Project location	Madison Parish, LA		Owner's Project Manager	Chris Nickel	
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA; 225.379.1100; Chris.Nickel@la.gov				
Services commenced by this firm (mm/yy)	10/09	Total consultant contract cost ($1,000's)		$2,900	
Services completed by this firm (mm/yy)	03/18	Cost of consultant services provided by this firm ($1,000's)		$2,900	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

✓ Geotechnical Investigations

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 will provide construction and monitoring support for the bluff instability and ground movements affecting the existing I-20 Mississippi River Bridge.

Ardaman Team: Megan Bourgeois, Robert Jewell, Robert Rousset

Firm Name	Ardaman & Associates, Inc.			Past Performance Evaluation Discipline(s)*	Geotechnical
Project name	I-49 Connector (Lafayette Regional Airport to I-10/I-49/US 167)			Firm responsibility (prime or sub?)	Sub
Project number	SP No. H.004273.5	Owner's name		LADOTD (Client: Stantec)	
Project location	Lafayette Parish, LA		Owner's Project Manager	Chris Nickel	
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA; 225.379.1100; Chris.Nickel@la.gov				
Services commenced by this firm (mm/yy)	07/15	Total consultant contract cost ($1,000's)		$21,000	
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)		$1,889	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

✓ Geotechnical Investigations

The overall project includes construction of a freeway with accompanying interchanges in the Evangeline Thruway US 90/US 167 corridor and flanking collector/distributor roads for local traffic circulation and land access. The project begins just south of the Lafayette Regional Airport and continues north to the I-10/US 167/I-49 interchange, a length of approximately five miles, 3.5 of which consist of elevated structure. The project includes one three-level directional interchange at Kaliste Saloom Road (majority of interchange on structure); two full diamond interchanges at University/ Surrey Street and Willow Street; two single point diamond interchanges at Johnston Street and 2nd/3rd Streets with associated railroad grade separations and arterial cross street studies involved; and various cross street connections at Pinhook Road, Jefferson Street, Mudd/Simcoe Street, Donlon Street, Castille/Martin Luther King Road and several minor streets.

The scope of services for this project includes preconstruction engineering design and related services for the construction of 5 miles of freeway consisting of a 3.5 mile-elevated structure that will include pile supported approach slabs, pile foundations, slope stability, embankment settlement, development of an advanced load test program, earth retaining structures and development of a design report presenting the geotechnical recommendations. The goal of the project is to design and construct the freeway and connecting infrastructure within the parameters and commitments of the selected alternative. Ardaman is currently conducting the geotechnical field investigation which consists of approximately 400 deep and shallow borings and Cone Penetrometer (CPT) soundings (including field reconnaissance, gaining rights of entry, completing utility location, GPS location and water table elevations), laboratory testing, and geotechnical engineering analyses and design for this project.

Ardaman Team: Megan Bourgeois, Robert Jewell, Robert Rousset

Firm Name	T. Baker Smith, LLC			Past Performance Evaluation Discipline(s)*	Survey
Project Name	Cane River Bridge at Church Street - Survey Route LA 1-X			Firm Responsibility (Prime or Sub?)	Prime
Project Number	N/A	Owner's Name		Louisiana DOTD	
Project Location	Natchitoches Parish, LA		Owner's Project Manager	Carl Hultgren, P.L.S., C.H.	
Owner's Address, Phone, Email	P.O. Box 94245, Baton Rouge, LA 70804; 225.379.1048; carl.hultgren@la.gov				
Services Commenced by This Firm (mm/yy)	09/14	Total Consultant Contract Cost ($1,000's)		$35	
Services Completed by This Firm (mm/yy)	06/15	Cost of Consultant Services Provided by This Firm ($1,000's)		$35	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

✓ Surveying ✓ NDT Evaluation

As part of the ongoing process to replace the aging Cane River Bridge at Church Street in Natchitoches, LADOTD engaged T. Baker Smith, through a Retainer Contract for Professional Surveying Services – Statewide to perform survey services including hydrographic survey services within the river. The hydrographic survey was performed to locate any remaining structures within the river which were possibly previous supports of the original, swing span bridge in order to eliminate conflict with these features and the new bridge piles.

The scope of services for the project consisted of collecting survey data on the existing bridge structure, the channel near the bridge and the underwater scanning for any remnant of piles or debris from the original swing span bridge.

The existing bridge deck surface, sidewalks, railing, curbs, guardrails, bent caps and piles were collected with conventional and RTK GPS survey methods. TBS then utilized a combination of multi-beam echo sounder, side scan sonar, marine magnetometer and sub bottom profiler to conduct a detailed underwater survey from beneath the existing bridge to a distance of 200' downstream and upstream. The hydrographic survey also utilized RTK GPS for positioning such that all data sets could be meshed together to create a complete topographic/hydrographic survey deliverable.

All data collected was combined into a deliverable which positioned the relationship of the existing bridge to the channel section along with any underwater anomalies identified by the sub bottom profiler and the magnetometer. The resulting data also showed indications of scouring near the piers and other local scour locations present in the channel.

T. Baker Smith Team: Rene J. Hebert

Firm Name	T. Baker Smith, LLC			Past Performance Evaluation Discipline(s)*	Survey, Environmental, Other
Project Name	Roddy Road Safety Widening (LA 935 to LA 621)			Firm Responsibility (Prime or Sub?)	Sub
Project Number	MA-17-01	Owner's Name		Ascension Parish Government	
Project Location	Ascension Parish		Owner's Project Manager	Michael Enlow	
Owner's Address, Phone, Email	42077 Churchpoint Rd. Gonzales, LA 70737; 225.450.1326; menlow@apgov.us				
Services Commenced by This Firm (mm/yy)	09/17	Total Consultant Contract Cost ($1,000's)		$620	
Services Completed by This Firm (mm/yy)	05/19	Cost of Consultant Services Provided by This Firm ($1,000's)		$585	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

✓ Surveying ✓ NDT Evaluation

✓ SUE

As part of Ascension Parish's Move Ascension Transportation Program, T. Baker Smith, LLC was selected as the prime consultant for the Roddy Road Safety Widening project from LA 935 to LA 621. The project includes 1.5 miles of roadway widening from the existing 10' travel lanes and minimal shoulders to 12' travel lanes with 4' shoulders and associated roadside ditch improvements. The project also includes the installation of left turn lanes on three (3) approaches at LA 934 and left turn lanes along all approaches at LA 621 including a dedicated right turn lane on the southbound approach. The existing Roddy Road Bridge over Black Bayou will be replaced with a 6-span concrete bridge having a 32' clear width to match the new roadway section. All portions of Roddy Road will be reconstructed due to poor pavement and base.

TBS is the prime consultant on this project and is responsible for all roadway design aspects including widening & reconstruction, drainage design, H&V geometric layout, pavement design and turn lane design/geometry. TBS is also responsible for all bridge design including superstructure, substructure and special bridge element design for the accommodation of utilities. TBS' scope of work also includes setting survey horizontal and vertical control network, performing all topographic surveys, Subsurface Utility Engineering (Quality Levels D-A), property surveys, Right of Way Mapping, utility relocation coordination, traffic management plans and bidding assistance. TBS is also supporting environmental permitting activities being performed by the Parish.

The Subsurface Utility Engineering (SUE) services were performed in strict accordance with CI/ASCE 38-02 guidelines for all utilities within 75' of either side of the roadway. Quality Level D-B services were provided for all utilities within the 150' wide area of interest and Level A services were provided for any utility with a diameter greater than 4" which crossed the roadway. Overall, TBS designated over 71,000 linear feet (13+ miles) of subsurface utilities and performed Level A minimally invasive excavations via TBS' vacuum truck at thirty (30) locations including gas transmission pipelines and water mains.

TBS performed property surveys along the 1.5 mile widening project which included 68 parcels.

T. Baker Smith Team: Rene J. Hebert, T.J. Stokes

Firm Name	Marrero, Couvillon & Associates, LLC		Past Performance Evaluation Discipline(s)*	Bridge
Project Name	US 11 Lake Pontchartrain Bridge Rehab		Firm responsibility (prime or sub?)	Sub
Project Number	4400002538 Task order H.010016	Owner's Name	Modjeski and Masters, Inc.	
Project location	Orleans and St. Tammany Parishes	Owner's Project Manager	Justin Guilbeau	
Owner's Address, Phone, Email	1055 St. Charles Ave., Suite 400, New Orleans, LA 70130; 504.524.4344; amday@modjeski.com			
Services Commenced by This Firm (mm/yy)	11/13	Total consultant contract cost ($1,000's)	Unknown	
Services Completed by This Firm (mm/yy)	2021	Cost of consultant services provided by this firm ($1,000's)	$151	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

✓ Movable Bridges-Mechanical ✓ Bridge Inspection

✓ Movable Bridges-Architectural

The US. 11 bridge crossing the east end of Lake Pontchartrain in Orleans and St. Tammany Parishes, near the City of Slidell, was constructed in 1938. The bridge structure has two double-leaf movable bascule spans known as "North Draw" and "South Draw." The purpose of the project was to comprehensively rehabilitate the structure.

MCA was engaged to evaluate the condition of the Operator's House for both architectural and mechanical systems, make recommendations for repair/replacement, and to undertake the design for this work. Design must be sensitive to the historic nature of the bridge and operator's houses.

The scope of services includes:

- Site inspection to identify all architectural and mechanical systems to be rehabilitated, including modifications needed to meet codes and regulations, or to improve functionality and reliability.
- Prepare a scope of work document with associated costs
- Preliminary plans
- Final plans and specifications
- Construction cost estimate
- Construction related engineering support.

Marrero, Couvillon & Associates, LLC Team: Gregory DeCouirsy, Brian Miller

Firm Name	Vectura Consulting Services, LLC		Past Performance Evaluation Discipline(s)*	Traffic & CE&I
Project Name	Belle Chasse Bridge & Tunnel Replacement PPP		Firm responsibility (prime or sub?)	Sub
Project Number	H.004791	Owner's Name	DOTD	
Project location	Belle Chasse, LA	Owner's Project Manager	Nickolas Olivier, PE	
Owner's Address, Phone, Email	1201 Capitol Access Road, Baton Rouge, LA 70802; 225.379.1133; Nicholas.olivier@la.gov			
Services Commenced by This Firm (mm/yy)	04/19	Total consultant contract cost ($1,000's)	Unknown	
Services Completed by This Firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$ 211.89	

RELEVANT TO DOTD BRIDGE PRESERVATION IDIQ

✓ Traffic Management Plan

Vectura is providing the traffic engineering services for the Belle Chasse Bridge & Tunnel Replacement Project for improvements along LA 23. Vectura is responsible for the following tasks:

- Preliminary and final traffic studies
- Temporary and final traffic signal plans
- Assist the Prime with Traffic Management Plan (TMP)
- Response to request for information (RFI's)
- As-built plans for the traffic signals

Vectura Consulting Services, LLC Team: Brin Ferlito, Laurence Lambert

AECOM

Section 18

AECOM
McCormick Avenue
Superstructure Bridge
Replacement,
Charlottesville, VA

Delivering a better world

The AECOM Team brings significant Bridge Preservation IDIQ experience to DOTD from our current IDIQ contracts nationwide and has developed an approach for DOTD's Bridge Preservation IDIQ specifically tailored to match the bridge department goals and vision statement which includes:

- **Optimizing available funds and preserving assets**
- **Supporting bridge and roadway safety improvements**
- **Implementing maintenance and/or preservation first strategies on existing infrastructure**
- **Acting as an extension of staff for the DOTD Bridge Design Section to provide responsive and effective bridge preservation solutions**
- **Using technology to lead the nation in preservation and safety**

This approach was developed based upon years of successful and relevant DOTD and other DOT IDIQ contract experience; integrated and flexible team staffing with design projects following the DOTD Project Delivery Manual, Roadway Design Manual, and the Bridge Design & Evaluation Manual and our commitment to internal protocols and project quality. Our staff is very familiar with the preferences and expectations of the DOTD and the approach discussed here will guide us in meeting those expectations in every aspect of our work.

The AECOM Team is supported by our local, regional and national offices with significant bridge preservation experience offering cost-effective and practical bridge solutions. We also have strong working relationships with our team members and have worked previously with them on other DOTD and local agency projects. *The following table highlights our subconsultant partner's expertise and the value they bring to this Bridge Preventative IDIQ Contract.*

Subconsultant	Bridge Preventative IDIQ Role
Forte & Tablada	Bridge, 3D Scanning, Advanced Bridge Measurements
WJ&E	Movable Bridge, NDT, Corrosion, SSPC Coatings
T. Baker Smith	Topographic & Hydrographic Survey, Title Work, SUE Investigation & Environmental
CONSOR	Underwater Inspections, Acoustic Imaging
Ardaman	Geotechnical
KPFF	Material Testing (ANSI Level III)
Vectura	Traffic Engineering
MCA	Lighting, MEP for Bridge Operator's House

We Know Bridge Preservation

Over the past 30+ years, AECOM staff and our teaming partners have completed thousands of bridge repair/rehab projects throughout the country! *The repair table below identifies our preservation capabilities performed through IDIQ and project-specific contracts for our federal, state, and local clients.*

AECOM Team Bridge Preservation Capabilities			
✓	Inspections, Load Ratings, Assessments & Evaluations	✓	Fatigue Analysis/Evaluations
✓	Steel SSPC Painting Assessments	✓	Super/Substructure Replacement
✓	Concrete Corrosion	✓	Truss Repair
✓	NDT/Proof Testing	✓	Heat Straightening
✓	Infrared Deck Scans/Chloride Ion Testing	✓	Foundation Repair/Scour Mitigation
✓	Bridge Deck Hydro-Demolition	✓	Timber Piling Repairs
✓	Deck Resurfacing	✓	Substructure Concrete Patching
✓	Deck Widenings	✓	Epoxy Injection Repair
✓	Bearing Repair/Replacements	✓	Post-Tension Strengthening

Bridge Rehabilitation Protocols

For bridge preservation projects, AECOM will develop a design approach that echoes the information contained in Chapter 6 – Design Policy for Bridge Rehabilitation/Repair Project of the LADOTD BDEM which is outlined below:

- Reviewing all existing project documents
- Field investigating the existing bridge
- Evaluating the load-carrying capacity of the existing structure
- Determining the proposed scope for rehabilitation; and
- Summarizing the evaluation results and recommendations

AECOM TEAM ADVANTAGE

Laser Scanning services provided on the Danzinger Bridge helped AECOM's Sub, Forte & Tablada pinpoint structural issues associated with both operational and temperature movements on super and substructure components.

This rehabilitation process will follow the general design protocols for preliminary and final design, established within Stage III of DOTD's Project Delivery Process. Note that bridge rehabilitation projects that required bridge widening will be developed based upon the criteria established in **Section 6.3, Guidelines for Bridge Widening Design.**

The following table outlines our experience on similar IDIQ contracts and provides example task orders and our potential solutions for this contract. These issues were developed based on previous experience working with the DOTD and other state agencies.

Scope Elements	Example Task Order	AECOM Team Solution	Benefit to DOTD	Proof (* See Section 17)
▶ Inspection ▶ Structural Analysis & Rehabilitation Report	Recent inspection report recommends restricted load posting that creates unwanted truck detours.	Develop a field inspection to office evaluation method using detailed measurements, as-built plan information, and 3D finite element modeling to predict capacity more accurately.	DOTD can potentially remove the load posted restriction and open the bridge back to full truck traffic.	▶ Bridge 93.1 I-20 over I-55 (*) ▶ I-70 Floyd Hill (*) ▶ DOTD US190 WB Krotz Springs (truss bearing replacement)
▶ Inspection ▶ NDT Testing ▶ Load Rating & Report	DOTD bridge near end of its useful life but programmed funds 5 to 10-years out.	Engage our national NDT practice and team professionals to develop a field instrumentation plan and 3D modeling validation to assess the remaining bridge life and identify fatigue retrofit mitigation solutions.	Cost-effective and strategically located repairs minimize interim costs.	▶ I-76 over Sand Creek (*) ▶ Bridge 93.1 I-20 over I-55 (*) ▶ I-77 Bridges/Clear Fork Creek
▶ Bridge Design ▶ Environmental Permitting ▶ Load Rating/Report ▶ Multi-discipline Support	Stage I Planning and Environmental coordination for new bridge construction.	Develop a scoping document for the bridge replacement to outline the feasibility and preliminary costs based on the condition assessment, subsequent load rating and substandard geometric conditions.	This comprehensive report confirms the project requirements so DOTD can identify program funds for replacement.	▶ I-49 Connector (*) ▶ I-25 South CMAR ▶ US 190/UPRR & Little Teche Bayou
▶ Bridge Rehabilitation ▶ Deck NDT Testing ▶ Traffic/MOT	DOTD needs multiple bridge deck condition evaluation and cost-effective repair solutions.	Develop a programmatic approach to assessing existing conditions, perform infrared scanning and 3D GPR deck assessments, and digital image mapping for crack detection, compiling the results into a comprehensive report.	This cost-effective, evaluation and analysis report can help DOTD confirm their prioritizing and rehabilitation recommendations.	▶ South Academy Blvd (*) ▶ DOTD I-10 WB over Atchafalaya Basin ▶ Route 360 Corridor (*) ▶ Colorado Ave Deck Repair ▶ Park Avenue Viaduct
▶ Bridge Design ▶ Inspection ▶ Survey/3D LIDAR ▶ Multi-discipline Design	DOTD needs an emergency bridge replacement due to bridge damage caused from a vehicle collision.	AECOM quickly mobilizes a design team using an alternative (CMAR) delivery approach that features accelerated bridge construction methods.	DOTD can re-open the bridge within 75-days.	▶ SH 59/I-70 Emergency bridge replacement (*) ▶ I-581 over Orange Avenue ▶ Route 210 over Route 29 ▶ Sunshine Skyway Bridge (LIDAR)

Management Approach

AECOM understands the importance of task order management as it pertains to this Bridge Preservation IDIQ contract and will ensure our approach aligns with the DOTD's task order goals and objectives. Gary Maji, AECOM Project Manager, will act as the primary contact and will confirm project team, scoping, scheduling, and deliverables are prepared in accordance with DOTD's project delivery guidelines. Gary brings relevant bridge task lead experience and a proactive management approach that includes regular and frequent check-ins with the DOTD/PM.

Figure 1 shows an effective protocol we typically follow for successful task order execution. We understand the DOTD's task orders, as described in the RFP, will include engineering design and construction support. We are prepared to address any assignment, which could include the following tasks:

- General Bridge Engineering
- Sampling, Instrumentation and NDT
- Geotechnical Services
- Road Design and Traffic Services
- Surveying and Title Work Services
- Bridge Inspection & Load Rating Services

AECOM ADVANTAGE

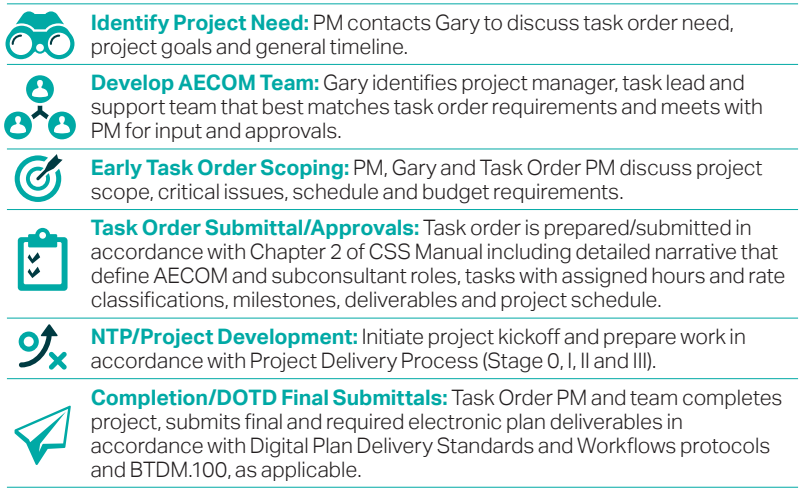
"The AECOM Team was proactive and always on top of the project. Their communications and correspondences are clear and prompt…. their management of bridge tasks exceeded my expectations."

-- Jenny Fu, DOTD Bridge Design Engineer Administrator and I-49 Bridge Task Lead

Proactive Management Plan

AECOM uses an established project delivery system that incorporates proven processes, best practices, and digital tools to help us deliver projects reliably and efficiently. Gary Maji and our Task Order Manager will prepare a Project Management Plan (PMP) that we will use to control scope, schedule, quality, and budget. Based on the DOTD template, the PMP will also incorporate AECOM best practices and lessons learned. We will review the PMP and expectations in an internal kickoff meeting ahead of the project kick-off meeting with DOTD, discipline leads, and subconsultants.

Figure 1. *Task Order Approach Protocol*



Flexible/Responsive

The AECOM Team offers a project-focused staffing approach that matches key staff and our subconsultant partners to DOTD's project needs. We will leverage our continued success supporting DOTD through blended-team and full-service team assignments so that project schedule impacts are eliminated. Our commitment to project delivery, design efficiencies, and staff development is reflected throughout each task order, as proven on our emergency design efforts on the SH 59 Bridge Replacement over I-70 in Eastern Colorado.

Innovative/Integrated

The AECOM Team is organized in a manner that allows us to implement best-practices, innovative design and advanced technology into our bridge preservation practice. Gary and his team have significant bridge preservation experience and if necessary can leverage AECOM's National Bridge Instrumentation Practice to help identify the most applicable bridge repair solutions for our clients. The following table briefly summarizes just a few of the tools we have in our bridge preservation toolbox.

AECOM ADVANTAGE

After a truck accident closed the SH 59 Bridge over I-70 in Eastern Colorado, CDOT, AECOM and Lawrence Construction used CMAR alternative delivery to design and replace the bridge and modify the approach roadway and ramps within 75 days!

Preservation Need	AECOM Team Technology Applications
Bridge Condition Assessments	Digital Imaging, UAS Technologies, 3D Photogrammetric Modeling, Field Load Testing, Dye Penetrant, Mag Particle Testing
Material Strengthening	Fiber-Reinforced Polymers, UHPC, External Post-Tensioning, Steel Fatigue Retrofits
Deck Evaluation	3D GPR, Infrared Thermography, Impact Echo, Digital Map Cracking
Instrumentation	Multi-Beam, Remote Sensors and Structural Monitoring Systems, 3D LIDAR Electrochemical Chloride Extraction
Collaboration Tools	DOTD's ProjectWise, Microsoft Teams, Zoom

We have selected staff that have significant experience working as a team on similar relevant projects. Several are part of AECOM's National Bridge Preservation Practice who routinely work together on innovative bridge rehabilitation and preservation projects. Recent examples include the following:

- **Gary Maji and Ed Zhou, AECOM's Instrumentation Task Lead**, supported CDOT on full-scale NDT testing and load rating for the WB Pier 5 Concrete Straddle Bent of WB Ramp 5 Bridge. Exterior cracking noted on this 70-ft x 9-ft pier cap required AECOM to install wireless strain gages and accelerometers to measure the live-load deflections and confirm structural capacity.
- **Rob Dean, AECOM's Rehabilitation Lead, and Ed Zhou,** AECOM Instrumentation Lead, worked collaboratively on to develop a program for non-destructive testing of 22 structures along the VDOT Route 360 corridor, including infrared thermography, 3-dimensional ground penetrating radar, and digital image mapping for crack detection.
- On the South Academy Boulevard Rehabilitation, **Gary Maji and Chris McKown, AECOM's Deputy Project Manager**, worked collaboratively developing bridge rehabilitation solutions for three (3) pair or twin-bridge structures in Colorado Springs, CO. Design required infrared thermographic bridge deck inspections, chloride-ion testing, bridge deck widening, a steel fatigue assessment, load rating analysis, bearing repair and substructure scour mitigation.

- **Bobby Prince and Ed Zhou**, worked collaboratively on VDOT's I-295 James River Bridge to perform vibration testing and external PT tendon evaluation in the cable-stayed segmental box girder structure.

Task Order Schedules, Milestones and Deliverables

Figure 2. *DOTD Project Delivery Process with Milestones (M) & Deliverables (D)*

	M	D
Executed Contract	X	
NTP/Kick-Off Meeting	X	
Stage 0 - Feasibility	X	
Stage I – Planning/Environmental	X	
Stage II – Funding/	X	
Stage III/Pt 1 - Preliminary Plans	X	
▸ Review Existing Studies/Reports		X
▸ 30% Preliminary Plans		X
▸ 60% Preliminary Plans		X
▸ 95% Preliminary Plans (Plan in Hand)		X
▸ 100% Preliminary Plans		X
NTP for Final Design	X	
Stage III/Pt 2 - Final Plans	X	
▸ 60% Final Plans		X
▸ 90% Preliminary Plans		X
▸ 95% Final Plans (Adv. Chk Print)		X
▸ 98% Final Plans (Adv. Chk Print)		X
▸ 100% Final Plans		X
Stage IV – Project Letting	X	
Stage V – Construction Support	X	

AECOM will work with the DOTD/PM to confirm the project schedule and utilize the latest DOTD requirements for different milestone submittals for both Preliminary Plans and Final Plans, including the use of the latest approved Greenbook, DOTD EDSMs, Minimum Design Guidelines, Complete Streets Initiative, DOTD and AASHTO Bridge Design Specifications, Bridge Design Technical Memorandums (BDTM), Hydraulics Manual, and DOTD CAD standard submittals. The anticipated milestones and deliverables are shown in ***Figure 2***. This table will serve as our scoping outline as we work with the DOTD/PM to develop the project schedule.

Developing the project schedule and milestones will be unique for each task order assignment and will require a collaborative approach between the DOTD/PM, AECOM Project Manager and Task Disciplinary Leads. The following paragraphs outline our understanding of DOTD's project delivery protocols and required milestones for a typical bridge replacement project.

Preliminary Design

After the design criteria and TS&L have been approved, 30% preliminary design and DOTD's pavement sections will help the team establish roadway and bridge typical sections and roadway plan and profile information for DOTD approval.

With the 60% preliminary efforts, the project team advances the geometric design confirming clearances, ROW, construction limits, MOT, and bridge foundation layouts. This phase will also include a preliminary hydraulic design report included with the updated 60% preliminary plans.

AECOM ADVANTAGE

AECOM's rehabilitation task order for VDOT's Route 15 Bridge over the Rapp River warranted truss and superstructure repairs and substructure mitigation to extend the design life for this fracture-critical structure.

AECOM will participate in a Plan-In-Hand meeting (95% submittal) with the PM, Bridge Design Section, and District for review, comments, etc., before finalizing and submitting the 100% Preliminary Plans. As part of this submittal, we will prepare any required railroad or environmental clearance permits and begin developing any SWPPP plans to be completed during final design.

Final Design

After the DOTD/PM issues NTP, the AECOM Team will advance the project towards the 60%, 95%, 98%, and 100% plan milestones. During the 60% phase, we finalize roadway typical sections and alignments, and confirm ROW requirements. The team will also complete the bridge designs to advance the detail plans while coordinating with the roadway, drainage and traffic disciplines to confirm constructability and identify the plan quantities. The hydraulic design report will be finalized and included with the 60% plan submittal to DOTD/PM.

After receiving 60% comments, AECOM will develop the 95% Final Plans, Summary of Quantities sheets, finalized bridge plans, and as-designed bridge load rating report. A 95% Final Plan Review meeting will be held before the 98% Final Plans submittal, including construction cost estimates and special provisions. We will work with the DOTD/PM to ensure all necessary submittals are made to prepare for 100% Final Plans. After comment resolutions, AECOM will stamp and seal all construction plan sheets for submittal.

Quality Assurance/Quality Control

Please refer to AECOM's QA/QC program for the Bridge Preservation IDIQ project that commits to DOTD policy and is attached in this proposal.

AECOM ADVANTAGE

When an over-height truck severely impacted the exterior steel girder of the Route 723 Bridge over I-66 in SW Virginia, the AECOM Team designed a girder repair plan to safety return structural capacity of this exterior girder all during night-time lane closures.

AECOM

Section 19

AECOM
SH 60 over Little Thompson River, Milliken, CO

Delivering a better world

19. Workload

Firm(s)	Past Performance Evaluation Discipline(s) *	State Project Number	Project Name	Remaining Unpaid Balance**
AECOM Technical Services, Inc.	Road, Bridge	H.004367.5	Earhart Expressway to US 61	$215,483
	Traffic	H.004367.5	Earhart Traffic Evaluation	$27,990
	Road, Bridge, Environmental	H.001779.2	Red River Bridge SEA	PROJECT CLOSED
	CE&I/OV	H.003570	I-220 Barksdale Quality Manager (Sub)	$269,904
		H.004273.5	I-49 Connector (Sub)	
	Planning		Tasks 1, 5, 6, 12	$657,639
	Traffic		Task 2	$34,207
	Road		Task 4	$14,923
	Bridge		Task 8	$293,555
	Environmental		Task 10	$730,077
CONSOR Engineers, LLC		H.009730.5	Underwater Bridge Inspection Statewide – Task Order No.4	$280,260

Firm(s)	Past Performance Evaluation Discipline(s) *	State Project Number	Project Name	Remaining Unpaid Balance**
Forte & Tablada, Inc.	Bridge	H.012485.1	IDIQ Contract 4400010099, Task Order No. 4 Off System Bridge Load Rating, Statewide	$169,378
		H.012485.1	IDIQ Contract 4400010099, Task Order No. 5 Bridge and Culvert Load testing	$181,695
	Survey	H.014628.5	IDIQ Contract 4400010587, Task Order No. 17 Turn Lanes at Rice Mill	$71,418
		H.014219, H.014222, H.014228, H.014231, H.014236, H.013954, H.013979, H.013985, H.013992, H.013994, H.013995, H.013990	Contract 4400017598 Rural Bridge Replacement Initiative	$545,837
		H.003570	IDIQ Contract 443015237 I-10 Calcasieu River Bridge Replacement	$1,975,621
		H.004273.5	DOTD I-49 Connector (Lafayette Regional Airport to I-10/ US 167 Interchange)	$197,924
		H.004273.5	LA 327 Spur: Staring Lane Extension Route LA 327-S	$50,279
		H.004273.5	LA 60 Drain Bridge	$1,428

Firm(s)	Past Performance Evaluation Discipline(s) *	State Project Number	Project Name	Remaining Unpaid Balance**
Ardaman & Associates, Inc.	Geotech	H.009266	I-10 (LA 73 to LA 30) Route I-10 Ascension Parish	$ 21,050
		H.011309.5	MacArthur Interchange Completion Phase II Route US 90-Z Jefferson Parish	$ 73,327
		H.012565, H.012891, H.014251, 252, 253, 254, 256, 257	Rural Bridge Replacement – Phase II, Districts 02, 03, 07, 61, 62	$ 90,277
		H.003370	I-220/I-20 Interchange Improvement and Barksdale Air Force Access Rd	$ 4,179
		H.004273	I-49 Connector, Lafayette	$ 619,139
		H.010603.6	Mississippi River Bridge at Vicksburg, MS	$ 90,293
		H.004791	LA 23: Belle Chasse Bridge and Tunnel (HBI)	$ 302,731
		H.013897	I-10/I-12 College Drive Flyover	$ 352,657
		H.004113	I-12 to Bush LA 3241 (LA 435 – LA40/LA41)	$ 114,635
		H014217, 218, 225, 228, 233, 236	Rural Bridges Replacement Phase II – Districts 04 & 05	$ 307,297
		H.04435.5	I-12 to Bush LA 3241 (LA 36-LA 435) Construction	$ 176,629
		H.004100.5-2	I-10: LA 415 to Essen Lane on I-10 & I-12	$ 299,407
		H.002244.5	Boudreaux Canal Bridge (LA 56)	$ 170,295
		H.004100	I-10: CMAR 30% Segment 1 Design	$ 298,180
		H.014554.6	Boeuf River Bridge (PDA)	$ 5,699
		H00.1166.6	Caddo Lake Bridge (PDA)	$ 41,096
		H.012030	KCS Railroad Overpass HBI (US 371)	$ 32,774

Firm(s)	Past Performance Evaluation Discipline(s) *	State Project Number	Project Name	Remaining Unpaid Balance**
KPFF Consulting Engineers	N/A	N/A	N/A	N/A
	Bridge	H.009479	West Larose Vertical Lift Bridge Rehabilitation - Supplement No. 2	$15,252
		JN 3144	Expert witness services in bridge design, construction, repair and forensic analysis	$274,617
		H.010882.5	LA 18: 4th Street Bridge Rehabilitation (Supplement No. 2) Construction Services Jefferson Parish	$52,284

Firm(s)	Past Performance Evaluation Discipline(s) *	State Project Number	Project Name	Remaining Unpaid Balance**
KPFF Consulting Engineers (continued)		H.010882.6	4th Street Bridge Rehabilitation Paint (Supplement No. 3) Route LA 18	$7,884
	Other	H.003014.6	I-10: LA 347 to Atchafalaya Fldwy Bridge (Const. Svcs.)	$15,094
	CE&I/OV	H.011705.6	US 11 Lake Pontchartrain Bridge Rehabilitation - Phase 2	$71,494
		H.011494.6	US 90 Atchafalaya River Bridge Rehabilitation	$473,468
	Bridge	H.009859.5	Ten Truss Bridges - Load Rating and Evaluation	$63,424
		H.009859.5	Sunshine Bridge Load Rating after Collision Repair - Task Order 4	$13,605
		H.012485.1	Load Rating of 354 Off-System Bridges - Task Order 6	$0
		H.009859.5	Load Rating of 14 Complex Bridges	$364,034
		H.001234.5	Port Allen Canal Bridge	$64,231
	Other	H.010601.6	I-10: LA 328 to LA 347 - CRES	$47,334
		H.011137.5	I-12: LA 1077 to US 10 Roadway and Navigation Lighting	$38,177
	Bridge	H.011705.6	US 11: Lake Pontchartrain Bridge Rehab Phase 2 (HBI)	$3,015
		H.012343.6-1	LA 70: Mississippi River Bridge Phase III	$25,598
		H.013179.6	LA 1064: Little Natalbany River Bridge Replacement - Construction Svcs.	$14,727
		H.013183.6	LA 16: Tangipahoa River Bridge Replacement - Construction Svcs.	$33,963
		H.013193.6	US 61: Thompson Creek Bridge - Construction Svcs. Rehabilitation and Replacement	$804
		H.013829.5	I-10 and LA 47: Overhead Sign Upgrade	$0
		Task Order No. 2	LG Bridge Design Example and Parametric Studies	$74,644
		H.012343.6	LA 70: Mississippi River Bridge Phase III - Legal	$13,956
		H.012739.6	I-20 Mississippi River Brigde at Vicksburg Overlay and Rehabilitation - Const. Svcs.	$0
		H.000303.6	Danzinger Bridge Rating and Repair	$54,343
		H.006226.5	Point-A-LA-Hache Ferry Landing Replacement Plaquemines Parish	$366,612
		H.009859.5	Strengthening of US 90 Bridge 201810	$16,182
		H.003144.6/SPN 450-37-0022	Luling Bridge Cable Stay Replacement Project Supplement No. 3	$8,146
	Other	H.011235	Subconsultant: I-49 South at Verot School Road - Lighting	$32,989

Firm(s)	Past Performance Evaluation Discipline(s) *	State Project Number	Project Name	Remaining Unpaid Balance**
KPFF Consulting Engineers (continued)	Other	H.004791	Subconsultant: Belle Chasse B7T Replacement P3 - Electrical and Structural	$56,387
	Bridge	H.010603.6	I-20 Mississippi River Bridge at Vicksburg - Monitoring	$20,925
	Other	H.013866.6	I-12: LA 21 to US 190 Navigation Lighting & Roadway Lighting	$74,626
		H.003184.6	I-10: Texas State Line - E. of Coone Gully - CRES	$74,916
	Bridge	H.011485.6	LA336-1: Bayou Teche Bridge Rehabilitation	$121,680
	Other	H.012889.5	I-20 Rehabilitation - Roadway Lighting (Pines Road to I-220)	$120,034
	Bridge	H.000263.5	Chef Menteur Pass Bridge & Approach	$27,466
		H.014406.5	LA661: Houma Navigation MB Electrical Repair	$17,380
		H.011965.5	LA 47: IWGO Bridge Rehabilitation (HBI) LA 47: Over the Intercoastal Waterway Gulf Outlet (IWGO)	$15
		H.009859.5	Prien Lake Bridge Structural Rating	$18,730
		H.004420.5	Barataria Preliminary Fender Design	$14,913
		H.014280.5	Bayou Ramos Bridge Girder Study	$47,369
		H.014673.5	I-49 US 165 Debonded PPC Girder Rehab	$301,900
		H.014587	LA 302: Kerner Ferry Bridge Repairs PH 2 - Constr Support	$108,730
		H.013946.6	Sunshine Bridge Fender Construction - 2021	$100,199
		H.009859.5-2	Load Rating of two existing bridges	$354,659
		H.004420.5	Bayou Barataria Bridge at Jean Lafitte - Supp 1	$60,168
		H.014406.6	Houma Navigation Canal Swing Bridge - Electrical Repair CRED	$27,968
		H.004100	Subconsultant: LA 415 to Essen Lane on I-10 and I-12 CMAR RCP Plans	$1,929,344
			Oaklawn Submarine Duct Assessment for contractor	$5,100
		H.001234.6	LA 1: Port Allen Canal Bridge Replacement - Phase 1 CRES	$326,444
		H.014212.6	I-10 Atchafalaya Bridge Navigational Lights Repl	$115,338

Firm(s)	Past Performance Evaluation Discipline(s) *	State Project Number	Project Name	Remaining Unpaid Balance**
Vectura Consulting Services, LLC	Traffic	H.010616	I-20: LA 544 Overpass Replacement	$4,959
		H.005168.2	New Orleans Rail Gateway Jefferson Highway EA	$52,436
			New Orleans Rail Gateway Avondale EA	$228,799
	CE&I	H.007160	EBR Computerized Traffic Signal, Ph VB	$61,450
	Traffic	H.004791	Belle Chasse Bridge & Tunnel Replacement PPP	$21,999
		H.012030.5	KCS RR Overpasses HBI	$28,026
Wiss, Janney, Elstner & Associates	Bridge	Contract 4400009424 H.000303.6	Contract 4400009424, Task Order No. H.000303.6, Danziger Bridge Repair	$38,315
		Contract 4400009424, Task Order 5	Contract 4400009424, Task Order No. 5, Elastomeric Bearing Pad Testing	$44,646
		H.014280	Contract No. 4400017263, H.014280 Bayou Ramos	$142,599
		H.014673	I-49, US 165: Debonded PPC Girder Rehab I-49/US165, Rapides Parish	$24,498
		H.012617.6	I-310: I-10 to US 90, Hale Boggs Memorial (Luling) Bridge, Deck Overlay Repair Consultation, Instrumentation Services	$221,747
		Contract 4400001762, H.014899.6	I-10/310 Bonnet Carré Fire Damage Repair	$37,618
Marrero, Couvillon & Associates, LLC	Bridge	H.011705.6	US 11: Lake Pontchartrain Bridge Rehab – CA Services Orleans and St. Tammany Parishes	$9,276

Firm(s)	Past Performance Evaluation Discipline(s) *	State Project Number	Project Name	Remaining Unpaid Balance**
T. Baker Smith, LLC	CE&I/OV	H.004113	LA 3241: LA 435 to LA 40/41	$102,556
		H.011152	I-12: US 190 to LA 59	$70,805
	Road	H.012812	US 190 at Northshore and Camp Villere	$50,200
		H.013988	LA 534: Bridges (LA 2 to Haynesville)	$14,175
	Bridge	H.013988	LA 534: Bridges (LA 2 to Haynesville)	$6,370
	Environmental	H.013988	LA 534: Bridges (LA 2 to Haynesville)	$3,488
	Road	H.013986	LA 155: Bridges Near Coushatta	$13,629
	Bridge	H.013986	LA 155: Bridges Near Coushatta	$9,452
	Road	H.013995	LA 507, LA 514, Local: Bayou and CR BRS	$28,375
	Bridge	H.013995	LA 507, LA 514, Local: Bayou and CR BRS	$9,906
	Environmental	H.013995	LA 507, LA 514, Local: Bayou and CR BRS	$8,378
	Road	H.013990	LA 132: Bridges Near Mangham	$22,552
	Bridge	H.013990	LA 132: Bridges Near Mangham	$16,180
	Environmental	H.013990	LA 132: Bridges Near Mangham	$3,010
	Road	H.013992	LA 151: Creek and Relief Bridges	$9,406
	Bridge	H.013992	LA 151: Creek and Relief Bridges	$3,873
	Environmental	H.013992	LA 151: Creek and Relief Bridges	$2,026
	Road	H.013199	Country Estates Dr. Over St. Louis Bayou	$750
	Bridge	H.013199	Country Estates Dr. Over St. Louis Bayou	$799
	Road	H.014271	LA 537: Bridges Near Plain Dealing	$80,295
	Bridge	H.014271	LA 537: Bridges Near Plain Dealing	$51,468
	Environmental	H.014271	LA 537: Bridges Near Plain Dealing	$20,115
	Road	H.014218	LA 2A: Thorny Branch & Indian Creek Brs	$80,2831
	Bridge	H.014218	LA 2A: Thorny Branch & Indian Creek Brs	$32,103
	Environmental	H.014218	LA 2A: Thorny Branch & Indian Creek Brs	$25,792
	Road	H.014219	LA 507: Creek Bridges Near Simsboro	$99,264
	Bridge	H.014219	LA 507: Creek Bridges Near Simsboro	$65,437

Firm(s)	Past Performance Evaluation Discipline(s) *	State Project Number	Project Name	Remaining Unpaid Balance**
T. Baker Smith, LLC (Continued)	Environmental	H.014219	LA 507: Creek Bridges Near Simsboro	$28,930
	Road	H.014222	LA 516: Poland Branch Bridge	$36,253
	Bridge	H.014222	LA 516: Poland Branch Bridge	$14,823
	Environmental	H.014222	LA 516: Poland Branch Bridge	$8,416
	Road	H.014225	LA 528: Clark Bayou Bridge	$39,003
	Bridge	H.014225	LA 528: Clark Bayou Bridge	$36,726
	Survey	H.014225	LA 528: Clark Bayou Bridge	$5,798
	Environmental	H.014225	LA 528: Clark Bayou Bridge	$3,744
	Road	H.014228	LA 159: Bridges Near Shongaloo	$111,578
	Bridge	H.014228	LA 159: Bridges Near Shongaloo	$38,650
	Environmental	H.014228	LA 159: Bridges Near Shongaloo	$45,165
	Road	H.014231	LA 153: Topy Creek Relief & Drain Brs	$147,135
	Bridge	H.014231	LA 153: Topy Creek Relief & Drain Brs	$83,995
	Environmental	H.014231	LA 153: Topy Creek Relief & Drain Brs	$32,628
	Road	H.014233	LA 160: Cypress Bayou and Relief Bridges	$46,231
	Bridge	H.014233	LA 160: Cypress Bayou and Relief Bridges	$36,352
	Survey	H.014233	LA 160: Cypress Bayou and Relief Bridges	$9,253
	Environmental	H.014233	LA 160: Cypress Bayou and Relief Bridges	$14,902
	Road	H.014236	LA 3008: Bridges Near Cotton Valley	$211,736
	Bridge	H.014236	LA 3008: Bridges Near Cotton Valley	$115,810
	Environmental	H.014236	LA 3008: Bridges Near Cotton Valley	$56,722
	Road	H.014238	LA 818: Barnet Springs & Creek Bridges	$85,686
	Bridge	H.014238	LA 818: Barnet Springs & Creek Bridges	$51,524
	Environmental	H.014238	LA 818: Barnet Springs & Creek Bridges	$22,714
	Road	H.014239	LA 589: Lyon Bayou Bridge	$63,115
	Bridge	H.014239	LA 589: Lyon Bayou Bridge	$25,501
	Environmental	H.014239	LA 589: Lyon Bayou Bridge	$16,338
	Road	H.014264	LA 556: Bridges Near Choudrant	$274,074
	Bridge	H.014264	LA 556: Bridges Near Choudrant	$158,249
	Environmental	H.014264	LA 556: Bridges Near Choudrant	$79,059

Firm(s)	Past Performance Evaluation Discipline(s) *	State Project Number	Project Name	Remaining Unpaid Balance**
T. Baker Smith, LLC (Continued)	Other	H.003931	Calcasieu River Bridge	$124,472
		H.012541.5	LA 594: Overpass I-20	$102,584
		H.003931.5	Calcasieu River Bridge Phase 2	$93,364
		H.003931.5	Calcasieu River Bridge Phase 3	$158,043
		H.003931.5	Calcasieu River Bridge UC and Test Holes	$549,808

AECOM

Sections 20-23

AECOM
Route15 Bridge Truss Painting
and Rehabilitation
over Rap River,
Loudan County, VA

Delivering a better world

20. Certifications/Licenses:

If the advertisement requires submission of licenses and/or certificates, include them here. Otherwise, leave this section blank.

ATSSA Certification

ATSSA Certification

ATSSA Certification

TRAFFIC DOC, L.L.C.
Thomas L. Ervin
269 Evangeline Drive
Mandeville, LA 70471
985.373.0534 Mobile

May 7, 2022

To Whom It May Concern,

This is to certify that the below listed employee of AECOM has successfully completed traffic control training courses presented by the American Traffic Safety Services Association (ATSSA) and in accordance with the requirements of the Louisiana Department of Transportation & Development (DOTD).

LA Specific Traffic Control Technician (TCT) – Baton Rouge, LA – 04-26-22 – Chris McKown

LA Specific Traffic Control Supervisor (TCS) – Baton Rouge, LA – 04-27/28-22 – Chris McKown

This letter will serve as temporary proof of training until the above listed employee receives his official course completion certificates from the American Traffic Safety Services Association (ATSSA). This letter will expire 90 days from the date of issue. Should there be any questions concerning this matter, please contact the undersigned at the above captioned address.

Yours in safety,

Thomas L. Ervin, ATSSA Master Instructor

ATSSA Certification

TRAFFIC DOC, L.L.C.
Thomas L. Ervin
269 Evangeline Drive
Mandeville, LA 70471
985.373.0534 Mobile

May 4, 2022

To Whom It May Concern,

This is to certify that the below listed employees of Vector Consulting Services, LLC have successfully completed traffic control training courses presented by the American Traffic Safety Services Association (ATSSA) and in accordance with the requirements of the Louisiana Department of Transportation & Development (DOTD).

LA Specific Traffic Control Supervisor Refresher (TCS REFRESHER) – Baton Rouge, LA – 04-27/28-22 – Sheelagh "Brin" Ferlito & Laurance Lambert

This letter will serve as temporary proof of training until the above listed employees receive their official course completion certificates from the American Traffic Safety Services Association (ATSSA). This letter will expire 90 days from the date of issue. Should there be any questions concerning this matter, please contact the undersigned at the above captioned address.

Yours in safety,

Thomas L. Ervin, ATSSA Master Instructor

Traffic Engineering Modules

AECOM, Greg Trahan


Certificate of Completion
presented to
Gregory Trahan
for completing the
Traffic Engineering Analysis Process & Report
Module 1
Date: July 16, 2018
Location: Baton Rouge, Louisiana
Professional Development Hours (PDH's) Awarded: 2
Authorized Instructor
Authorized Instructor
Authorized Instructor
DOTD


Certificate of Completion
presented to
Gregory Trahan
for completing the
Traffic Engineering Analysis Process & Report
Module 2
Date: July 23, 2018
Location: Baton Rouge, Louisiana
Professional Development Hours (PDH's) Awarded: 3
Authorized Instructor
Authorized Instructor
Authorized Instructor
DOTD


Certificate of Completion
presented to
Gregory Trahan
for completing the
Traffic Engineering Analysis Process & Report
Module 3
Date: October 29, 2018
Location: Baton Rouge, Louisiana
Professional Development Hours (PDH's) Awarded: 3
Authorized Instructor
Authorized Instructor
Authorized Instructor
DOTD

AECOM, Jonathan McDowell


Certificate of Completion
presented to
Jonathan McDowell
for completing the
Traffic Engineering Analysis Process & Report
Module 1
Date: September 5, 2018
Location: Baton Rouge, Louisiana
Professional Development Hours (PDH's) Awarded: 2
Authorized Instructor
Authorized Instructor
Authorized Instructor
DOTD


Certificate of Completion
presented to
Jonathan McDowell
for completing the
Traffic Engineering Analysis Process & Report
Module 2
Date: September 17, 2018
Location: Baton Rouge, Louisiana
Professional Development Hours (PDH's) Awarded: 3
Authorized Instructor
Authorized Instructor
Authorized Instructor
DOTD


Certificate of Completion
presented to
Jonathan McDowell
for completing the
Traffic Engineering Analysis Process & Report
Module 3
Date: October 15, 2018
Location: Baton Rouge, Louisiana
Professional Development Hours (PDH's) Awarded: 3
Authorized Instructor
Authorized Instructor
Authorized Instructor
DOTD

Traffic Engineering Modules

AECOM, Daniel Helms

Certificate of Completion

presented to

Daniel Helms

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

Certificate of Completion

presented to

Daniel Helms

for completing the

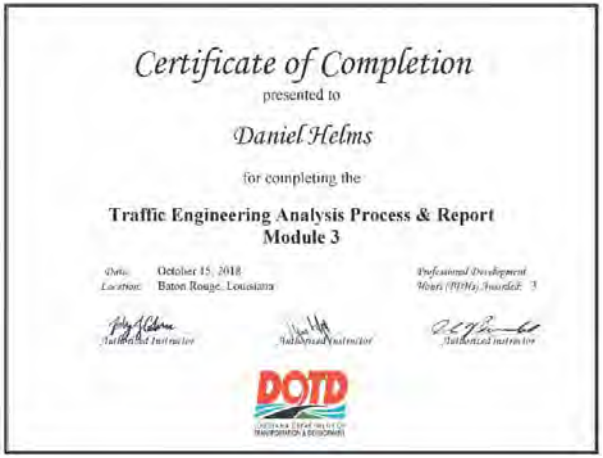
Traffic Engineering Analysis Process & Report
Module 2

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

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized instructor

DOTD



Certificate of Completion

presented to

Daniel Helms

for completing the

Traffic Engineering Analysis Process & Report
Module 3

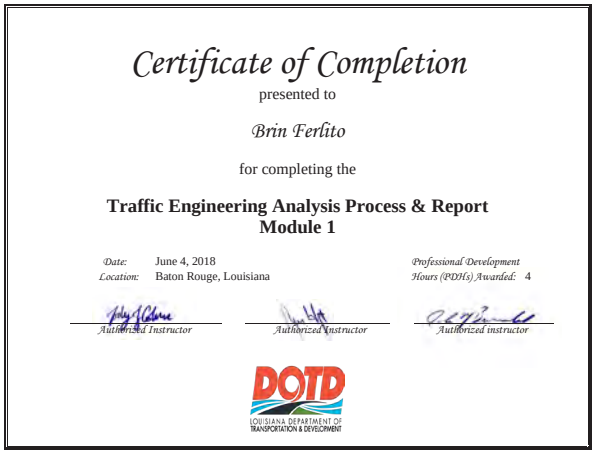
Date: October 15, 2018
Location: Baton Rouge, Louisiana

Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized instructor

DOTD

Vectura, Brin Ferlito



Certificate of Completion

presented to

Brin Ferlito

for completing the

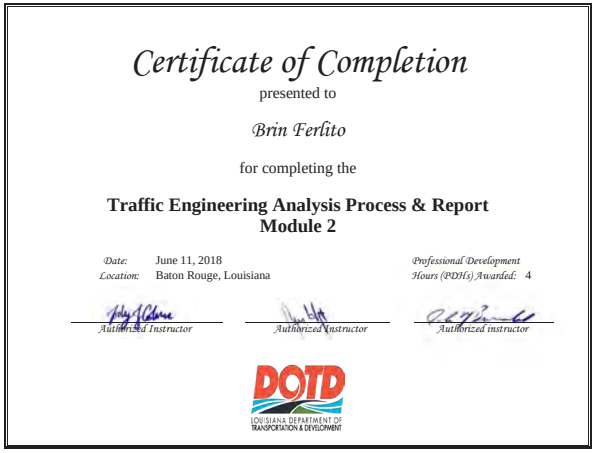
Traffic Engineering Analysis Process & Report
Module 1

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

Brin Ferlito

for completing the

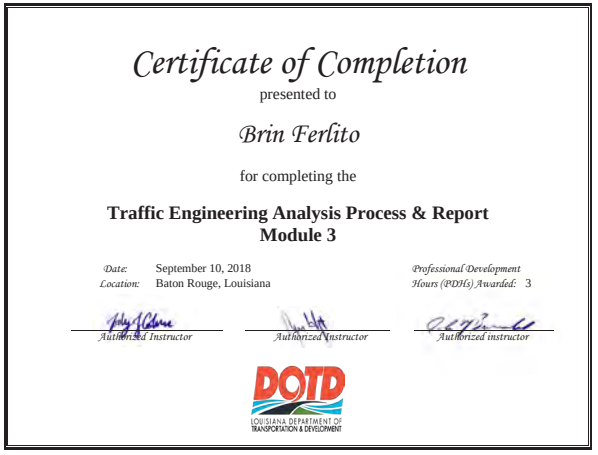
Traffic Engineering Analysis Process & Report
Module 2

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

Brin Ferlito

for completing the

Traffic Engineering Analysis Process & Report
Module 3

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

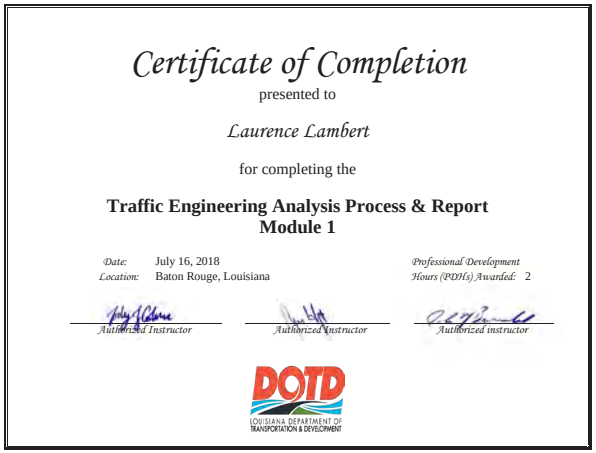
Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor | Authorized Instructor | Authorized instructor

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Traffic Engineering Modules

Vectura, Laurence Lambert



Certificate of Completion

presented to

Laurence Lambert

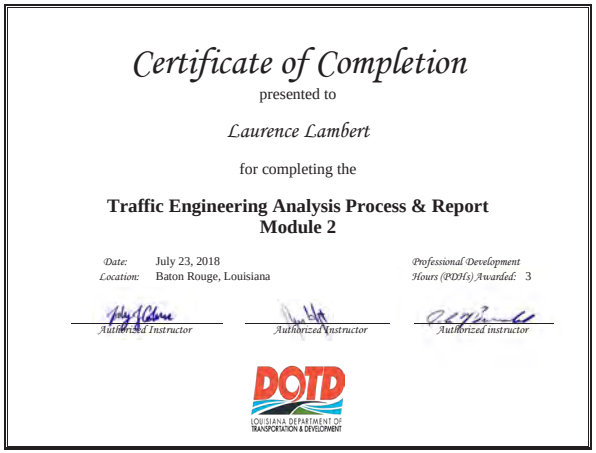
for completing the

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

Laurence Lambert

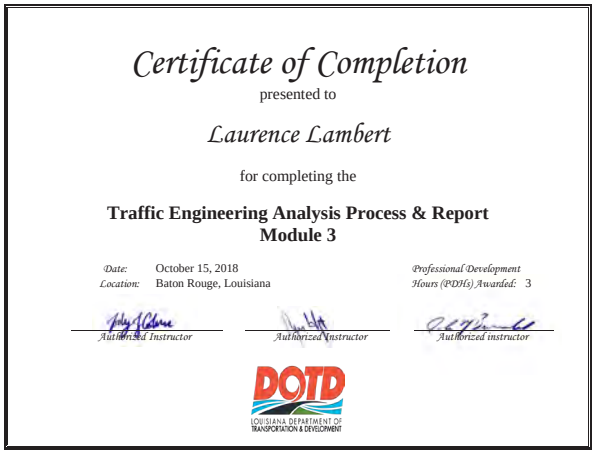
for completing the

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

Laurence Lambert

for completing the

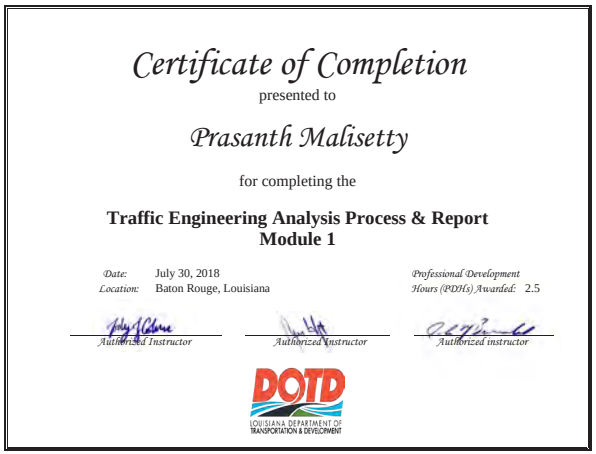
Traffic Engineering Analysis Process & Report
Module 3

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

Vectura, Prasanth Malisetty



Certificate of Completion

presented to

Prasanth Malisetty

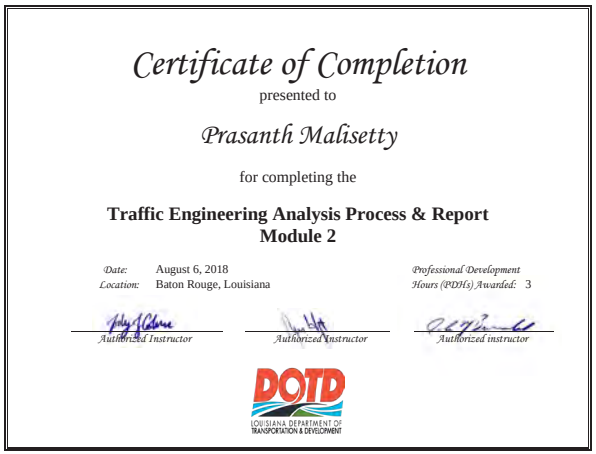
for completing the

Traffic Engineering Analysis Process & Report
Module 1

Date: July 30, 2018
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

Prasanth Malisetty

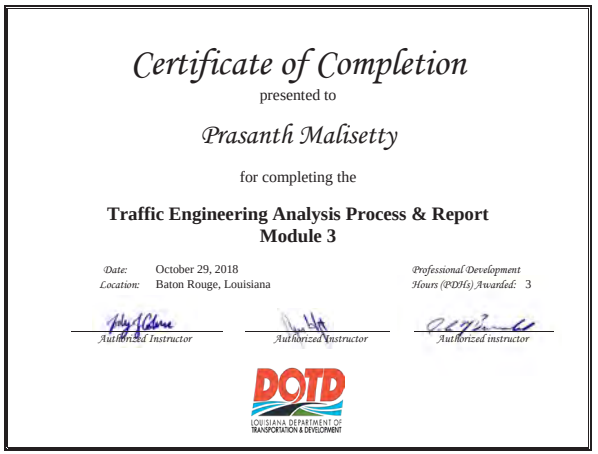
for completing the

Traffic Engineering Analysis Process & Report
Module 2

Date: August 6, 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

Prasanth Malisetty

for completing the

Traffic Engineering Analysis Process & Report
Module 3

Date: October 29, 2018
Location: Baton Rouge, Louisiana
Professional Development Hours (PDHs) Awarded: 3

Authorized Instructor *Authorized Instructor* *Authorized instructor*

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

21. QA/QC Plan and/or Work Plan: If the advertisement requires submission of a QA/QC plan or Work plan, include them here. Otherwise, leave this section blank.

QA/QC Section attached at end of this propoal.

22. Subconsultant information

Firm Name (as registered with Louisiana's Secretary of State)	Address	Point of Contact and Email Address	Phone Number
Forte & Tablada, Inc.	9107 Interline Ave., Baton Rouge, LA 70809	Russell "Joey" Coco, Jr. jcoco@forteandtablada.com	225.927.9321
CONSOR Engineers, LLC	15310 Park Row, Houston, TX 77084	Heath Pope hpope@consoreng.com	888.451.6822 ext. 57301
Ardaman & Associates, Inc.	316 Highlandia Dr., Baton Rouge, LA 70810	Robert Jewell RJewell@Ardaman.com	225.752.4790
KPFF Consulting Engineers	501 Louisiana Ave., Baton Rouge, LA 70802	Chris Ligozio Chris.ligozio@kpff.com	585.465.5092
Marrero, Couvillon & Associates, LLC (DBE)	4354 S. Sherwood Forest Blvd., Ste. D200, Baton Rouge, LA 70816	Greg DeCoursey gdecoursey@mca-llc.com	504.834.3448
T. Baker Smith, LLC	1100 S. Acadia Rd., Thibodaux, LA 70301	Jean L. Reulet III Jean.Reulet@tbsmith.com	985.493.2953
Vectura Consulting Services, LLC (DBE)	8000 Innovation Park Dr., Baton Rouge, LA 70820	Brin Ferlito bferlito@vecturacs.com	225.223.6685
Wiss, Janney, Eistner Associates, Inc.	330 Pfingsten Road, Northbrook, IL 60062	Jonathan McGormley jmcgormley@wje.com	847.753.7234

23. Location:
If location is an evaluation criterion for this advertisement and the prime consultant intends to establish a local presence, describe the plan for doing so. Otherwise, leave this section blank.

Section left intentionally blank.

AECOM

About AECOM

AECOM is the world's trusted infrastructure consulting firm, delivering professional services throughout the project lifecycle – from planning, design and engineering to program and construction management. On projects spanning transportation, buildings, water, new energy and the environment, our public- and private-sector clients trust us to solve their most complex challenges. Our teams are driven by a common purpose to deliver a better world through our unrivaled technical expertise and innovation, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities. AECOM is a Fortune 500 firm and its Professional Services business had revenue of $13.3 billion in fiscal year 2021. See how we are delivering sustainable legacies for generations to come at aecom.com and @AECOM.

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AECOM

Complete QA/QC Plan

Delivering a better world

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IDIQ CONTRACTS FOR BRIDGE PRESERVATION

QC/QA PLAN

Contract Nos. 440023921-923, 440024185-189

Louisiana Department of Transportation and Development

May 10, 2022

TABLE OF CONTENTS

1.0 INTRODUCTION TO THE BRIDGE PRESERVATION IDIQ QC/QA PLAN

A QC/QA program is an essential component of a successful project. The process, when executed properly by a committed design team, will eliminate critical errors and conflicts in the design and improve plan completeness and accuracy. Most importantly, the process promotes confidence in the owner and engineer that the design and construction documents reduce liability and risk to them. The QC/QA plan for the Bridge Preservation IDIQ contract, will meet or exceed the LADOTD's QC/QA policy described in the LADOTD Bridge Design and Evaluation Manual (BDEM). The LADOTD has detailed a Bridge QC/QA policy which sets forth the Department's requirements for this process for all bridge designs performed on LADOTD projects. The LADOTD Bridge QC/QA policy was developed based on the joint FHWA/AASHTO publication *"Guidance on QC/QA in Bridge Design in Response to NTSB Recommendation"* in August of 2011. This QC/QA Plan has been developed in coordination with both the LADOTD and AECOM policies specifically for the Bridge Preservation IDIQ contract.

1.1 Alignment of LADOTD and AECOM QC/QA Policies

The LADOTD policy is well aligned with AECOM's QA/QC program, internally named Quality Management System (QMS). AECOM's QMS is BS EN ISO 9001:2015 International Standard certified; AECOM's QMS policy specifics, as described in the paragraphs below, meet or exceed the directives provided in the LADOTD's Bridge QC/QA policy. A copy of our current certification can be provided upon request. One key difference in the two policies is that the LADOTD Bridge QC/QA policy is specific to the design of bridges exclusively, while the AECOM QMS is applicable to all disciplines associated with a specific project.

AECOM is fully committed to the quality management principles underlying the ISO 9001:2015 standard and to AECOM's QMS. These principles emphasize the need to understand our clients' needs and preferences, and to strive to meet or exceed their requirements and expectations. To accomplish this goal, AECOM's Executive Management provides leadership that engages all AECOM employees in the quality processes. By identifying, understanding, and managing interrelated processes as a system, AECOM increases its efficiency and effectiveness in meeting its organizational objectives as well as the objectives of our clients. This approach includes continuous reassessment and improvement of the underlying processes and promotes decision-making based on factual information and data. Through consistent application of this QMS, AECOM's opportunity to create mutually beneficial values is enhanced, which in turn enhances our clients' ability to create value for their end users.

1.2 Responsibility for QC/QA and the LADOTD's Oversight Role

From review of the LADOTD's Bridge QC/QA policy, it is apparent that the primary expectation is that consulting engineers contracting with the LADOTD take full responsibility for their submittals at all stages of the bridge design process. By the assignment of this responsibility, the LADOTD's design staff expects to provide oversight on the design process but does not expect to be responsible for the checking of designs and plan documents. The role of the LADOTD's design staff is primarily to oversee

the design process. Specifically, the LADOTD's Task Manager will be responsible for the following project tasks, as described in the LADOTD's Bridge QC/QA policy:

- Develop the scope of work, man-hour estimate, design team minimum personnel requirements, selection evaluation criteria and to obtain the approval of the Task Manager's direct supervisor for these items. In addition, the Task Manager will coordinate directly with the LADOTD's project manager on all bridge design requirements for preparation of the project kickoff.
- Initiate a kickoff meeting, covering items such as the staffing plan, QC/QA plan, project schedule and budget, share expectations and consultant rating criteria, bridge design criteria, and other project management agenda items per the LADOTD checklist.
- Review and approve the Design Criteria and TS&L submittals. Coordinate revisions in the Design Criteria with the design team for the project duration.
- Monitor the Design Team's implementation of their QC/QA plan.
- Maintain a Project Log sheet recording all major project activities (Project Meetings, Submittals, LADOTD Review Comments, Major Decisions, etc.).
- Review all Design Team submittals, intended to be a cursory review for constructability, consistency, and clarity. These reviews are not intended to be a secondary QC of the Design Team's work.
- Monitor project schedule and milestone deliverables.
- Monitor Design Team effort with respect to scope and budget; process supplemental agreements; monitor claims avoidance.
- Review and approve invoices; verify Design Team staff is consistent with the scope and fee; Review and approve qualifications of replacement staff proposed by the Design Team, if necessary.
- Perform a consultant rating for each formal submittal by the Design Team; share ratings and provide feedback to Design Team.
- Archive final design files.

1.3 Definitions of QC and QA

An understanding of the definition of quality control (QC) and quality assurance (QA), as well as the responsibilities contained in these processes is an important component of AECOM's QMS and the LADOTD's Bridge QC/QA policy. These key definitions are summarized below:

- Quality Control (QC): This process involves the procedure of checking the accuracy and consistency of calculations and drawings, detecting conflicts, design errors and omissions, and the procedure for resolution of internal comments, correcting and verification of revisions. Also, specific to this bridge replacement project, the process verifies that all bridge components are adequately designed for the specified limit states in the AASHTO LRFD Bridge Design Specifications and the LADOTD BDEM and Technical Memoranda, as applicable.

- Quality Assurance (QA): This process involves the review of the QC documents to verify that the quality control (QC) procedure has been completed in accordance with AECOM's QMS and the

LADOTD Bridge QC/QA policy. In addition, the QA process verifies that the QC process was effective in preventing design and plan errors and ensuring consistency.

1.4 Evidence/Verification of QC and QA Activities

AECOM's QMS fully documents the QC and QA processes for all intermediate and final submittals, providing evidence to the LADOTD that our design team has executed the QC/QA procedures in accordance with this system.

2.0 ROLES AND RESPONSIBILITIES

Meeting the provisions of the LADOTD Bridge QC/QA policy, the AECOM QMS requires that the quality control processes be completed for all design disciplines for all submittals. For the Bridge Preservation IDIQ contract, as it pertains to QC/QA, the roles and responsibilities of the design team are described below.

2.1 Quality Assurance Manager

AECOM's QA Manager will be responsible for verifying that the QC process has been completed, documented, and properly filed in project records. The QA Manager will oversee the communication and training of the QC procedures to the project team, including subconsultants. The QA Manager is responsible for certifying that a submittal deliverable has met the requirements of the AECOM QMS and the LADOTD Bridge QC/QA policy, can be released to the client, and is made available for future auditing purposes.

2.2 Original Designers and CADD Design Personnel

The original designers are responsible for original design calculations, and plan drawings in accordance with the direction provided by the Project Plan and associated pre-planning references and design tools (i.e. – Design Criteria, Technical Task Protocols, Design Tools, Validated Software, etc.). In the QC/QA process, the original designers are responsible for the timely, complete, and effective preparation of the calculations and plans, incorporating weekly design coordination directives during the design development. Original designers will perform a self-check of their work before indicating the work product is ready for QC Review. The original designers may be professional engineers or engineering interns.

The original designers are responsible for actively resolving comments received at each level of QC (Discipline, Independent Peer, and Inter-Discipline) and for making the necessary corrections in advance of the next level of QC or QA reviews. All design personnel (Engineering and CADD designers) will be trained in the QC/QA procedures by the Quality Assurance Manager. Evidence of the training (sign in sheets, copy of training course) will be filed in the project directory, available for audit.

CADD design personnel are responsible for effective preparation of project plans, as supervised by the original designers. Original designers shall work collaboratively with CADD personnel to have project plans match their design. CADD personnel will perform a self-check of their work before the work product is submitted for QC review.

2.3 Discipline QC Reviewers

This level of review will be completed by experienced engineers who are responsible for the detailed checking of all calculations, specifications, special provisions, and plan documents. For the Bridge Preservation IDIQ contract, we anticipate this level of review will be completed by AECOM staff. The specialized work performed by subconsultants will be reviewed by the appropriate AECOM Task Leader, as indicated by the organizational chart. For the Bridge Preservation IDIQ contract, the original design calculations for critical components will be prepared by a professional engineer, and the Discipline QC

reviewer may be another professional engineer or an engineer in training (EIT). This approach is agreement LADOTD's bridge design policy.

The Discipline QC reviewer will be responsible for documenting all comments, pursuing resolution with the original designer or detailer and for progressing the QC documents (calculations, plans and QC forms) to completion prior to forwarding to the Independent Peer QC and Inter-Discipline QC reviewers. The Discipline QC reviewers will be trained in the QC/QA procedures by the Quality Assurance Manager. Evidence of the training (sign in sheets, copy of training course) will be filed in the project directory, available for audit.

2.4 Independent Peer Bridge QC Reviewers

If deemed necessary, an Independent Peer Bridge QC review will proceed after the Discipline QC review has been completed and may take place in parallel sequence with the Inter-Discipline QC review. The Independent Peer Bridge QC team is responsible for documentation of comments, pursuing resolution with the original designer or detailer (with LADOTD representative oversight and documented concurrence). The purpose of this participation is to provide independent oversight of the design development and is intended to identify potential critical conflicts or issues in the design. This process results in keeping the design team progressing the work on the most effective and desirable path. The Independent Bridge QC reviewers will be trained in the QC/QA procedures by the Quality Assurance Manager. Evidence of the training (sign in sheets, copy of training course, etc.) will be filed in the project directory, available for audit.

2.5 Inter-Discipline QC Reviewers

This level of review will be completed by Discipline Task Leaders (i.e. – Bridge, Roadway, MOT, CADD, etc.) who are responsible for an oversight review of the plans intended to identify conflicts between the disciplines and to identify plan consistency issues not identified in the more detailed Discipline QC review. For the Bridge Preservation IDIQ contract, we anticipate this level of review will be completed by the Discipline Leads, comprising of AECOM and our subconsultant partners as indicated in the organization chart. This level of review is required by AECOM's QMS policy.

The Inter-Discipline QC reviewer will be responsible for documenting all comments, pursuing resolution with the original designer or detailer and for progressing the QC documents (plans and QC forms, etc.) to completion prior to forwarding to the Quality Assurance Manager for his QA review. All design personnel, including each Inter-Discipline QC reviewer will be trained in the QC/QA procedures by the Quality Assurance Manager. Evidence of the training (sign in sheets, copy of training course) will be filed in the project directory and available for audit.

2.6 Engineer of Record

The Engineer(s) of Record (EOR) for the Bridge Preservation IDIQ contract will be assigned by the supervisor or discipline lead on the project team. The EOR is responsible for the supervision of the calculations, plan, and special provision preparation, and is responsible for participation in or oversight of the QC and QA review processes. The EOR must be licensed to practice engineering in the State of Louisiana and must have demonstrated experience in the design of similar structures. In addition to overseeing the calculations and plan submittal through the QC/QA process, the EOR is responsible for

obtaining the seal and signature of any and all co-signed sheets in the plans. The EOR is also responsible for assembling the complete final calculation documents in the format prescribed by the LADOTD, assuring that all plan sheets include the designer's, design checker's, detailer's and detail checker's initials and for sealing and ensuring special provisions are accurately shown on the construction proposal.

The Engineer of Record will be trained in the QC/QA procedures by the Quality Assurance Manager. Evidence of the training (sign in sheets, copy of training course) will be filed in the project directory, available for audit.

3.0 PRE-PLANNING ACTIVITIES

Both the LADOTD's and AECOM's QC/QA policies contain careful project execution planning, document control procedures, communication protocols and specific QC and QA procedures.

3.1 Development of the Project Plan and Design Criteria

The AECOM team will prepare a Project Plan for distribution to the design team. The plan will contain:

- A project background description and scope summary
- A design criteria document prepared in compliance with the LADOTD's checklist. The design criteria document will be submitted to the LADOTD for review and concurrence.
- Identification of the project team members, organization chart, contact information, and guidance on internal and external communication
- Identification of all deliverables
- Project design schedule and task budgets
- Description of the project directory structure, filing of external communication and file naming conventions, etc.
- Organization of calculations documents, in compliance with the LADOTD's QC/QA policy
- QC and QA procedures, responsibilities, and documentation of QC/QA training
- Specific technical task protocols, design tool templates and design tool validation documentation
- Templates of all project forms (Letter, Memorandum, Meeting Minutes, Reports, Cost Estimates, Design tool validation forms, Drawing and Calculation QC forms (LADOTD and AECOM), Quality Assurance forms (LADOTD and AECOM) to use on the project
- Description of internal project quality auditing, continual improvement, and client feedback processes

The project plan is a living document, and will be revised as the design criteria, scope or other internal procedure is revised. As stated in the LADOTD's QC/QA policy, revisions in the design criteria will be forwarded to the LADOTD for review and concurrence.

3.2 Project Directory Structure and Bridge Calculation Document Organization

The AECOM QMS policy has established a standardized project directory structure for the documentation of all projects delivered by AECOM. However, this structure may be modified to meet specific requirements of the client, as is the case with the LADOTD, who has provided the preferred project directory structure in Appendix F of their Bridge QC/QA policy. The structural calculations will be organized as directed in Appendix F of the LADOTD Bridge QC/QA policy.

3.3 Development of Technical Task Protocols, Design Tools, and Validation of Software

The design team will prepare technical task protocols for the purpose of documenting and providing detailed direction on specific design tasks. The protocols will provide direction on the specific use of design tools and validated software involved in the completion of the task. The documents will be controlled; revisions to the protocols will be noted by revision number and updated in the Project Plan.

All revisions to task protocols will be communicated to design staff. Design Tools (i.e. – Spreadsheets, MathCAD sheets, etc.) will be developed and utilized for specific design calculation functions. All design tools that are prepared will be validated as required by the AECOM QMS, documented, filed and available for audit.

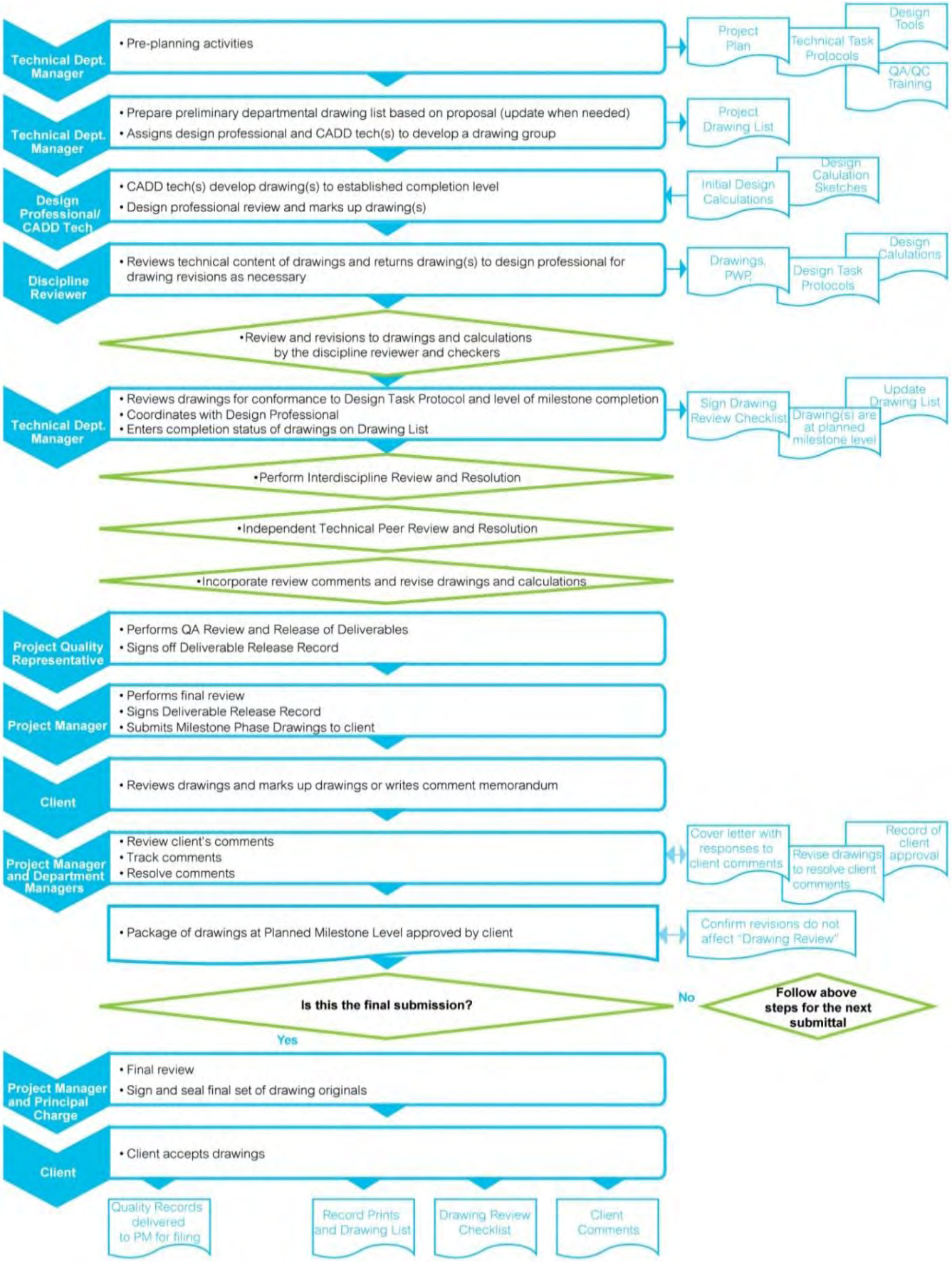
To the extent possible, the design team will select from the pre-approved list of software posted on the LADOTD Bridge Design website. Before using the pre-approved software, the program will be validated as directed in the AECOM QMS prior to use. For special applications where software not included in the pre-approved list must be used, a synopsis of the software will be provided to the LADOTD Bridge Design Engineer for approval prior to use. Similar to the pre-approved software, all specialty software will be validated as directed in the AECOM QMS prior to use.

4.0 QUALITY CONTROL AND QUALITY ASSURANCE REVIEWS

4.1 Design Deliverable Activities

As indicated by the Scope of Services, formal submittals for review by LADOTD staff are expected at the preliminary (30%, 60%, 90%, 100%) and final plan (30%, 60%, 90%, , 98% & 100%) development phases. The plan-in-hand meeting will be performed based on the preliminary submittal. In addition, an independent review of the preliminary submittals will be performed by the LADOTD. Comments from these reviews must be resolved prior to proceeding to the final plan milestone.

Prior to each of the formal submittals, a 3-tiered quality control (QC) design review will be performed as well as a quality assurance (QA) review. A flowchart describing the QC/QA process for design plans on the Bridge Preservation IDIQ contract and our approach to implementation of these procedures is described below.


Technical Dept. Manager
• Pre-planning activities
Project Plan
Technical Task Protocols
Design Tools
QA/QC Training
Technical Dept. Manager
• Prepare preliminary departmental drawing list based on proposal (update when needed)
• Assigns design professional and CADD tech(s) to develop a drawing group
Project Drawing List
Design Professional/ CADD Tech
• CADD tech(s) develop drawing(s) to established completion level
• Design professional review and marks up drawing(s)
Initial Design Calculations
Design Calulation Sketches
Discipline Reviewer
• Reviews technical content of drawings and returns drawing(s) to design professional for drawing revisions as necessary
Drawings, PWP
Design Task Protocols
Design Calulations
•Review and revisions to drawings and calculations by the discipline reviewer and checkers
Technical Dept. Manager
• Reviews drawings for conformance to Design Task Protocol and level of milestone completion
• Coordinates with Design Professional
• Enters completion status of drawings on Drawing List
Sign Drawing Review Checklist
Drawing(s) are at planned milestone level
Update Drawing List
•Perform Interdiscipline Review and Resolution
•Independent Technical Peer Review and Resolution
•Incorporate review comments and revise drawings and calculations
Project Quality Representative
• Performs QA Review and Release of Deliverables
• Signs off Deliverable Release Record
Project Manager
• Performs final review
• Signs Deliverable Release Record
• Submits Milestone Phase Drawings to client
Client
• Reviews drawings and marks up drawings or writes comment memorandum
Project Manager and Department Managers
• Review client's comments
• Track comments
• Resolve comments
Cover letter with responses to client comments
Revise drawings to resolve client comments
Record of client approval
• Package of drawings at Planned Milestone Level approved by client
Confirm revisions do not affect "Drawing Review"
Is this the final submission?
No
Follow above steps for the next submittal
Yes
Project Manager and Principal Charge
• Final review
• Sign and seal final set of drawing originals
Client
• Client accepts drawings
Quality Records delivered to PM for filing
Record Prints and Drawing List
Drawing Review Checklist
Client Comments

4.2 Discipline Level QC Review of Inspection & Condition Assessment Reports, Calculations and Drawings

In this first tier of QC review, a detailed review of inspection findings and site information is performed. A similar QC review will be performed on design calculations and drawings if required by the project's scope. Preceding the review, design development for the design phase is completed. Design activity is in a "pencils down" mode and review sets are produced. In the Discipline QC, all inspection findings, design calculations and drawings are thoroughly checked for accuracy, completeness, and for compliance with the project's design task protocols. The reviewer is designated as an engineer within the Quality Control Team. The review is documented in the calculations and drawings using a check print stamp and a color-coded mark as indicated below:

- Yellow – Confirmed
- Black – General comment or suggestion
- Red – Correction to be made
- Green checkmark or text – Backcheck and concurrence with comment or other resolution
- Blue circle – Indicates correction was made
- Pink circle – verification by the reviewer that the comment was addressed

Once the Discipline QC review of the reports, drawings, and calculations is completed, verified, and documented using AECOM-based and LADOTD-based checklists, the reports, drawings, and calculations are designated as ready for an independent peer review for LADOTD in parallel with an Inter-Discipline QC Review. Issues that cannot be resolved between the Discipline QC reviewer and the original designer will be elevated to the design team leader or deputy project manager for resolution. These processes are described below.

4.3 Independent Peer QC Review of Inspection & Condition Assessment Reports, Calculations and Drawings

In the next tier of QC review (for items deemed necessary), an independent peer review is performed by an independent design team. AECOM will coordinate any independent reviews deemed necessary. The peer review of the structural design drawings and calculations will be completed using the independent design check method. Preceding the Independent Peer review, the Discipline QC review will be completed, and design activity is in a "pencils down" mode. If structural replacement is deemed necessary, drawing and calculation sets are produced for review and comparison with the independent design, as described in the paragraphs below.

Using the drawing review set, the peer review team will perform analysis and design calculations by independent means and design tools. The independent review will confirm the adequacy of the design and resolve any design discrepancies between the designer and reviewer. Once resolved, if necessary, the original calculations will be further revised to reduce or eliminate the difference in design results. This process is documented in forms, with participants, including LADOTD staff, signing off on resolved issues. The independent calculations will be documented in a separate volume of the calculation set. In addition, the post-Discipline review drawing set will be reviewed by the peer review team. Comments will be documented in the forms noted above and resolved in a similar fashion.

In addition to formal review periods, the peer reviewer may participate in "over the shoulder" review meetings during the design process. The purpose of these reviews is to identify potential pitfalls with the direction the design team is taking and to assist in developing corrective action in a timely manner to avoid significant rework in later stages of the design completion.

4.4 Inter-Discipline QC Review of Drawings

The Inter Discipline Review is a discipline leader and project manager review of the documents and is intended to be an overall design coordination review to identify potential conflicts in the plans between disciplines (i.e. – Roadway and Geometry, Structures, Geotechnical, Traffic Engineering, etc.). Preceding the Inter-Discipline review, the Discipline QC review will be completed, design activity is in a "pencils down" mode and a drawing set is produced for review. Similar to the Discipline Review process, comments are provided in black or red, concurrence or other resolution in green (checkmark), corrections in blue (circle), and verification by the reviewers in pink (circle). Issues that cannot be resolved between the Inter-Discipline QC reviewer and the original designer will be elevated to the design team leader for resolution. This review is documented in the Drawing QC checklist form previously discussed.

4.5 Quality Assurance Review of Calculations and Drawings

Once the drawings and calculations have completed the tiered, Discipline QC, Independent Peer QC (for items deemed necessary) and Inter-Discipline QC review processes, the submittal is ready for a Quality Assurance review. This review is performed by AECOM by a specifically trained senior engineer designated to be the QA Manager for the project. For the Bridge Preservation IDIQ contract, Ken Butler, PE will fill the role of QA Manager. The QA reviewer will examine all documented review materials, including plans, calculations, and QC forms for compliance with the AECOM and LADOTD policies and for completeness. In addition, the QA process verifies that the QC process was effective in preventing design and plan errors and in assuring consistency. Any comments provided by the QA reviewer on the QC process or documentation must be resolved and addressed prior to the QA reviewer approving the design package (plans and calculations) may be submitted. Comments that are systemic in nature (e.g., repeated multiple times) will require a repeat of the quality training or a protocol will be added to ensure systemic issues are corrected and not repeated.

4.6 Post QA Review Revisions

If for any reason (e.g., late inputs or other issue not anticipated) revisions are necessary during or after completion of the QA review, all revisions will be documented in drawing or calculation check prints and forwarded with revised drawings or calculations to the QA reviewer for a secondary review, prior to submittal. If the changes are substantial, LADOTD Design Lead and AECOM QA Manager will evaluate and determine if the QC/QA process needs to start over.

4.7 Submittal and Filing

Once the QA reviewer has verified that the QC process was completed satisfactorily, he will complete and sign the Document Release Record, allowing the submittal to be released to the client. All calculation, drawing and QC/QA documents will be filed and archived in the project folder, organized, and filed by submittal.

5.0 DOCUMENTATION OF COMMENTS/RESPONSES

5.1 Documentation of Internal Comments and Responses

The documentation of all internal comments and resolution will be contained within Discipline QC drawing check prints and forms, calculation review check prints and forms, and in Independent Peer Bridge QC calculation review forms and drawing check prints. Similarly, the documentation of the Inter-Discipline QC comments and resolution will be contained within the drawing check prints and forms. All QC documents will be stored electronically in the project folder and be available for audit.

5.2 Documentation of Client Comments and Responses

At formal submittal client reviews, a comment log will be used to document all comments, by page number. A plan markup may also be provided by the client. The design team will promptly review all comments received and schedule a comment resolution meeting to resolve the comments and set forth an action list to be completed prior to the next formal submittal. Revisions required by the action list will be documented in drawing and calculation Discipline QC review check prints for the next formal submittal. The QA Manager is responsible for tracking the resolution of comments.

5.3 Quality Assurance Records

Finally, the documentation of the QA review will be contained within the Document Release Record form at the completion and verification of all QC and QA review activities. All QA documents will be stored electronically in the project folder and be available for audit.

6.0 CONTROL OF SUBCONSULTANT QC PROCESS

AECOM's approach to project management and delivery is to fully incorporate subconsultants into an integrated project team, as opposed to an approach where subconsultants operate independently, with their deliverables "plugged into" the overall formal submittal. Subconsultants are integrated into the project communication process through weekly project coordination meetings. Individual subconsultant resources are expected to work as an extension of, and inclusive with, AECOM's staff resources. As such, subconsultants are expected to be fully trained in the AECOM QMS policy and to participate the Discipline QC and Inter-Discipline QC reviews.

As described previously, all project personnel (including subconsultants) will be trained in both the LADOTD's Bridge QC/QA policy and AECOM's QMS policy. The training will be done by the Quality Assurance Manager, or designated Project Manager or Deputy Project Manager familiar with and experienced in the LADOTD's Bridge QC/QA policy or AECOM's QMS policy.

7.0 CLIENT FEEDBACK AND QUALITY AUDITS

7.1 Administrative Oversight and Continuous Improvement

A desired outcome of the AECOM QMS policy is continuous improvement. The process identifies issues where the design team (collectively and individually) can improve design processes and skills. Most importantly, feedback from the client is solicited and incorporated into our process of continuous improvement, for each formal submittal. All project performance issues are discussed internally with the design team in weekly design coordination meetings throughout the project.

7.2 Internal and External Quality Audits

AECOM performs independent internal audits of projects to ensure that the QC/QA program is being implemented correctly. As all quality records are maintained for each formal submittal in the project directory, all QC and QA documents are available for LADOTD quality auditors at their request.

APPENDIX A – PROJECT PRE-PLANNING GUIDANCE & FORMS

- *LADOTD Design Criteria Checklist*
- *LADOTD Project Activity Log Sheet*
- *LADOTD Bridge Design Section Records Retention Policy*
- *LADOTD Consultant Project Kick-Off Meeting Agenda Checklist*
- *AECOM QMS Project Plan Procedure and Example Form*
- *AECOM QMS Project File Index*
- *AECOM QMS Technical Task Protocol Procedure and Example Template*
- *AECOM QMS Software Validation Procedure and Example Form*
- *Sample QC/QA Training Module – Technical Quality Review Job Aid*

APPENDIX A—DESIGN CRITERIA CHECKLIST

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

__ **Cover sheet**

The following information must be included on the cover sheet:

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

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

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

__ **Design Assumptions and Design Exceptions**

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

__ **General Information**

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

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

__ **Hydraulic Design Criteria**

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

__ **Design Factors**

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

__ **Design Loads**

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

__ **Limit States**

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

__ **Bridge Barrier Railing**

The design criteria, types, and test levels for bridge barrier railings shall be listed in this section. Standard Plans 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 should be listed if they are utilized.

__ **Approach Slab**

Design criteria for approach slab shall be included in this section. Standard Plans 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 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 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 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 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 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 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 should be listed if they are utilized.

__ **Mechanical Design**

All mechanical design criteria shall be included in this section if applicable. Standard Plans should be listed if they are utilized.

__ **Electrical/Lighting Design**

All electrical design criteria shall be included in this section if applicable. Standard Plans 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.

APPENDIX J—PROJECT ACTIVITY LOG SHEET

Project No.:

Project Name:

Bridge Task Manager:

Date	Project Activity	Comments

APPENDIX F—BRIDGE DESIGN SECTION RECORDS RETENTION POLICY

Item No.	Record Title	In Office Retention Period (by Bridge Design Section)	DOTD Total Retention (by General Files)	Archiving Instruction	Responsible Party
001	Design Manuals/Guidance and Bridge Design Technical Memoranda	ACT* + 1 CY**	Life of the Agency	Archive electronically in Project-wise under Documents_Reference Materials\Bridge Design Section Archive\Design Manuals-Guidance	Assistant Bridge Design Administrator responsible for design manuals
002	Bridge Design Standard Plans	ACT* + 1 CY**	Life of the Agency	Archive electronically in Project-wise under Documents_Standard Drawings	Bridge Design Standards Manager
003	Final Plans, Revisions, and Change Orders (CAD files)	ACT* + 1 CY**	Life of the Agency	Archive electronically in Project-wise under Project folder\Bridge-Facilities\Discipline\Plans *(Subfolders for each revision and change order should be created under Plans)*	Bridge Task Managers
004	Final Plans, Revisions, and Change Orders (Original signed hard copies)	ACT* + 1 CY**	Final Project Acceptance Date + 5 Years	Transmit to General Files and archive electronically in DOTD Network Plan Room by General Files	Bridge Task Managers
005	Final Plans, Revisions, and Change Orders (Digital signed copies in pdf format, to be implemented)	ACT* + 1 CY**	Life of the Agency	Archive electronically in Project-wise under Project folder_Published Submittals\Project Drawings_Final Plans	Bridge Task Managers
006	Shop Drawings , Erection Drawings, RFIs, and Other Construction Submittals (Final Distribution Copy in pdf format)	ACT* + 1 CY**	Life of the Agency	Archive electronically in Project-wise under Project folder_Published Submittals\Project Drawings\Construction Submittals\Shop Drawings or Erection Drawings or RFIs or Other Construction Submittals *(See BDTM.49 for instructions)*	Bridge Task Managers

*ACT = End of activity or final project acceptance date for project related items

**CY = Calendar Year

APPENDIX F—BRIDGE DESIGN SECTION RECORDS RETENTION POLICY (CONTINUED)

Item No.	Record Title	In Office Retention Period (by Bridge Design Section)	DOTD Total Retention (by General Files)	Archiving Instruction	Responsible Party
007	Shop Drawings (Final distribution hard copies and pdf files)	ACT* + 1 CY**	Life of the Agency	Transmit to General Files and archive electronically in DOTD Network Plan Room by General Files (See BDTM.49 for instructions)	Bridge Task Managers
008	Final Design Calculation Files for In-House and Consultant Projects (Stamped calculation book in pdf format, stamped final reports, and final electronic design models)	ACT* + 1 CY**	Life of the Agency	Archive electronically in Project-wise under Project Folder\ _Published Submittals\Project Documents\Final Design Calculations & Reports	Bridge Task Managers
009	Bridge Rating Reports	ACT* + 1 CY**	Life of the Agency	Archive electronically in Content Manager under Load Rating.	Bridge Rating Engineer
010	Truck Permits Calculations	ACT* + 1 CY**	Life of the Agency	Archive electronically in a designated folder on the Bridge Design server.	Bridge Rating Engineer
011	Chief Engineer Orders (Bridge Posting)	ACT* + 1 CY**	Life of the Agency	Archive electronically in Content Manager under Chief Engineer Orders.	Bridge Rating Engineer
012	Project Related Correspondences (Original Hard Copies)	ACT* + 1 CY**	Final Project Acceptance Date + 5 Years	Archive electronically in Content Manager under Design Projects. At the end of in office retention period, the hard copies shall be boxed, marked with project number and record item No. with description, and then transmitted to General Files for their handling.	Project Managers/Bridge Task Managers

*ACT = End of activity or final project acceptance date for project related items.

**CY = Calendar Year

APPENDIX F—BRIDGE DESIGN SECTION RECORDS RETENTION POLICY (CONTINUED)

Item No.	Record Title	In Office Retention Period (by Bridge Design Section)	DOTD Total Retention (by General Files)	Archiving Instruction	Responsible Party
013	Project Related Correspondences (Emails) *(Note: If the email is considered as important project correspondence and needs to be kept for the life of agency, then the email should be printed and treated as item 012.)*	ACT* + 1 CY**	Final Project Acceptance Date + 5 Years	Archive electronically in Project-wise under Project Folder\ _Published Submittals\Project Documents\Project Correspondence Emails	Project Managers/Bridge Task Managers
014	Administrative or Other Types of Correspondences	ACT* + 1 CY**	Life of the Agency	Archive electronically in Content Manager under Bridge Design Subject Files	Everyone

*ACT = End of activity or final project acceptance date for project related items

**CY = Calendar Year

APPENDIX H—CONSULTANT PROJECT BRIDGE DESIGN KICK-OFF MEETING AGENDA CHECKLIST

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 be limited to, the following items:

__ Introduce LADOTD Bridge Task Manager and the Consultant's Key Team Members (The Supervisor or Team Leader and Key Designers/Design Checkers/Reviewers)

__ 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.)

Project Plan Procedure

Q2[DCS]-221-PR1

Proposal/ Prelim Plan (Pre-Award)

WHO	WHAT	WHEN
PM or BM/CM	• Complete CRM opportunity record in CRM system, as applicable. • Include research in iJet/WorldAware for any location threat risks.	**Go/No Go Gate 1**
PM or BM/CM and TL	• For C2, C1 and C0 projects, draft a preliminary Project Plan. • Develop a preliminary technical approach to include in the proposal per the Technical Approach - Planning & Review Procedure - DCS.	**Proposal Gate 2**
PM P&LM or Project Approver	• Prepare proposal in accordance with Go/No Go Procedure – DCS and Proposal Review Procedure – DCS.	

Executable Project Plan (Post-Award)

PM and TLs	• Following award, contract review and Healthy Start Review (where required), complete the Project Plan (using appropriate template) ensuring it captures/reflects any changes made between proposal submission, award and contract review, and includes any context or changes as discussed with the client during the client kick off meeting.	**Execution Gate 3**

Review and Approval of Project Plan

PM	• Submits the current version of the Project Plan for review and approval in accordance with the Risk Category (C-category) graded approach approver requirements – Refer Section 2.	**Execution**
P&LM or Project Approver	• Responsible for being involved in the process of reviewing the Post Award versions of the Project Plan prior to the approval and submission of the proposal and execution of project in Oracle. • Confirm the project has been appropriately baselined in accordance with the negotiated, agreed proposal with the client.	

Project Plan Management

PM	• Communicate and distribute to the project team prior to work commencing. • Review the Project Plan regularly and update with changes throughout the lifecycle of the project and save in the Project UFI. • Significant changes in the Project Plan are to be identified clearly and communicated to all team members. • Control distribution (e.g. note revision and revision date in file name) so most current revision of the Project Plan is in use by team members. • Consider any client-required controls in the management and distribution of the Project Plan.	**Execution**

Related PPI

- Enterprise Approval Matrix – AECOM Global R1-001-PL1
- Project Review Procedure – AECOM Global R1-200-PR1
- Project Document and Records Control Procedure – DCS Q2[DCS]-222-PR1
- Project Meeting Procedure – DCS Q2[DCS]-251-PR1
- Project Risk Management Procedure – DCS Q2[DCS]-231-PR1
- Graded Risk Approach: Project Delivery Requirements – DCS Q2[DCS]-231-WI1
- Technical Approach – Planning & Review – DCS Q2[DCS]-321-PR1
- Technical Quality Review – DCS Q2[DCS]-351-PR1
- SH&E Management System Manual – AECOM Global S2-001-SM1
- Subs Management Procedure – DCS Q2[DCS]-141-PR1

References

- N/A

Terms & Definitions

- AECOM Glossary

Change Log

1. Purpose and Scope

The DCS Project Plan Procedure defines the minimum requirements of the Project Plan and the methodology for preparing and updating the Project Plan through the life of the project. It has been demonstrated through AECOM trends and metrics and external client benchmarking that poor project planning leads to delivery performance issues including lost margin, late delivery, inconsistent quality of deliverables, and client and AECOM team dissatisfaction.

All projects shall have a Project Plan of sufficient detail to manage the risks of the project. Where appropriate, the Project Plan should link to reference documents either attached or hyperlinked. Citation of these in the relevant Project Plan section constitutes conformance to this required Procedure.

The Project Plan will at a minimum:

- describe how the scope of services as specified in the contract (or as subsequently agreed to with the client) will be accomplished to meet the expectations and objectives of both the client and AECOM team and to achieve the expected business results and client outcomes.
- identifies project and business risks with a plan to manage these through exclusions and contingency.
- describes the agreed communication plan with the client (method, timing and approach to project changes with client and project team).
- is the overarching control document. Any Sub-Plans or Project Plan elements (e.g., master schedule, risk register, registers, project quality plan, etc.) must be controlled as per the Project Plan.
- is used as a planning and management tool and means to share project information and expectations with the Project Team.
- shall address joint venture relationships and work- sharing between AECOM offices and geographies, where applicable.
- must be developed using the Project Plan Template (Long or Short, or C3A Project Plan) or project plan document required by the client if equivalent to the Project Plan Template.
- Is fit-for-purpose, appropriate for the risk and complexity of the project.

N.B. For projects involving multiple AECOM locations or geographies, it is the managing entity's responsibility to develop the overall Project Plan and communicate it with its global stakeholders. Of special note is the need to clearly define how checking and verification is to be accomplished, coordinated and documented.

2. Graded Approach

The graded risk approach applies to this procedure. To determine the project risk category (C-category), click here for the AECOM Risk Assessment Tool. Use the below matrix for the required rigor of this procedure based on the risk category of the project.

Geography	C3A	C3	C2	C1	C0
DCSA EMEA ANZ	C3A Project Plan or equivalent document content approved by PM and Project Approver	Short Form – Project Plan or equivalent document content approved by PM and Project Approver.	Long Form – Project Plan or equivalent document content approved by PM and Project Approver.	Long Form – Project Plan or equivalent document content approved by PM and Project Approver.	Long Form – Project Plan or equivalent document content approved by PM and Project Approver.
GC and SEA	Nil	Project Plan – APAC – Asia or equivalent or Project Plan – Short Form – APAC - Asia (if the C3 project meets all the criteria listed on the form) document content approved by Project Approver and Local Quality Manager.	Project Plan – APAC – Asia or equivalent document content approved by Project Approver and Local Quality Manager.	Project Plan – APAC – Asia or equivalent document content approved by Project Approver and Local Quality Manager.	Project Plan – APAC – Asia or equivalent document content approved by Project Approver and Local Quality Manager.

Exceptions and modification to the requirement for a Project Plan are as follows:

a. MSA's or IDIQ programs may have a Program Project Plan and then use either the Project Plan - C3A – DCS or the Project Plan – Addendum – DCS to the Program Project Plan Vs. creating a stand-alone project plan for each task.

b. Projects with continuing services where Finance requires a new project number is initiated year-over-year, should review and confirm the current Project Plan remains applicable. If it does, the existing Project Plan can be used for the new project number (prepare 1-page addendum noting the new project number or note in plan revision the old/new project numbers).

c. AECOM seconded employee projects do not require an AECOM Project Plan.

d. The client or certain project circumstances may require exception to AECOM standard operational procedures. These variations (e.g., document and records control for confidential projects) shall be described in the Project Plan and reviewed/approved by Project Approver.

3. Procedure

3.1 Implementation

The Project Plan shall contain a level of detail commensurate with the complexity of the project and knowledge of special concerns and issues at the time using the Project Plan template options above as per the project risk category.

Action By	Action
Project Manager (PM) and/or Deputy PM (DPM)	1. Develop Project Plan using the template according to the project risk category and issue to the project team at the kickoff meeting. 2. Update Project Plan throughout the lifecycle of the project for reference by the project team to the most up-to-date scope, standards, budget, schedule and client communication requirements.

The content of the Project Plan is driven by the Project Plan template options according to the project risk category. If, another Project Plan is developed, the contents of the Project Plan must be equivalent to the templates.

a. Other project-related plans may be required by the client as a part of our scope of services (e.g. Quality Assurance Plan or Project Quality Management Plan) or internal AECOM policy (e.g., Health and Safety Plan, Operational Security Plan). These stand-alone plans should be developed in accordance with the Project Plan and referenced, attached or hyperlinked to the Project Plan where appropriate. Generic templates for these plans are available for use in the geographies on the PDS or the functional area home page on the AECOM intranet.

b. When AECOM is the primary or majority joint venture partner, PM will prepare an overall Project Plan in conformance with this procedure and/or any client requirements (topics and approvals) and direct the joint venture partners conform to the requirements of the Project Plan, when included as part of our contract agreement.

c. When AECOM is a secondary or minority joint venture, PM will prepare a Project Plan for those portions of the work being performed by AECOM in conformance with this procedure.

4. Records

a. Approved Project Plan and Referenced Documents

b. Project Plan – Long Form – DCS Q2[DCS]-221-FM1

c. Project Plan – Short Form – DCS Q2[DCS]-221-FM2

d. Project Plan – C3A – DCS Q2[DCS]-221-FM3

e. Project Plan – Addendum Q2[DCS]-221-FM4

f. Project Plan – APAC - Asia Q3AS-221-FM1

g. Project Plan – Short Form – APAC – Asia Q3AS-221-FM2

5. Appendices

a. N/A

6. Change Log

Rev #	Change Date	Description of Change	Location of Change
0	11-May-2011	Initial Release as Q2-221-PR1	
1	01-Oct-2012	2012 Review – minor editorial changes	All
2	10-Oct-2014	2014 Review – minor editorial changes and issued as I2-221-PR1	All
3	21-Mar-2016	2016 Review – updated to new IMS Template and implemented ePM elements.	All
4	07-May-2018	2017 Review – put into new IMS Template, changed to 2 column layout, updated cross-references and issued as Q2[DCS]-221-PR1.	All
5	20-Jan-2020	2020 Review – minor edits; removal of references to ePM; introduced Graded Approach; removal of Appendices 1 and 2 – Flow Diagram and Project Plan Content Descriptions.	All
6	04-Aug-2020	Minor edits; new exception of Asia using own Project Plan Template; introduced the Project Plan – Addendum option	Section 2, 4
7	11-Sep-2020	Addition of Asia requirement on the use of the Project Plan – Short Form – APAC – Asia Q3AS-221-FM2.	Section 2, 4

DCS

Project Plan Template - Long

Q2[DCS]-221-FM1

Project Name
Project No.

Approvals

Project Manager

Click or tap to enter a date.

Name	Signature	Date

Project Approver

☐ See attached signature page, digital signature or e-mail confirmation, or:

Click or tap to enter a date.

Name	Signature	Date

Click or tap to enter a date.

Quality Manager (if required by Project or Region)	Signature	Date

Change Log

Revision #	Brief Description of Changes	Date

Instructions: The following template is to be used for projects with risk level of C0, C1, or C2 as determined using the AECOM Risk Assessment Tool. Minimum requirements for Project Plan elements are found in the Graded Risk Approach: Project Delivery Requirements - DCS Q2[DCS]-231-WI1 and execution guidance is found in the Project Delivery System (PDS). Project Manager (PM) to make this Project Plan available to the project team and update as required for significant changes.

Index

1. Project Information

a. Project Details

Project Name					
Project Number		**Risk Category**	☐ C0 ☐ C1 ☐C2	**Risk Score**	
Project Manager		**Technical Lead**			
Project Approver					
Region / Area		**Lead Office**		**Business Line**	
Gross Revenue		**Net Service Revenue**		**GM%** or **NM%**	
Contract Type	☐ FPLS ☐ Target Cost ☐ GMP ☐ T&M w/ cap ☐ Unit Price ☐ T&M no cap				
Start Date	Click or tap to enter a date.	**Duration**			

b. Overview Description

Provide summary description of the Project function, size, location, site and its basic parameters. (This description may be used for marketing purposes, so it should be written as a narrative.)

2. Client Information & Contract

a. Client Details

Client Name (Company)			
Client PM		**E-mail**	
Key Contact / Responsibility		**E-mail**	
Key Contact / Responsibility		**E-mail**	
AECOM CAM / SAM			

b. Client Expectations

Describe the client's goals and expectations, how they will measure Project success, budget and schedule constraints, and agreed-upon client expectations.

☐ See **Appendix 1** for the hyperlink to the Client's expectations and objectives; or

☐ Briefly describe:

c. Contract Requirements

Briefly outline key elements of the client contract and whether any confidentiality agreements apply to the Project.

Contract: ☐ is project-specific

☐ MSA. MSA #: Click or tap here to enter text.

☐ See **Appendix 1** for the hyperlink to the contract or contract brief; and/or

☐ See **Appendix 1** for hyperlink or attachment to AECOM's confidentiality agreement(s); or

☐ Briefly describe key contract terms:

Are there Project-specific billing requirements? ☐ Yes ☐ No

If 'Yes', see **Appendix 1** for hyperlink to the Project billing requirements or contract

d. Client Feedback

Describe how the Client will provide Project performance feedback.

☐ See **Appendix 1** for the hyperlink to the Client's feedback form; or

☐ Briefly describe how Client feedback will be gathered:

3. Scope of Services, Schedules and Budget

a. Scope of Work

Brief description of the services that AECOM has agreed to provide to accomplish the Project goals and for which the client has agreed to pay. Include key assumptions and limitations.

☐ See **Appendix 1** for the hyperlink to the AECOM scope of work; or

☐ Briefly describe:

b. Schedule, Key Deliverables and Milestones

☐ See **Appendix 1** for hyperlink to the Project schedule and deliverables; and/or

☐ Complete the following:

Brief Description of Contracted Deliverables and Key Milestones	Target Date Due to Client

** Add rows as necessary*

c. WBS, Revenue and Cost Budgets

☐ See **Appendix 1** for hyperlink to the Project WBS, revenue and cost budgets

d. Staffing Plan

☐ See **Appendix 1** for hyperlink to the Project staffing plan

e. Is Earned Value being used on the Project? ☐ Yes ☐ No

☐ See **Appendix 1** for hyperlink to planned value curve

f. Change Management

☐ See **Appendix 1** for hyperlink to Change Management Plan; or

☐ Standard change management approach and forms will be used in accordance with the Change Management Procedure - DCS

4. Execution Approach

a. Key Execution Objectives

Briefly describe the key execution objectives and approach for this Project, driven by Client expectations, risks and opportunities, Project conditions, constraints, etc.

Briefly describe key objectives:

b. Technical Lessons Learned

☐ Technical Practice Group lessons learned from similar projects have been reviewed and have been incorporated into the Project risk register

c. Project Directory, Roles and Responsibilities

☐ See **Appendix 1** for hyperlink to organization chart and roles/responsibilities, including subs and key stakeholders; and

☐ Identify key roles and responsibilities

i. **Key AECOM Staff** (Include GDS and JV Staff when applicable)

Name	Company	Office	Responsibility

** Add rows as necessary*

ii. Subs (when applicable)

Name	Company / Organization	Phone No.	E-Mail	Responsibility

** Add rows as necessary*

iii. Other Key Stakeholders (e.g. regulatory agencies, permitting authorities etc.)

Name	Company / Organization	Phone No.	E-Mail	Responsibility

** Add rows as necessary*

d. Global Delivery Services (GDS)

☐ GDS staff and resources will be used to complete this Project

☐ GDS staff and resources will **not** be used to complete this Project

If used, briefly describe the role of GDS on the Project, including disciplines and support functions, location/offices, scope, and time frame. If not used, briefly describe why your Project will not use GDS

e. Management of Subcontractors

☐ There are no subcontractors (subconsultants, suppliers, or construction contractors)

☐ See **Appendix 1** for hyperlink to the methodology for subcontractor management and subcontract(s); or

☐ Complete the table below to outline arrangements for managing the deliverables and quality of sub consultants / suppliers.

Subcontractor Name	Brief Scope	AECOM 'Owner'	How quality will be managed

** Add rows as necessary*

f. Technical Approach and Technical Quality Reviews

i. Technical Approach

Technical Approach: Describe how the approach/methodology is documented:

Technical Approach Review: Describe how the approach review was/will be performed:

☐ TAR Checklist ☐ TAR Meeting with meeting minutes

☐ Other, explain:

ii. Is a Project-specific Quality Management Plan (QMP) required to be submitted to the client?

☐ Yes ☐ No

☐ See **Appendix 1** for the hyperlink to the Project Quality Management Plan and forms and/or other appropriate documentation; or

☐ Describe the design quality management processes that will be used for the Project, where more stringent than the Technical Quality Review Procedure - DCS:

iii. The associated competent staff for reviewing/checking is:

Technical Reviewer / Checker	Discipline/Department

(Add rows as necessary)

iv. The associated competent staff for verification is:

Approved Lead Verifier	Discipline/Department

(Add rows as necessary)

v. Where applicable, the independent peer review team will be

Independent Reviewer	Discipline/Department

**Add rows as necessary*

vi. The Technical Quality Review Schedule will be as follows:

☐ See **Appendix 1** for hyperlink to the technical quality review schedule; or

☐ The Technical Quality Review Schedule will be as follows:

Task/Deliverables	Discipline/Department	Date (approx.)

** Add rows as necessary*

g. Permits and Regulatory Approvals

Are any permits other regulatory approvals required by the Project? ☐ Yes ☐ No

*If '**Yes**', list the permits required and indicate if the AECOM team is responsible for preparing applications and/or securing them.*

☐ See **Appendix 1** for hyperlink or attachment to the Project permit requirements.

5. Technical References

a. Applicable Local or Regulatory Codes and Standards

- Identify who will obtain and maintain up-to-date codes:
- Jurisdictions applicable to project:
- Agencies with approval authority:

☐ Applicable regulatory codes, standards, or other regulatory requirements that apply to the Project:

Code, Design Standard, or Requirement	Location of Document

** Add rows as necessary*

OR

☐ See **Appendix 1** for document location, hyperlink to the applicable codes and standards.

☐ Not applicable

b. AECOM Technical Standards

List AECOM technical standards, e.g., CAD, GIS, BIM, that will apply on this Project

References	Client Specified? (Y)	Location of Document

** Add rows as necessary*

c. Applicable References

List design guidelines, client standards, and other non-regulatory references that govern work on this Project

References	Client Specified? (Y)	Location of Document

** Add rows as necessary*

OR

☐ See **Appendix 1** for hyperlink to the applicable references and design criteria.

☐ Not applicable

d. Technical Software

List technical software to be used by the AECOM Project team on this Project.

Software	Discipline	Function / Use	Validated? (date)

** Add rows as necessary*

e. Professional Engineering

List AECOM staff who will sign/seal technical documents for this Project.

☐ No signing or sealing of documents is required

☐ Document signers are listed below:

Name	License Type and State	Discipline(s) Covered

** Add rows as necessary*

6. Risk Management

a. Approval Matrix Conditions

i. Was an AECOM DCS Risk Committee Approval (or regional Risk Committee) required for this Project?
☐ **Yes** ☐ **No**

ii. Was approval conditional? ☐ **Yes** ☐ **No**

If 'YES', identify approval conditions and mitigation strategies:

Approval Condition	Strategy to Mitigate

** Add rows as necessary*

b. Risk Management Plan

☐ See **Appendix 1** for hyperlink to the Project Risk Management Plan; or

☐ Standard risk management approach will be used in accordance with Project Risk Management Procedure - DCS.

c. Risk Register

☐ See **Appendix 1** for hyperlink to the Project Risk Register; and

☐ The top, key technical and Project execution risks, opportunities and mitigations are listed in the table below. A full project risk register is developed and updated in accordance with the Project Risk Management Procedure - DCS.

Risk / Opportunity Description	Mitigation / Strategy	Risk Owner

** Add rows as necessary*

7. Communications and Records Management

Indicate how Project Team and Client communications will be maintained and records will be managed, and by whom:

☐ See **Appendix 1** for the hyperlink to the Project Communication Plan; or

☐ Briefly describe:

a. Communication Roles

Responsible Team Member (Name)	Role	Contact with: Client / Sub / Partner / Others

** Add rows as necessary*

b. Project Meetings

E.g., team kickoff, client kickoff, Healthy Start, regular team meetings, client reviews, internal reviews

Meeting	Frequency or Date (approx)	Meeting Owner (Name)

** Add rows as necessary*

c. Project Reporting

E.g., client reports, internal reports, JV reports

Report	Frequency	Report Owner (Name)

** Add rows as necessary*

d. Document Control

i. Hard copy Project files are located at: <Type>

ii. Electronic Project files are maintained in (insert electronic file path address): <Type>

iii. Is this a US Federal project?

☐ Yes, contact IT for FBS Access Control - U.S Federal project server set-up

☐ No

iv. Is the Unified File Index - DCS being used? ☐ Yes ☐ No

If 'No', describe how documents are being stored/maintained in accordance with Project Document and Records Control Procedure - DCS:

v. The Document Controller in this Project is: <Type>.

vi. Describe (if applicable) how confidential or secured documents and records developed or obtained for this Project will be controlled, distributed and ultimately destroyed.

vii. List any special or unusual documents or records requiring control on this Project.

viii. Copyright Information

☐ No copyright issues on the project.

☐ All copyright issues will be addressed by – <Type> – prior to submittal of deliverables. Identify any specific copyright issues to be addressed (include requirements):

8. Project Safety, Health and Environment

a. Health and Safety

i. Does this project involve activities in a field location or environment which could place staff at risk of injury or ill health?

☐ **Yes** ☐ **No**

If 'No', office health and safety plans and systems are to be used.

*If '**Yes**', briefly describe hazard analysis, safety training, budget for safety equipment, etc in accordance with corporate/regional safety guidance – see AECOM Safety Playbook:*

☐ See **Appendix 1** for hyperlink to Project Health and Safety Plan and Forms as indicated above.

ii. Describe how Safety in Design will be employed during the design phase of the Project:

b. Environmental Management and Sustainability

i. Will this Project work impact the environment: ☐ **Yes** ☐ **No**

*If '**Yes**', briefly describe the environmental legislation, code of practice, green design standards, or Client sustainability objectives relevant to this work and how these are being addressed.*

☐ See **Appendix 1** for hyperlink to Project Environmental Management Plan and Forms.

ii. Does the Project scope provide any opportunity for sustainability? ☐ **Yes** ☐ **No**

*If **'Yes',** briefly describe the sustainability goals and framework for the Project, and how these are being addressed.*

☐ See **Appendix 1** for hyperlink to Project Sustainability Framework.

9. Project Closeout and Miscellaneous

a. Custody and Maintenance of Property

i. Will there be Client-owned property under the custody of AECOM? ☐ **Yes** ☐ **No**

*If **'Yes'**, outline arrangements for the control and protection of this property and its safe return to the Client. This may include reports, samples, archaeological finds, etc.*

ii. Will the company be required to maintain any physical material or products other than records after the conclusion of the Project? ☐ **Yes** ☐ **No**

*If **'Yes'** describe the arrangements for handling, packaging, storing and protecting such items.*

b. Maintenance of Equipment

Are there company-owned or leased monitoring or measuring devices or equipment used on the Project needing to be maintained or calibrated? ☐ **Yes** ☐ **No**

*If **'Yes'**, outline arrangements to identify, calibrate, adjust, protect and maintain such devices. Also, describe where records of calibration activities will be kept.*

c. Project Closeout

Briefly describe any special requirements for a) closing the project out with the Client, and b) archiving the project for AECOM records.

Appendix 1 Summary of Attachments

Instructions: This section is provided for ease of retrieving linked or attached documents.

Note: Documents linked to the Project Plan must be controlled

Section No	Items	Hyperlink
2	Client Expectations and Objectives	
2	Contract or Contract Brief	
2	AECOM Confidentiality Agreement(s)	
2	Project Billing Requirements	
2	Client's Feedback Form	
3	Scope of work	
3	Schedule	
3	Deliverables	
3	WBS, Revenue and Cost Budgets	
3	Staffing Plan	
3	Planned Value Curve	
3	Project Change Management Plan	
4	Project Team Directory / Org Chart	
4	Subcontractor Management	
4	Subcontract(s)	
4	Project Quality Management Plan and forms	
4	Technical Quality Review Schedule	
4	Project Permit Requirements	
5	Codes and Standards	
5	References and Design Criteria	
6	Project Risk Management Plan	
6	Project Risk Register	
7	Project Communications Plan	
8	Project Health and Safety Plan and Forms	
8	Project Environmental Management Plan and Forms	
8	Project Sustainability Framework	
	Other (describe)	
	Other (describe)	

Unified File Index

Legend

C0-C3A	Level 1 = for Risk Categories C0, C1, C2, C3, C3A - cannot be deleted
C0-C2	Level 2 = for Risk Categories C0, C1, C2
C0-C1	Level 3 = C0, C1 - at the discretion of the Project's Requirements
RN	= Renameable Folder, folder's name can be changed to suit project needs
Note	1: Refrain from using illegal characters in the folder naming convention: # % & " * / : < > ? \ | + , . ; = [ ] { } 2: Where necessary, use an 'underscore'.

Lvl 1	Lvl 2	Lvl 3 (C0-C1)	Guidance	Folder Permissions: Cannot Delete	Restrict Deletion BUT May Add To	RN = Renameable
(Project Number and Name)				**C0 - C3A**	**C0-C2**	**RN**
Client Name and Project Name (if project name is not above)				**Optional**		**RN**
000_PreContract [BID]			**This folder is intended as a repository for records of activities leading up to the client's notice-to-proceed on a project. Some of this information may need to be obtained from marketing/business development group.**	**C0 - C3A**		
	010_Go_NoGo [GNG]		In lieu of copy saved here, can be held in approved system.			
	020_RFP_RFQ [RFP]		The document, as received from the eventual client, that requests or invites the submittal of a proposal for the project.			
	030_Pricing [PRICE]		Records of pricing strategies, calculations, projections, etc. used to submit a cost quotation, either prior to, or after, selection.			
	040_Proposal [PROP]		The actual signed version of the final proposal submitted, and any relevant records leading up to it.			
	050_Presentation [PRES]		When applicable, a copy of the PowerPoint or other media used in a presentation to elaborate on our qualifications for the project.			
	060_Legal_Review [LEGAL]		Records of legal review of contract and terms and conditions; copy of Contract Review form if online tool not used.			
	070_Negotiations [NEG]		Records of negotiations regarding scope, schedule and pricing between AECOM and client.			
	080_Superseded [SS]		Superseded version of documents in the Pre-Contract folder.			
100_Contract [CONT]			**This folder is intended to hold all legal agreements, contracts, POs, insurance certificates or other documents that bind AECOM in a business relationship with another entity.**	**C0 - C3A**		
	110_Client_Contract [CL_CONT]		General records related to contracting process and signed version of the primary contract between AECOM and the Client; establish Level 3 folders as needed for Changes.			
	120_TO_PO [PO]		Signed and executed task orders, purchase orders and notice to proceed as required by the client's contract. Must include corresponding scope of work, cost estimate and schedule.			
	130_Approval_Matrix [APPVL_MTX]		Records of Approval Matrix approvals during the pre-contract and contract review process.			
	140_Risk_Committee [RSK_COM]		Store correspondence for RA/RFA/RFPAs, especially when required to submit quarterly Risk Committee approval update forms.			
	150_Subcontracts [SUBS]		Signed versions of contracts with technical/professional subs; establish Level 3 folders as needed for Subs Invoices, QA/QC, Insurance Certificates.			RN
	160_Vendors_Suppliers [VENDOR]		Signed versions of contracts/POs with materials, equipment, supply providers; establish Level 3 folders as needed.			RN
	170_Superseded [SS]		Superseded versions of documents in the Contract folder.			
200_Project_Control [PROJ_CONT]			**This folder is intended to contain records related to the overall project management and business administration of the project.**	**C0 - C3A**		
	210_Project_Plan_Risk [PLAN]		Save project plan and updates throughout project execution.			
	220_Risk_Assessment_Register [RISK_REG]		Save here for risk assessment (if online Risk Assessment Tool not used) and risk register (if not a part of the project plan) or electronic tool. Update throughout project.			
	230_WBS_Schedule [WBS_SCH]		Work breakdown structure and schedules. Include schedule bar charts, MS Project output/file, critical path analyses, other supporting documentation. Staffing worksheets, projections, assignment memos, etc.			
	240_Budget [BUDG]		Main budget is in APIC; here include supporting budget worksheets, projections, summaries for project team, etc.			
	250_Client_Invoices [INV]		Invoices submitted to the client. Level 3 folders, as needed, for things like Progress Reports.			
	260_Healthy_Start_Reviews [HS]		Healthy start reports, action items, follow-up documentation for evidence of closure .			
	270_Project_Reviews [PROJ_REV]		Review schedules, agenda, discussion summaries, action item lists. This is for overall status reviews; EACs, monthly/quarterly project status reviews, etc. QC reviews go in 420.			
	280_Closeout [CLOSE]		Records related to the pending or actual closure of the project.			
	290_Superseded [SS]		Superseded versions of documents in the Project Control folder.			
300_Communications [COMM]			**This folder is intended to house correspondence, records of calls, emails (<u>depending on local IT requirements</u>), meeting minutes and other forms of communication between AECOM and outside entities as well as internally within the AECOM team.** *** Meeting minutes can linked to meeting minutes in this folder.** *** It is anticipated Level 3 subfolders would be used appropriately according to the complexity of the project's organizational structure and as-needed to facilitate quick and easy retrieval.** *** As email is a primary form of communication, a separate email folder should not be necessary as the different file types (.pst, .pdf, etc.) of emails can be stored in the same folders with hard-copy scans of .doc, .ppt, .xls or other file types. Alternatively, a PM may elect to set up Level 3 subfolders within each of the four Level 2 folders as separate folders for emails, or for "incoming" and "outgoing" communications.** *** When documents that carry signatures are stored, these should either be electronically signed versions, or scans of wet-signed documents.** **Note: Must defer to local IT requirements/practice for storing email (e.g. '.msg' and '.pst').**	**C0 - C3A**		
	310_Client [CLIENT]		Emails, meeting minutes, communications to and from client. Can add a Level 3 to differentiate between different types of communications.			
	320_Subs [SUBS]		General communication outside contract negotiations. Can add a Level 3 set of folders to differentiate between multiple Subs.			
	330_External [EXT]		Outside/Third Party/Regulatory entities other than those AECOM has a contractual relationship with (agencies, authorities, commissions, etc.)			
	340_Internal [INT]		File notes, records of conversations.			
	350_Feedback [FEEDBK]		Include informal and/or formal client feedback, evaluations, ratings, etc.			
	360_Superseded [SS]		Superseded versions of documents in the Communications folder.			
400_Technical [TECH]			**Store data, input, standards, guidelines, manuals, calculations, software information and validation and other similar materials that support the development of the technical aspects of the work.** *** Examples of Level 2 folders: Reports, Calculations, Data, Information, etc. Includes all non-CAD, non-GIS working documents.** *** Replace "431_TechnicalArea_X" with appropriate naming convention.**	**C0 - C3A**		
	410_Technical_Approach_Review [TAR]		Record of Technical Approach Review and follow-up; resolution of TAR comments.			
	420_Technical_Quality_Reviews [TQR]		Supporting evidence of quality review activity (markups, check sets, comments log, TQRRs, etc.). May include optional QC Review checklists or other discipline-specific checklists.			
	425_Calculation_Review [CALC]		Record of Calculation Review and follow-up and resolutions.			
	430_Technical Working Documents					
	431_TechnicalArea_X					RN
	432_TechnicalArea_X					RN
	433_TechnicalArea_X					RN
	434_TechnicalArea_X					RN
	440_Field_and_laboratory_data [DATA]		Intended as a location for field forms, field data, boring logs, laboratory data and analyses, research data, permits, etc. Used to develop deliverables.			RN
	450_Photos [PHOTO]		Project photos, field photos and corresponding photo logs.			RN
	460_Superseded [SS]		Superseded versions of documents in the Technical folder.			
500_Deliverables [DELIV]			**File the record set (.pdf/locked version) of issued deliverables submitted to the client / outside entities (e.g. funding agencies, permitting agencies, etc.):** *** Replace "50X_Deliverable_X" with the appropriate naming convention matching the deliverable naming convention.** *** It is a requirement that these deliverables will be reviewed in accordance with the Technical Quality Review Procedure - DCS. Records of this review (TQRR) are stored in the respective deliverable folder (501, 502, etc.), or storage in folder 420 as determined by the PM.** *** Include client's interview review comments and transmittals associated to deliverables.**	**C0 - C3A**		
	501_Deliverable_X					RN
	502_Deliverable_X					RN
	503_Deliverable_X					RN
	504_Deliverable_X					RN
	580_Other		Where superseded drawings exist as a deliverable, include in this folder for a record of the entire issued set.			RN
	590_Superseded [SS]					
600_Construction Support [CSUP]			**This folder is intended to house records of AECOM's interaction with third-party contractors that are building the work designed by AECOM. Projects where construction management or administration is the primary service may be required to follow a different file organization structure by contract.**			**RN**
	610_Addenda [ADDENDA]		Copy of issued contract addenda, as well as other supporting documents leading up to the addenda release.			
	620_Communications [COMMS]		Use Level 3 subfolders as desired to separate among various entities and/or types of communications (emails, meeting minutes, claim documents, etc.).			
	630_RFIs [RFI]		Requests for Information submitted by contractors and our replies.			
	640_Shop_Dwg_Submittals [SHP_DWG_REV		Review of shop drawings and other submittals received from contractors.			
	650_Pay_Applications [PAY_APPL]		Pay requests from the contractor, including AECOM's review and response.			
	660_Change_Orders [CHG_ORD]		Use Level 3 subfolders as needed to contain information related to each change order including permit approvals.			
	670_Site_Visits_Inspections [SITE_INSP]		Records and notes resulting from AECOM inspections of the work performed.			
	680_Punch_List_Closeout [PUNCH]		Documentation and progress records of contractor efforts to complete the work. Add Level 3 folders for items such as Maintenance Manuals, etc.			
	690_Superseded [SS]		Superseded versions of documents from Construction Support folder.			
700_Quality_Env_Sust [QES]			**The electronic tools (iQT, AECOM U) serves as the primary repository for some of these documents. When desired, or when electronic tools are not accessible to a project, this folder is used to house these records.**	**C0 - C3A**		
	710_Plans [Q_E_PLAN]		Project-specific quality, environmental management and sustainability plans requested by clients above and beyond the sections in the project plan. If a deliverable, can be the work product in this folder with the final deliverable in a deliverable folder above.			
	720_Audits_and_CARs [AUDIT_CAR]		Project safety, quality, EMS audit findings, nonconformities and corrective action documentation (If documentation not retained in iQT).			
	730_Training [TRAIN]		Evidence of EMS, QMS, etc. training performed for the project.			
	740_Reserved_for_PMs_option					RN
	750_Superseded [SS]		Superseded versions of documents in the QES folder.			
800_Safety [SAFETY]			**This folder would be used on projects that involve field work or other-than-ordinary office-based physical activities that present a safety hazard.**	**C0 - C3A**		
	810_Safety_Plan [SFTY_PLN]		Project-specific safe work plan, safety and health plan, Task Hazard Analyses (THAs), and hazard checklists as applicable.			
	820_Training [TRAIN]		Include records of project-specific S&H training.			
	830_Meetings [MTGS]		Include attendance/agenda of on-site tool box meetings, attendance at contractor mtgs, etc.			
	840_Incidents [INCID]		Investigation of safety incidents. Coordinate with SH&E and Legal regarding records to keep in project files.			
	850_Safety_in_Design [SiD]		Include records and reports.			
	860_Superseded [SS]		Superseded versions of documents in the QES folder.			
900_CAD_GIS			**Intended as a location for CAD/BIM files, GIS graphics, works-in-progress and collaborative working documents. Finished deliverables are stored in Section 500. If clients require alternate file structure, that requirement takes precedence over the below structure.**	**C0 - C3A**		
	910_CAD		Intended as folder structure for design working documents that use CAD technologies, processes, and procedures to create, compose, and deliver project deliverable content. For example, AutoCAD (and design apps), Micro Station (and design apps), and Revit (design apps.) are examples of CAD/BIM technologies that will use this folder structure to manage and deliver project content. Other design technologies such as water modeling, traffic simulation, or structural analysis applications may choose to use these folders to integrate data more efficiently with CAD/BIM technologies.			RN
	911_Discipline_X					
		911_1_WIP				
		911_2_Shared				
		911_3_Published				
		911_4_Archived				
	912_Discipline_X					
		912_1_WIP				
		912_2_Shared				
		912_3_Published				
		912_4_Archived				
	920_929_(GIS_Graphics)		Customizable based on scope of services and GIS and/or Graphics needs.			RN
	930_BIM		Intended as folder structure for design working documents that use BIM technologies, processes, and procedures to create, compose, and deliver project deliverable content. For example, BIM (and design apps) or REVIT will use this folder structure to manage and deliver project content. Other design technologies such as water modeling, traffic simulation, or structural analysis applications may choose to use these folders to integrate data more efficiently with BIM technologies.			RN
	940_999_Reserved_for_PMs_option					RN

Unified File Index

Rev	Rev Date	Details
1	15-Jul-16	Initial Release as Q2[DCS]-222-WI1
2	15-Jul-16	Minor edits.
3	23-Oct-16	1. Level 2 folder abbreviations added in [ ]. 2. If abbreviations are not used, do not add the brackets or information inside of the bracket in the folder set up.
4		1. Instruction not to use illegal characters in folder naming convention - use 'underscore' instead.
5	07-Dec-16	1. Updates to CAD_GIS folder per Global CAD/BIM teams request
6	01-Feb-17	1. Updated 130_DOA [DOA] to 130_Approval matrix [APPVL_MTX] 2. Updated CAD Discipline and CAD_GIS folder to correct sub-folder structures. 3. Removed further illegal characters i.e. dashes and forward slash. 4. Amended '400' + '500' renamable and put in their numbers.
7	02-Mar-17	1. Updated 270_Project_Reviews_APIC [PROJ_REV] to 270_Project Reviews [PROJ_REV] 2. Corrected number sequence for 700_. 740_Training is now 730_, 750_Reserved_for_PMs_options is now 740. 3. Removed references to Q-Dash and VPO
8	27-Jan-20	1. Updated to address Graded Approach and transition from ePM to APIC. 2. G18, replaced Salesforce for CRM System. 3. G52, removed statement 'May be in electronic tool (ePM, ePMP) as meeting minutes. 4. G81, removed 'Healthy Start audit review.
9	21-Oct-20	1. Moved 'Change Log' detail from main page to its own Tab called 'Change Log'. 2. I8 – Replaced 'Cannot Delete' with 'Restrict Deletion……' 3. G12 – Replaced '……CRM System.' with '…… approved system.' 4. G29 – Deleted '….. and Risk Register……' 5. G38 – Reworded to highlight local IT requirements/practices are deferred to when storing email (e.g. .msg and .pst). 6. G45 – Reworded to better explain content to be stored in this location. 7. Row 48 - Added '425_Calculation_Review [CALC]' 8. G57 – Reworded to better explain content to be stored in this location. 9. G62 – Replaced '……. CD Set.' with '……. Issued set.' 10. G81 – added 'hazard checklists' as an another example of content type for this area. 11. Row 85 - Renamed '850_Superseded [SS] ' to '850_Safety_in_Design [SiD] 12. Row 86 - Added '860_Superseded [SS]'

North America

Technical Task Protocol

Q4NA-321-GL1

1.0 Purpose and Scope

1.1 This Tier IV procedure supplements and supports the Tier II and III Project Approach Review procedures.

1.2 The purpose of this procedure is to outline a process for using a Technical Task Protocol (TTP) that helps guide the performance of specific technical work tasks in accordance with established requirements and full knowledge of input sources and guidance documents.

1.3 The Technical Task Protocol (TTP) is one of the legacy discipline-specific processes that has remained in place which may help fulfill the technical review elements of the PAR process. Although mainly practiced in AECOM's North America Transportation business line, the TTP process can be used throughout the organization as deemed appropriate.

2.0 Terms and Definitions

2.1 **Technical Task Protocol (TTP)** - A document that provides instructions on how to set up, plan, and conduct a specific technical work activity.

2.2 **Discipline Lead** – The manager or supervisory level person that is responsible overall for the project's technical work in a specific discipline.

3.0 References

3.1 Tier II Project Approach Review Procedure (Q2-321-PR)

3.2 Tier III Project Approach Review procedure (Q3NA-321-PR1)

3.3 Tier IV Guidelines for the Preparation of Calculations (Q4NA-331-GL1)

4.0 Procedure

4.1 The intent of a Technical Task Protocol (TTP) is to provide those preparing technical documents with the input, references, criteria, direction, and background information necessary to carry out the task in a complete and efficient manner. TTPs are mainly useful for calculations, and may be used as input to specifications, drawings, and technical reports and studies. Exceptions are cases where the tasks are simple or for information only, or where the input information is readily available or developed in another manner for the project (e.g. Design Criteria Document). Depending on the scope and complexity of a task, TTPs may be developed for individual tasks or a series of tasks. In addition, standard TTPs may be developed by offices or other business units to address work that is performed for a given client on an ongoing or repetitive basis. Typically, **discipline leads** determine the value, necessity and scope of TTPs on the projects their discipline is working on, or for their departments in general.

4.2 **Discipline leads** shall assign competent individuals the task of preparing calculations. Guidance for the preparation of calculations is found in the Tier IV document referenced in Section 3.3 above.

4.3 Technical Task Protocol preparation – **Discipline leads**, or **designee**, prepare TTPs prior to the performance of technical tasks. TTPs generally include the information as described in the sample Technical Task Protocol outline included as Attachment 1. Content is also based on the complexity of the task, size of project, project team familiarity with design requirements, new design requirements, etc.

4.4 Technical Task Protocol format – TTPs are to be formatted in a manner that provides a clear understanding of the task and the conveyance of the required information. An example TTP format is provided in Attachment 1.

4.5 Control of Technical Task Protocols – TTPs are to be kept up to date throughout the development of **t**echnical documents and assigned revision numbers as appropriate. TTPs that have been super**r**seded or

cancelled are to be so noted. Revisions to TTPs should be given the same review and approval as the original.

4.6 Review and Approval of Technical Task Protocols – TTPs shall be reviewed and approved by a **competent individual other than the preparer** to ensure the information is identified and presented correctly. The date and signatures of the preparer and reviewer appear on the cover sheet or first page of the TTP, signifying their review and approval for use.

4.7 Approved Technical Task Protocols should be kept with the related calculations.

5.0 Records

5.1 Approved Technical Task Protocol

6.0 Attachments

6.1 Attachment 1 – Sample Technical Task Protocol outline

ATTACHMENT 1

Sample Technical Task Protocol Outline

Technical Task Protocol No.: _____ **Revision No.:** _____

Project: _____ **Job No.:** _____

Design Task Element: _____

_____ _____

Originator / Date Reviewer / Date

Some of the items to be considered in the preparation of a Technical Task Protocol include, but are not necessarily limited to:

Objective

- Briefly describe the goal of the task
- Scope of work statement

Prerequisites (Input)

- Required formats
- Technical results from other disciplines
- Technical output from other technical task elements
- Existing test data or analyses
- Required test data

Design

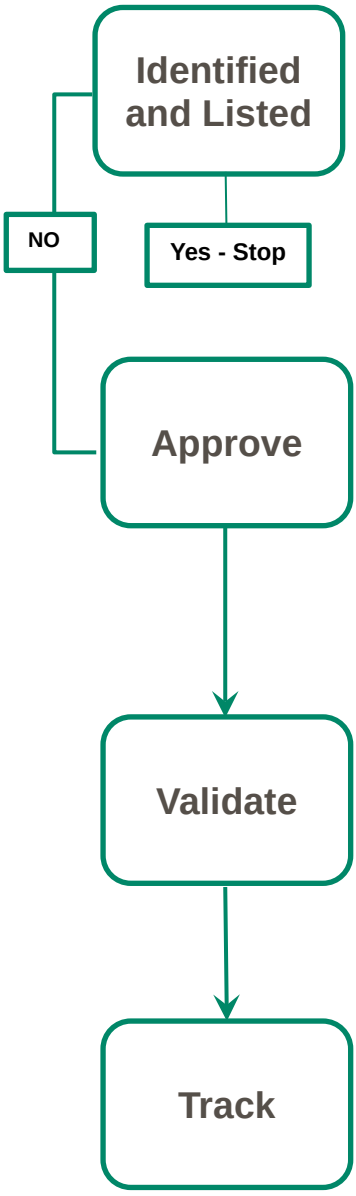
- Technical criteria (Client directed)
- Client specifications
- Design manuals
- Codes and Standards
- Design Loads
- Safety factors
- Standard corporate or local design protocols
- Preferred analysis methods and design approaches
- Assumptions
- Appropriate Validated Software

Interdiscipline Coordination

- Identify disciplines that interface with the design element and provide output

Validation of Software and Data Management Tools

Q2[DCS]-311-PR1



WHO	WHAT/HOW	PDS Phase
Technical Lead and Technical Team	• Identify technical software in Project Plan. • Confirm it is listed on the geography/region/office specific validated software listing. If **yes, Stop,** requirement is met. • If **no**, continue. Assign Validator and Approver to perform validation. Specify the method to be used for validation. • If software is developed by AECOM, implement Section 3.3 verification and validation.	Execution
Software Approver	• Review the information and, if found acceptable, approve the software for use. • Take the necessary steps to have the technical software added to the Geography/Business Line/Location validated software register.	Execution
Validator / Discipline Lead	1. Perform validation using one of the following: a. Run the software using input from a known solution and verify that the program output matches the known solution. All significant design options/methodologies offered by the program shall be verified. b. Perform a manual calculation to verify the results obtained using the software. c. Obtain manufacturer documentation of production of software under a recognized quality standard. 2. Provide results and documentation of the validation process to assigned Approver.	Execution
Geography Quality	• Develop and maintain a register accessible to all staff listing technical software that has been validated for use in above step. • The register shall include, at a minimum, the vendor name, software name/description, version number and AECOM's Discipline Manager/ Approver and contact person for the software.	Execution

Related PPI

- IMS Manual - DCS Q2[DCS]-001-PR1
- Improvement Procedure – DCS Q2[DCS]-003-PR2
- Technical Quality Planning and Review - DCS Q2[DCS]-351-PR1

References

- Project Plan Template – DCS Q2[DCS]-221-FM1
- Project Plan – Short Form – DCS Q2[DCS]-221-FM2
- Project Plan – C3A – DCS Q2[DCS]-221-FM3
- Software Validation Form - DCS Q2[DCS]-311-FM1(Fillable PDF)
- Software Validation Form - DCS Q2[DCS]-311-FM1 (MS Word)
- DCSA Validated Software List
- Geo/Regional Validation Software Registers
- Technical Practice Groups (TPGs)

Terms & Definitions

- AECOM Glossary

Help & Training

- None

Change Log

1. Purpose and Scope

This procedure describes minimum requirements to ensure software, including data management tools, used on AECOM DCS projects has been adequately selected and validated before use. Project Managers shall validate data management tools and software used to collect, store and process data used to develop project related deliverables, to ensure they meet the technical discipline and client requirements.

2. Procedure

When software is used to create inputs to work products or advice to clients, the validity of the software and its outputs, and its ability to satisfy the intended application, must be established. Software must be validated prior to initial use, and reconfirmed as necessary.

During the proposal stage, the Technical Leader should include in the Technical Approach development a list of appropriate technical software that will be used on the project, along with if the software has been/or needs to be validated. This list should be provided to the Project Manager to include as a link in the project plan and resources appropriately budgeted for where validation is needed.

If the software (and current version) is not already included on the geography/region software registers, the technical team member utilizing the software shall perform a validation that would be logged on the appropriate register for use by other technical team members.

The validation must be documented using Software Validation Form – DCS or equivalent and the documentation must be readily available (e.g., in the project central file or central register of validated software). Technical team members are required to confirm validation has occurred or are responsible for software validation for their technical software. Control of the software (including licenses, loading onto computer and addressing software errors and maintenance) is the responsibility of the IT Department.

This document focuses on the software validation, output review and testing and applies to “technical software” which is used for any of the following:

a. Performing calculations;

b. Developing input for use in calculations;

c. Creating designs or drawings using embedded calculations;

d. Generating output provided directly to clients;

e. Generating output included in deliverables to clients; or

f. Developing software for delivery to a client as a contractual obligation.

2.1 Technical Software Includes

a. Advanced or complex programs developed within standard office-type platforms such as MS Excel and MS Access which are not amenable to standard checking/verification.

b. Mathematical, formulaic, and logic-based programming developed within standard office-type platforms such as MS Excel and MS Access that cannot be validated as simple calculations.

c. Industry Standard and non-standard software performing technical calculations to confirm/develop designs (e.g. STAAD, GT STRUDL, etc.).

d. AECOM Data Management Tool (e.g. MS Excel macros, software developed to analyze data for a deliverable, etc.).

2.2 Technical Software Excludes

a. Software that does not conform to the definitions provided in the list above;

b. Used to produce output that is checked and verified manually;

c. Inherent to equipment for measuring and testing, which is periodically verified and calibrated in accordance with the manufacturer's specifications; or

d. Designed to enable the operation and maintenance of a computer system and its associated programs (systems software).

e. Simple MS Excel and MS Access formulas or logic that can be validated as calculations in accordance with the Technical Quality Planning and Review Procedure - DCS.

The project technical lead and/or lead verifier are to confirm the appropriate technical software is being validated and implemented.

Geographies/Business Lines may develop supplemental procedures to include additional details or specifics. These may include the establishment of higher-level management control or coordination of the validation process.

3. Software and Data Management Tool Development Considerations

Prior to selecting or developing software, including data management tools, the PM and developers must agree on a few key elements of design as follows:

- Functionality
- Capability
- Scalability
- Desired Output
- Speed
- Compatibility
- Method of validation
- Stability

"Non-standard" software (e.g. written in programmable third-party software such as C++, Visual Basic, MathCAD, MS Excel models, and extensions or revisions of verified software such as MS Excel macros or advanced formulas or logic based programming) or procured and employed by AECOM (STAAD, Roof View, etc.) shall be adequately documented, including authorship, revision history, description, applicability, testing and references. Such software shall be validated taking into account the applicable range of intended use, and software options and parameters consistent with the intended range of applications.

Where software not developed by AECOM is to be used to conduct AECOM business, that software must be currently licensed for use by AECOM.

- All software to be used on the AECOM network must be licensed and approved by the Information Technology (IT) group before it can be utilized.
- AECOM staff may not use software that they privately own in the conduct of AECOM business.

3.1 Purchased Technical Software Validation

Follow the flow diagram on Page 1 of this document (and itemized below) to add technical software to the validated software listing/register:

a. Identify software to be used in the Project Plan;

b. Determine whether validation is required;

c. If validation is required, determine if validated, if not, assign technical team member to validate;

d. Discipline lead review validation process and confirm accurate results are being output by the software;

e. Transmit the validation documentation to the Software Approver (defined on Geo/Region/Location register);

f. Software Approver request the software to be added to the register; and

g. Perform a verification after use of the software to confirm the software provided reasonable results (could be in the Technical Quality Review process).

3.2 Client Specified Software

Follow the flow diagram on Page 1 of this document (and itemized below) to add technical software to the validated software listing/register:

a. Identify software and confirm the software is fit for purpose and included in the Project Plan;

b. Assign technical team member to prepare the validation form with links to the client/regulatory internet site with the clients/regulatory software verification and validation process or request documentation of verification and validation and attach to the Software Validation Form – DCS;

c. Discipline lead review validation package and confirm accurate results are being output by the software;

d. Transmit the validation documentation to the Software Approver; and

e. Perform a verification after use of the software to confirm the software provided reasonable results (could be in the Technical Quality Review process).

3.3 AECOM Software/Data Management Tool Verification and Validation

Software developed by AECOM starts at the proposal stage and is included in the project schedule and budget, the table below identifies specific assignments for originators, reviewers and lead verifiers for the verification and validation process.

Proposal & Planning

- Project Manager and Technical Lead identify technical quality reviews applicability based on the project's data management and software validation needs and review software and tool development considerations.
- Categorize software as Legacy, Industry Standard, or Non-standard per Section 4.0, Terms and Definitions.
- For each non-standard software, confirm validation has occurred or assign Validator, Verifier and Approver to perform validation, and if appropriate, specify the method to be used for validation.

Check

- Originator should conduct self-check and test prior to release to reviewer.
- Reviewer should select test data and perform validation following the specified validation method and address applicable Technical Quality Review needs.
- Reviewer will conduct validation tests to ensure that results are consitent with technical practice and expected outcome, provide results, comments and documentation.
- Reviewer does the initial testing of end user interface such as forms, filters, commands, reports, etc. to ensure proper functionality and error handling.
- The originator addresses the comments, either making corrections or stating why the comment is not accepted. Disagreements are taken to the lead verifier; if the lead verifier cannot resolve the disagreement, the Department Lead/Manager makes the final decision.

Verify

- The Lead Verifier confirms that all comments have been addressed appropriately and that the software includes all required elements.
- The Lead Verifier conducts a discipline specific technical review of the deliverables or deliverable elements generated using the data and\or software.
- Verify that any comments or errors during testing of final user interface elements such as forms, filters, commands, reports, etc. have been resolved and confirm proper functionality and error handling.
- If the Lead Verifier has additional comments or disagrees with something in the software, the originator addresses the comments or states why the comment should not be incorporated. Disagreements are resolved by the Department Lead/Manager.
- The Lead Verifier completes and submits validation form to Software Validation Approver once all comments have been resolved.
- Provide results and documentation of the validation process to the assigned Approver. Changes that may affect previous output shall be noted and communicated to Approver and Department Lead/Manager.

Approve

- The Department Lead/Manager approves the software and requests the software be added to the validated software register.
- The PM approves deliverables or deliverable elements created with the software.

3.4 Validation of Software Revisions

New versions of previously validated software shall be validated again in accordance with the original process. Consideration shall be given to whether only the latest version of the software is to be maintained, keeping in mind that the use of older versions may still be required by clients or for continuity with earlier output.

3.5 Software Error and Errata Data

Errors identified by software vendors or by project team members during the use of the software must be reported to the Discipline Manager and the contact person identified on the relevant software register. The Discipline Manager shall:

a. Notify the software developer/vendor and AECOM IT.

b. Identify projects that have used or are using the software. Assess the impact of the error on both completed and ongoing projects.

c. Notify the affected project managers.

d. Notify the affected client if necessary.

e. Develop a corrective action plan for all affected work products and deliverables.

f. Revise the validation documentation, including the software register, as necessary.

3.6 Documentation

Validated Software records such as those listed below must be maintained in the local 'approved' Geography/ Business Line/Location validated software register:

- Completed the Software Validation Form - DCS (or equivalent) and supporting records, calculation check, comment sheets and software revision/version history maintained by the geography and business line Software Approver.
- Whenever possible developer should include the corresponding "About" Section and summarize licensing, copyright, and version information.

4. Terms and Definitions

a.	**Data Management Tool**	Any software, programming, template, spreadsheet or platform used to store, evaluate, format or manipulate data in any way from an Excel table to advanced software.
b.	**Discipline Manager/ Approver**	Leader that supervises and is responsible for the work performed in a specific discipline, market sector or practice area. Responsible for reviewing validation records from technical team members under his/her direction and providing to the Business Line Approver.
c.	**Industry Standard Software**	Commercially available technical software that is widely used and accepted in a discipline, market sector or practice area, and that does not require significant adaptation for use by AECOM (i.e. Primavera, ArcGIS, REVIT, etc.)
d.	**Legacy Software**	Technical software validated and regularly used in the current version at an AECOM legacy or newly acquired company for at least three years and for which no problems have been reported, or for which problems have been reported and corrected.
e.	**Non-standard Software**	Technical software that is not widely used and accepted in the industry.
f.	**Software Approver**	The individual, independent of the validator, who reviews the validation output and accepts the software for use by AECOM.
g.	**Software Register**	An up-to-date listing of validated technical software maintained by each Geography/Business Line/Location and posted in a location accessible to all staff.
h.	**TL**	Technical Lead; An individual competent in a technical discipline accountable to the PM for technical excellence on the project and for delivery of the technical tasks or technical packages of work within the scope, budget and schedule.
i.	**Validation**	The process of accepting technical software for use by AECOM. Validation may include verification of conformance with requirements.

j. **Verification** The process, normally performed by the software vendor, demonstrating that the software will perform its intended function prior to distributing to users of the software (AECOM).

k. **Validator** The individual who performs the validation – technical team member.

5. Appendices

a. N/A

6. Change Log

Rev #	Change Date	Description of Change	Location of Change
0	05-11-2011	Initial Release as Q2-311-PR	All
1	04-18-2016	2015 Annual Review and released as Q2[DCS]-311-PR1	Minor edits throughout.
2	05-07-2018	2017 Review, in new IMS Template, major changes including title change from 'Software Validation Procedure – DCS'.	Read as new document.
3	20-Jan-2020	2020 Review; removal of all ePM references.	Page 1; S3.1
4	12-Oct-2021	2021 Review; put into new AECOM branded template; swapped order of "Approve" and "Track" in flow diagram; removed reference to the AECOM Software Catalog; new section for Client Specified Software; general edits.	Page 1, References, Section 2, 2.2, 3.2, 3.6,

AECOM

DCS

Software Validation Form

Q2[DCS]-311-FM1

Instructions:

1. Refer to the Validation of Software and Data Management Tools – DCS Q2[DCS]-311-PR1 for information on this process.
2. Completed and approved forms are to be maintained in the local 'approved' Geography/Business Line/Location validated software registers.

1. Software Information			
Software Name		**Version**	
AECOM Contact Person		**Date**	
Source	☐ Internal* ☐ External	**Business Line**	
Vendor/Developer			
Software Classification	☐ Legacy	☐ Industry Standard	☐ Non-Standard

* Validation of software developed by AECOM may not be performed by the software developer.

2. Software Validation		
Validation Type	☐ Initial	☐ Revision
Purpose & Description		
Validation Method		
Legacy	☐	Documented evidence of previous satisfactory use.
Industry Standard	☐ ☐	Signed Statement / Certification of QC validation by vendor / developer. Sample data run for proper functioning on AECOM computers / system.
Non-Standard	☐ ☐	Software run w/input having a known solution / output matches solution. Manual calculation verification.
Other (specify method)	☐	

Validation Performed by		
Name	**Signature**	**Date**

3. Validation Approved by		
Discipline Approver:		
Name	**Signature**	**Date**
Software Approver:		
Name	**Signature**	**Date**

4. Notes/Comments

5. Documentation				
Attached (check)	☐	Previous internal use documentation.	☐	Known solution input data & output.
	☐	Vendor / Developer Statement or Certification.	☐	Manual calculation verification.
	☐	Other:		

Technical Quality Review - Job Aid

Technical Quality Review Scope

Purpose:

1) Clarify the nature of technical quality review (TQR) by outlining the various technical review types and related scope. This complements existing procedures which provide more detailed guidance for implementation.
2) Provide guidance on TQR roles and responsibilities, realizing the Project Manager has the ultimate accountability to ensure the quality of the project and deliverables in accordance with scope, budget and schedule.
3) Refer to the Technical Quality Review Procedure - DCS Q2[DCS]-351-PR1 for additional information: **Click here**
4) In the spirit of continuous improvement, we welcome comments and suggestions to keep this document relevant and useful. You can find the current version in the: **Project Delivery System**

Comments/Suggestions? Click here

Roles & Responsibilities

R - Responsible (completes the task)
A - Accountable (approves the task)
C - Consulted (has information or capability to help complete the task)
I - Informed (needs to be notified of task result)

Recommended scope when TQR Type is conducted
Determine need based on project scope

Technical Quality Review Type

Technical Quality Review Type	Appropriate Budget, Schedule and Resources	Conformance with Standards & Regulatory Requirements	Review of Client, Sub & Third-Party Information	Compliance with Scope	Basis & Validity of Conclusion / Recommendation	Soundness of Approach / Design	Adequacy of Statements of Limitations	Technical Risk & Mitigation	Verification of Technical Solution	Validation of Assumptions	Software Verification & Validation	Check of Calculations	Check of Drawings & Graphics	Client Input Review	Organization, Clarity & Completeness	Edit for Elements such as Grammar, Punctuation, Formatting & Graphics	Notes	Project Manager	Technical Lead	Originator	Lead Verifier	Reviewer	Interdisciplinary Reviewer	Independent Reviewer	Project Quality Manager
Technical Approach Review (TAR) A review of the Technical Approach **(including the technical solution)** conducted to confirm that a project's creative, technical and client objectives are being addressed during the initial stages of the project to minimize risks resulting from an inadequate technical approach**.**	■	■		■	■	■	■	■	■	■	■		■				Performed at or before the project reaches 15% complete or as described in the Project Plan. Document on TQRR, TAR checklist or meeting notes from TAR meeting, or equivalent.	C	C	C	R/A				I
Calculation Check Performed to validate the accuracy and completeness of discipline specific calculations prior to deliverable hand-off to other task owners, disciplines, sub-contractors or the client.		■	■	■	■	■	■	■	■	■	■	■		■	■	■	Project or client needs may also require an Independent Reviewer on calculations. Document calculation check on the calculation checklist.	C	A	C		R			I
Discipline Review/Check A detailed examination performed within a single discipline to verify the correctness, completeness and technical adequacy of work, conformance with referenced standards, compliance with input requirements, acceptance criteria, relevant laws and regulations, anticipate safety standards (Safety in Design), basis and validity of assumptions, opinions, conclusions, recommendations, appropriate standard of care and potential for errors or omissions.		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	Perform mark-ups and document on a TQRR as applicable to Graded Approach and Geography.	C	A	C	C	R			I
Interdisciplinary Review Conducted to align critical design elements and eliminate possible conflicts and gaps between elements developed and reviewed in different disciplines, office locations, and/or companies, including sub consultants.		■	■	■	■	■	■		■	■			■	■	■	■	Perform mark-ups and document on a TQRR as applicable to Graded Approach and Geography.	C	A	C	C		R		I
Specification Package Review A review that references to standards and codes are correct and the relevant specification sections are included. Usually coordinated with drawings and applicable conditions.		■		■				■					■		■	■	Perform mark-ups and document on a TQRR as applicable to Graded Approach and Geography.	C	A	C	C	R			I
Bidability / Contract Documents Review A comprehensive review of pre-final (90%) or final (100%) contract documents to determine if the documents are ready to bid in an effort to reduce the risk of RFIs, change orders, disputes and claims resulting from the quality of the contract documents.		■	■	■		■	■	■		■			■	■	■	■	A bidability review team, which may be different than the TQR Team members, may need to be engaged.	A	C		C	R			I
Constructability Review Intended to identify issues in designs and contract documents that could adversely impact the construction process, such as standards, compatibility, existing facilities/utilities, interface with existing operations, access and egress, availability of building materials and, long lead procurement and labor resources. This enables rational bidding, reduces uncertainties and minimizes potential changes during construction. An independent review of design documents to ensure work requirements are clear, documents are coordinated, and that they assist the contractor in bidding, construction and project administration to result in reduced adverse impacts to the project. To minimise delays and costs associated with the need to revise design after commencement of construction**.**		■	■	■		■	■	■		■			■	■	■		A constructability review team, which may be different than the TQR Team members, may need to be engaged.	A	C		C	R			I
Independent Peer Review (C0 projects) A critical evaluation of work products, deliverables, material or data to verify or validate assumptions, plans, results, opinions, analysis, recommendations or conclusions at key milestones and prior to delivery to the client or other non-company entity.		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	The Independent Reviewer is completely independent from the team. This review is required on C0 projects or as required by the client, Geo-specific graded approach or other requirements. The review is documented on the TQRR or approved equivalent.	A	C	C				R	I
Sub Consultant, Client, or Third-party Info Review A review of materials for completeness and verification that appropriate quality assurance and control checks have been completed by the sub consultant, client or third party.	■	■	■			■			■	■	■		■				Perform mark-ups and document on a TQRR as applicable to Graded Approach and Geography.	A	R			I			I

Technical Quality Review - Job Aid

Technical Quality Reviews - Overall

In addition to the Review Types on the Technical Quality Review Record - DCS Q2[DCS]-351-FM1 (TQRR), the below reviews take place in the overall process of the deliverable review, verification and approval process.

Type	Who	Responsibility	Record
Self-Check	**The Originator**	Check that the work product (deliverable) is complete and appropriate to the deliverable phase before sending to other reviewers or checkers.	No specific record required.
Reviews	**Refer to the RACI* Page 1**	Refer to the RACI	Signed and dated Technical Quality Review Record (TQRR) or equivalent documentation in the form of mark-ups with stamps/signatures, spreadsheets, etc.
Verification & Validation	**Lead Verifier**	Confirm the deliverable satisfies the technical approach/solution/methodology developed at the start of the project through a high-level review of the overall submittal. Confirm that the required quality checks and reviews have been performed. Achieve correction as needed by resolution with Originator and technical lead.	Signed and dated Technical Quality Review Record (TQRR) or equivalent documentation in the form of mark-ups with stamps/signatures, spreadsheets, etc.
Deliverable Approval and Issue	**Project Manager**	Final review of deliverable and authorization to issue.	Signed and dated Technical Quality Review Record (TQRR) or equivalent documentation in the form of mark-ups with stamps/signatures, spreadsheets, etc.

Technical Quality Review - Job Aid

Rev	Change Date	Description of Change	Location of Change
0	02-February-2017	Initial Release as Q2[DCS]-351-WI2	All
1	20-July-2018	Minor editorial changes to accommodate ePM updates and referencing	A5, S5, A57-Q87
2	27-January-2020	2020 Review – minor edits; removal of references to ePM; introduced Graded Approach. Incorporate equivalent information from the Technical Quality Review Summary - DCS Q2[DCS]-351-WI1 and Technical Quality Review Types - DCS Q2[DCS]-351-WI3 and retired both these 2 Instruction documents.	All
3	09-April-2020	Revised 'TQR Review Types' tab: 1. Removed the word 'holistic' from Point (1) of 'Purpose'. 2. Reworded the 'Specification Package Review' section. 3. Reword the 'Independent Reviewer' wording. Revised 'TQR Reviews' tab: 1. Changed 'Checks' to 'Check' 2. Provided explanation for 'RACI' acronym 3. Corrected capitalization of 'technical' in the title of the TQRR. 4. Added 'if not performed by a Project Quality Manager' at the end of the sentence: *Confirm that the required quality checks and reviews have been performed,.....* 5. Added 'transmittals' and clarified 'submittals' by adding 'shop drawing' - Exception to TQQR Requirements section.	All A3 A26 R38 C4 A9 D5 C6 B13
4	28-June-2021	Updated to new AECOM colors and logo. **TQR Review Types** tab: 1. Added box to against TAR x Verification of Technical Solution. 2. Added '.... or equivalent' to the end of the Notes for TAR. 3. Changed 'R' to 'C' against Technical Lead for TAR. 4. Added 'C' to Lead Verifier against Discipline Review/Check, Interdisciplinary Review, Specification package Review, Bidability / Contract Documents Review. 5. Added a new sentence to the end of the 'Constructability Review' description. 6. Added '.... or other requirements.' to the 2nd last sentence of the 'Notes' for Independent Peer Review. 7. Changed 'C' to 'A' against PM for 'Sub Consultant, Client, or Third-party Info Review'. 8. Changed 'A' to 'R' against Technical Lead for 'Sub Consultant, Client, or Third-party Info Review'. 9. Changed 'R' to nothing against Originator for Sub Consultant, Client, or Third-party Info Review'. **TQR Reviews tab:** 1. Deleted '.... if not performed by a Project Quality Manager.' from the end of 2nd last sentence of the 'Verification and Validation' responsibility wording.	 J9 R9 T9 V18, V22, V26, V30 A34 R38 S42 T42 U42 C6

APPENDIX B – DISCIPLINE & INTER-DISCIPLINE QC FORMS

- *LADOTD Final Calculation Book Index Checklist*
- *AECOM QMS Technical Quality Review Procedure*
- *AECOM QMS Guidelines for the Preparation of Calculations*
- *AECOM QMS Calculation Cover Page Forms*
- *AECOM QMS Calculation Log Form*
- *AECOM QMS Calculation Discipline QC Review Checklist Form*
- *AECOM QMS Drawing Discipline and Inter-Discipline QC Review Checklist Form*
- *AECOM QMS Specification Discipline QC Review Checklist Form*
- *AECOM QMS Study/Report Discipline QC Review Checklist Form*
- *AECOM QMS Document Review Comment Sheet*

APPENDIX B—FINAL CALCULATION BOOK CHECKLIST

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

__ **Cover Sheet**

The following information must be included on the cover sheet:

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

__ **Final Calculation Book Check List**

__ **QC/QA Certifications**

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

__ **Design Criteria**

__ **Final Hydraulic Analysis Report from Hydraulic Engineer**

__ **Final Geotechnical Analysis Report from Geotechnical Engineer**

__ **Superstructure Design Calculations**

__ **Substructure Design Calculations**

__ **Quantity Calculations**

__ **Special Provisions/NS-Items**

__ **Construction Cost Estimate**

__ **As-Designed Rating Report**

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

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

__ **A PDF File of the Calculation Book (Including the As-Designed Rating Report)**

__ **All Electronic Design Files**

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

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

Technical Quality Review Procedure

Q2[DCS]-351-PR1

	Who	What/How	When (before a deliverable is submitted to 3rd party)
ORIGINATOR Checks own work Initiates TQR Addresses comments	Originator	• Checks the work for accuracy and completeness before submitting the work for review or check. • Initiates the TQR. • After a review or check, addresses all comments, either by accepting the revision or discussing the comment with the reviewer. • After the review and/or check is complete, submits the deliverable to the PM for approval.	Execution Gate 3
REVIEWER **Checks/reviews work**	Reviewer	Checks (reviews) the work for accuracy etc, in line with the review scope on the Technical Quality Review Record - DCS.	Execution Gate 3
INTERDISCIPLINARY REVIEW as applicable (multi-discipline projects) Checks interfaces of different disciplines	Inter-disciplinary Reviewer(s)	Confirms compatibility among portions of deliverables that were developed, checked and reviewed by different disciplines, offices and/or companies. Document and review comments with Originators and confirms that comments are addressed.	Execution Gate 3
INDEPENDENT PEER REVIEWER Performs technical check/review of the deliverable or alternative calculations to cnfirm the deliverable satisfies the techncial requirments of the contract	Independent Peer Reviewer (IPR)	When required by the project scope, client or AECOM risk committee the IPR will provided a extra level of coordination review confirming the work product is correct and complete.	Execution Gate 3
LEAD VERIFIER Verifies comments, addresses and work meets contractual requirements Signs TQR	Lead Verifier(s)	• Verifies the solution meets contractual requirements and professional standards of care. Verifies that the reviews have been completed and the comments have been addressed appropriately. • If the project does not have an assigned Project Quality Manager, the Lead Verifier or Project Manager (below) verifies that the TQR process has been followed.	Execution Gate 3
PROJECT QUALITY MANAGER Confirms the TQR process was performed and documented	Project Quality Manager	For projects that have identified a Project Quality Manager (PQM), the PQM verifies that the TQR process has been followed – otherwise the Lead Verifier performs this responsibility.	Execution Gate 3
PROJECT MANAGER Approves Deliverable	Project Manager / delegate	Approves the deliverable.	Execution Gate 3

Related PPI

- IMS Manual - DCS Q2[DCS]-001-PR1
- Improvement Procedure – DCS Q2[DCS]-003-PR2
- Subs Management - DCS Q2[DCS]-141-PR1
- Project Plan Procedure - DCS Q2[DCS]-221-PR1
- Project Document and Records Control Procedure – DCS Q2[DCS]-222-PR1
- Project Risk Management – Q2[DCS]-231-PR1
- Validation of Software and Data Management Tools – DCS Q2[DCS]-311-PR1
- Technical Approach – Planning & Review – DCS Q2[DCS]-321-PR1
- Technical Quality Review Job Aid - DCS Q2[DCS]-351-WI2
- Calculation Preparation Instructions – DCS Q2[DCS]-351-WI5
- Records Management & Retention Procedure – AECOM Global Q1-004-PR1

Records & Checklists

- Section 6

Terms & Definitions

- Glossary + Section 5

Help & Training

- TBD

Change Log

1. Purpose and Scope

This procedure establishes the process, roles, responsibilities and requirements for conducting a Technical Quality Review (TQR) of an AECOM deliverable. It is mandatory for any project deliverable to a 3rd party.

2. Graded Approach

The graded risk approach applies to this procedure. To determine the project Risk Category (C-category), click here for the Risk Assessment Tool. The matrix below defines the graded requirements of this procedure according to the risk category of the project.

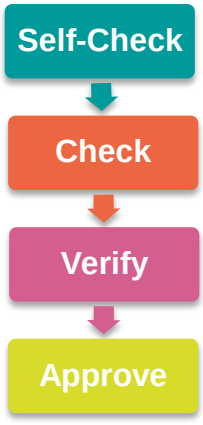
Table 1. Technical Quality Review Graded Approach

C3A	C3	C2	C1	C0
	• Lead Verifier approval that deliverable meets approach and client requirements.	• Lead Verifier approval that deliverable meets approach and client requirements.	• Lead Verifier approval that deliverable meets approach and client requirements.	• Lead Verifier approval that deliverable meets approach and client requirements. • Independent Peer Review as appropriate to project scope.
Calculation Checklist*	Calculation Checklist *	Calculation Checklist *	Calculation Checklist*	Calculation Checklist*

All categories: Retain evidence of internal deliverable review using TQRR or equivalent documented content in UFI. Retain client comments and dispositions (resolutions) in UFI.
* = is optional in ANZ, Asia and EURIMEA.

3. Procedure

The basic process for a TQR is illustrated at the right. Specific requirements are included in the Procedure Map on page 1.



This process is required for all deliverables, although its application should vary for the risk grading of the project as described in Section 2, Graded Approach. Each project and deliverable are different; the review requirements are subject to the type and complexity of the deliverable, the requirements of the client or regulatory agency, and the character of the personnel actively involved with the work. Recognizing these differences, the Project Manager and project team must determine what level of effort will be necessary to routinely meet or exceed the requirements of this procedure.

a. This process applies to:

   i. all types of deliverables, including reports, documents, plans, drawings, 3D models, data models, data tables, specifications, fact sheets, figures, logs, and presentations etc. For projects involving more than one discipline, an ***interdisciplinary review*** is required to be conducted – refer Section 4.

   ii. deliverables provided by our subcontractors, even though we may not conduct a thorough review of their work ourselves. See Section 4 for more detail on reviewing subcontractor work.

b. All drafts, versions, and iterations of deliverables shall be reviewed and edited prior to delivery.

Notes:

1. When deliverables must be signed and sealed, follow applicable statutory registration requirements and document on the Technical Quality Review Record – DCS or equivalent, making sure to have at least one person, other than the Originator or registered party, a part of the review process.
2. Where stand-alone calculations are prepared, the Calculation Checklist - DCS and Technical Quality Review Record – DCS should both be completed, unless the calculation is simple arithmetic included in a report where the calculation will be checked as a part of the report review and documented on a TQRR or equivalent.
3. **Check with the applicable Geography statement of limitations/disclaimers for applicability to deliverable documents.**

4. Type of TQRs

a. The TQR process encompasses all aspects of deliverable preparation as outlined in outlined in the Technical Quality Review Record – DCS.

b. TQRs may be conducted at various phases of a deliverable, depending on the type of deliverable and its complexity. There may also be several *types* of TQRs but regardless of type, the process is the same as shown on Page 1.

c. Information about TQR Types, Review Scope, and Roles and Responsibilities for personnel involved in the Technical Quality Review process is found in Appendix 1 for C3A and C3 projects and the Technical Quality Review Job Aid - DCS for all project risk category projects.

4.1 Internal TQRs

a. Each deliverable is planned and scheduled in the Project Plan and/or a list of deliverables with a TQR set up in a timely manner to notify the project team and reviewers of the upcoming required review.

b. TQR evidence must be retrievable for long term evidence that AECOM used qualified personnel to prepare, review, verify and approve its deliverable for issuance. TQRs are documented by using the Technical Quality Review Record (TQRR) form, which must be maintained in the project file or through stamps and markups directly on the document. Refer to the geography specific documentation requirements below:

Table 2. Technical Quality Review Documentation Requirements by Geography

Geography	C3A	C3	C2	C1	C0
DCSA	TQRR or Equivalent Evidence	TQRR	TQRR	TQRR	TQRR
EMEA	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence
India	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR	TQRR
Asia	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence

Geography	C3A	C3	C2	C1	C0
ANZ	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence	TQRR or Equivalent Evidence

Exception: A TQRR is not required if a deliverable is general correspondence e.g., emails, letters, monthly reports (without technical content). RFIs and Shop Drawing Submittals should go through the technical review process but a TQRR record is not required.

c. When a client asks for a preliminary copy of the deliverable, prior to the internal TQR, a disclaimer – "Draft - has not gone through internal review" must be applied.

d. Evidence of the review, such as written comments made during a TQR (all internal types), must be maintained in the project file, as follows:

   i. Maintain markups, check sets, comment sheets, etc., in the project file until:

      1. At minimum, after the next submittal is accepted.

      2. Unless otherwise directed by the client or PM. Markups/check sets may be disposed after the submittal unless a TQRR was not used to document the review process.

      3. Project closeout. Discard all markups unless a TQRR was not used to document the review process, upon project closeout.

   i. For additional information on maintaining project records, see the Project Document and Records Control Procedure - DCS.

4.2 External or 3rd Party Review Comments

a. All comments received from a client or regulatory agency must be reviewed and included as agreed with the client or regulatory agency by the authorised project team member.

b. Documentation of the reviews and agreement shall be maintained in the project file.

c. The external drafts containing the client or regulatory agency comments must be retained in the project file in alignment with the Records Management & Retention Procedure – AECOM Global, the client contract or regulatory requirements.

d. Changes to the work product or deliverable resulting from these reviews are subject to the same verification, review and documentation requirements as the original work product (that is, a TQR), except when the changes are editorial or minor in content and do not change the risk content of the document. For these changes, a review process shall be performed but the TQRR form is not required.

4.3 Project Input from Others (Subs, etc.)

The PM or Technical Lead is responsible to take steps to confirm the Sub's deliverable or other project input (client or others) is suitable to include in the project deliverable. The confirmation can be performed by:

a. Requesting evidence input was checked and reviewed by the provider; or

b. Confirm the inputs meet the requirements of the project by including in the internal review process.

5. Terms and Definitions

The following definitions supplement those found in the AECOM Glossary.

a.	**Deliverable**	Work product that is intended for delivery to a 3rd party to meet final, interim, or milestone submittal obligations as defined in the contract or regulatory requirements. Deliverables subject to the TQR process are understood to mean those work products that fulfill the contract obligations (should be listed in the Project Plan). Deliverables can include reports, plans, drawings, data tables, calculations, models, conclusions and recommendations, fact sheets, white papers, letter reports, responses to comments, or any other project related document. Deliverables are not general correspondence (including emails, letters, monthly status reports (without technical content), etc.)
b.	**Deliverable Component**	A specific piece or part of a deliverable, such as calculations, drawings, specifications, studies and reports. One or more components may be packaged to comprise the overall deliverable. Calculations, even when not submitted to the client, are considered a deliverable component and shall follow the TQR process to the same rigor as the deliverable components. Calculations developed from MSExcel, MathCAD and similar tools shall have internal logic statements, embedded equations and macros checked. The Lead Verifier is responsible for confirming the tool is acceptable for the proposed application and meets these requirements.
c.	**Lead Verifier**	Reviews the technical approach and each deliverable for overall compliance with SOW, approach, requirements and regulations. Not involved in developing the work. Must be on the AECOM Approved Lead Verifiers list (Lead Verifier Information).
d.	**Originator**	The individual or team of people who create a deliverable or work product. In the case of a team, the Originator includes the responsible person directing the work and having final decision authority over the work product. For example, a CAD designer may prepare a design under the supervision and direction of a lead engineer. Both the CAD designer and the lead engineer would be considered Originators of the work.
e.	**Technical Lead**	An individual competent in a technical discipline accountable to the PM for technical excellence on the project and for delivery of the technical tasks or technical packages of work within the scope, budget and schedule.
f.	**Work Product**	Reports, drawings, specifications, data sheets, virtual deliverables, calculations or other output that may serve as input to subsequent project stages or be delivered to the client, regulatory agency or other stakeholder. Work product goes through stages of development internally and becomes a deliverable when handed over to the client.

6. Records

a. Technical Quality Review Record – DCS Q2[DCS]-351-FM1 (Word / Fillable PDF)

b. Calculation Checklist - DCS Q2[DCS]-351-FM3 (Word / Fillable PDF)

7. Appendices

a. Appendix 1 – Matrix of Acceptability – C3A/C3 Project Roles and Responsibilities.

8. Change Log

Rev #	Change Date	Description of Change	Location of Change
1	01-Oct-2012	Initial Release as Annual Review.	Sections 1, 2, and 4
2	01-Oct-2014	2014 Review – Updated with SHE comments and DEKRA Americas Observations in reference to monitoring and measurement.	Sections 3 and 4
3	18-Apr-2016	Released as Technical Quality Planning and Review Procedure Q2[DCS]-351-PR1.	All
4	----	-----	----
5	22-Jun-2016	Updated to better define actions for non-complex/low risk projects and team members performing multiple roles.	
6	21-Dec-2016	Minor updates to adjust role responsibilities and updates in ePM.	Sections 4, 5 and 6
7	20-Jul-2018	2017 Review; put into new IMS Procedure template and restructured to 2 column format; update references and removal of appendices prepared as independent documents.	All
8	01-Aug-2018	Added instruction around signing/sealing; amended the 'Originator' definition; and updated the responsibility matrix + redefined the 'key quality principles'.	Sections 2, 5 and Appendix 1
9	25-Jan-2019	Qualified that the TQRR form is not required to be used for review of minor-editorial changes to the work product.	Section 4.2
10	08-Aug-2019	Remove link to IMS Policy with its retirement; Updated retired linked location for Lead Verifiers to new location on Ecosystem; Amend 'Interdisciplinary Review' and Project Quality Manager actions in Flow Diagram on Page 1; Bold and underline Section 2, Point 4; Amend Section 4.2 Para 1 around client comments; Amended PQM line in Appendix 1 around who is responsible if a separate PQM is assigned.	Related PPI Section 2 Point 4 Section 4.2 Para 1 Section 5 (c) Appendix 1 – PQM
11	29-Jan-2020	2020 Review – minor edits; removal of references to ePM; introduced Graded Approach.	All
12	15-Jul-2020	Minor edits; added Project Manager as alternative Lead Verifier if project does not have an assigned Project Quality Manager; exemption clarifications on the use of the Technical Quality Review Record – DCS and amendment to 'Deliverable' definition.	Page 1, Sections 2, 3, 4.1, 5 and App 1 - PQM
13	14-Dec-2021	2021 Review; put into new Template; revised Page 1's "What/ How"; general edits; added optional use of Calculation Review Checklist for regions until review of Graded Approach; updated T&Ds; updated Appendix 1 to clarify roles and exceptions to overlapping.	ALL

Appendix 1 Matrix of Acceptability – C3A/C3 Project Roles and Responsibilities

The expectation inherent in the TQR process is the PM will coordinate with the Technical Leads to think through the project requirements and risks to verify:

- Technical Quality Review arrangements are appropriate and fit for purpose; and
- The completed deliverable is thorough, correct, accurate, professionally appropriate and meets contractual obligations

In some instances, it may be necessary for one person to fulfil multiple roles on a project. Duplication of roles should be the *exception* (only C3A and C3 projects), not the rule. This matrix illustrates which roles may or may not overlap.

Note: For C0, C1 and C2 no roles should overlap.

Only in exceptional circumstances, the Project Manager and Lead Verifier may agree to overlapping roles and shall be explained in the Project Plan.

	Project Manager	Lead Verifier	Technical Lead	Originator	Reviewer/Checker	PQM
Project Manager		△	△	△	✓	△
Lead Verifier	△		✖	✖	✓	✓
Technical Lead	△	✖		✓	△	△
Originator	△	✖	✓		✖	✖
Reviewer/ Checker	✓	✓	△	✖		✖
PQM	△	✓	△	✖	✖	
Legend	✓ = acceptable	△ = Proceed with caution	✖ = not allowed			

The **key quality principle** behind this distribution of roles is:

1. The Originator ***cannot be the*** Reviewer (checker) of their own work but is expected to self-check their work before submitting it for TQR.
2. Where the PM and Technical Lead are the same person, **they cannot be the Lead Verifier.**
3. Where the PM and Technical Lead are not the same person, the PM could act as the Lead Verifier **only if they are an approved Lead Verifier.**

Note:

PM	May be the Technical Lead and/or Originator; however, use caution to avoid compromising technical quality delivery due to schedule or budget constraints.
Technical Lead	Focuses solely on project technical quality, its planning and resources.
Originator	Performs the work and self-checks; could also be the PM and Technical Lead but cannot serve in a review/check or verify role. See the **Key Quality Principle** above.
Reviewer/Checker	Reviews (checks) work prepared by others. See the **Key Quality Principle** above. May also verify the work.
Lead Verifier	Reviews the technical approach and each deliverable (C3, C2, C1 and C0 risk category projects) for overall compliance with approach, requirements and regulations. Lead Verifier – not involved in developing the work – brings an independent viewpoint to the review process, an industry best practice. Also see PQM role below.
PQM	Confirms completeness of the TQR process per procedure. If separate PQM has not been assigned, LV or PM takes on this responsibility and their signature signifies that they are performing these responsibilities. On C3A projects, the PM must take on the responsibility and their signature on the mark-up, email, TQRR or other equivalent document signifies they are performing these responsibilities.

Calculations Preparation Instructions

Q2[DCS]-351-WI5

Who	How	Stage
PM and Technical Lead	Determine appropriate technical team, approach and technical solution.	Planning/Execution
Originator	Based on technical approach and project requirements, prepare/perform calculations in a legible manner. Include a cover page – refer to the Calculation Cover Page Template – DCS. Self-check calculations using the Calculation Review Checklist - DCS	Execution
Checker/Reviewer	Perform checks on the calculations including verifying the results/recommendations from the evaluation/analysis/design has addressed the problem to be solved for the client. Prepare tracking log to identify comments and actions.	Execution
Originator	Review comments with Reviewers and incorporate and/or disposition comments.	Execution
Checker/Reviewer	Complete calculation checklist and save in project file with calculation or design package that relies on the calculations. When identified by TL, pass calculation to Independent Peer Reviewer for review, comment disposition and checklist signing.	Execution

Related PPI

- Project Plan Procedure – DCS Q2[DCS]-221-PR1
- Project Document and Records Control Procedure – DCS Q2[DCS]-222-PR1
- Technical Quality Review Procedure – DCS Q2[DCS]-351-PR1
- Validation of Software and Data Management Procedure – DCS Q2[DCS]-311-PR1
- Project Closure Procedure - DCS Q2[DCS]-401-PR1
- Unified File Index – DCS Q2[DCS]-222-WI1
- Records Management & Retention Procedure - AECOM Global Q1-004-PR1

References

N/A

Terms & Definitions

- AECOM Glossary

Help & Training

- Quality Insights - Calculation Preparation & Review

Change Log

1. Purpose and Scope

The purpose of this document is to assist technical staff in the preparation of calculations and outlines the mandatory step of checking all calculations as part of the overall preparation and review of a project's deliverables – refer to the Technical Quality Review Procedure – DCS. Checking of calculations occurs throughout the Execution Phase and is to be completed prior to deliverables being approved for use/issue.

The key participants involved are as follows and their role in the process, is outlined in Appendix 1.

2. Graded Approach

The graded risk approach applies to this document. To determine the project Risk Category (C-category), click here for the Risk Assessment Tool. Use the below matrix for the required rigor of this procedure based on the Risk Category of project.

C3A	C3	C2	C1	C0
Calculation Review Checklist	Calculation Review Checklist	Calculation Review Checklist	Calculation Review Checklist	Calculation Review Checklist

3. Instructions

a . For specific projects or programs, the Project Manager, Project Approver and/or Profit & Loss Manager or Business Line technical management group shall indicate in the Project Plan if exceptions to this instruction should occur. The same level of quality is required for the preparation of calculations regardless of the level of complexity of the project.

b. Checking of calculations is required on all projects, but the rigor and documentation of the check depends on the complexity of the calculation. A calculation review checklist is required for all calculations unless:

   i. Simple math is included in a technical report and checked as a part of the report review process (documented on the TQRR); or

   ii. if there is an equivalent evidence of checks (stamps/initials on each page); or

   iii. there is a client equivalent calculation checklist required.

3.1 Calculation Preparation

a. Calculations are to be neat, legible, and suitable for reproduction, including a header with space for identifying the calculation title, page numbers, project name and number, and the originator's and reviewer's names, initials, and dates.

b. Calculations must be organized and logically presented, and are to include sufficient notes, explanations, and sketches to make the calculation easily followed. The intent is to make calculations understandable by an individual competent in the subject matter without going back to the Originator.

d. The following information should be provided in the calculation, or on a cover or summary page:

- Objective — A statement of the problem or question to be solved (if not obvious from the title).
- Method — Identify the methods to be used, including software.
- Assumptions — Clearly state any assumptions applied.
- References and Inputs — Identify the inputs to the calculation and the references for inputs, equations, methods, etc. Design inputs used as the basis for calculations shall be verified by the Originator as obtained from a reliable source. Design equations, tables, field data etc., shall be referenced to the specific section of the applicable design code or manual. Any information not readily available to a reviewer should be attached as an appendix to the calculation.
- Conclusions — Clearly state the conclusions of the calculations including any limitations, conditions and/or exceptions

e. Confirmations – Critical assumptions, as defined in the AECOM Glossary, need to be tracked and confirmed by the Originator as soon as valid and current data becomes available. The impact of any variances between assumptions and confirmed information must be evaluated, and any necessary revisions to calculations made.

f. In assembling larger sets of calculations, or where providing summary information will be useful, the use of a calculation cover page may be helpful – refer to the Calculation Cover Page Template - DCS.

g. Prior to the results of a calculation being utilized for subsequent work, relevant calculations shall be reviewed and verified in accordance with the Technical Quality Review Procedure - DCS and documented on the Calculation Review Checklist – DCS. As stated in Section 3b, above, C0 projects with technical calculations require an Independent Peer Review, if assigned by the Technical Lead, in addition to the technical review/check.

3.2 Computer Calculations

a. Computer calculations shall include or reference documentation clearly explaining the program's function, nomenclature, and sign conventions utilized. All technical software must be validated in accordance with the Validation of Software and Data Management Tools Procedure - DCS.

b. Calculations utilizing computer programs to perform analyses or design shall include the following:

- Name of the program including version or revision level.
- Identification and/or location of associated electronic files.

c. Spreadsheet calculations shall be documented and organized so formulae used in the spreadsheet can be checked for accuracy of incorporation into the spreadsheet, using a calculator or other method. After validation of the spreadsheet calculations, the spreadsheet shall be protected to prevent inadvertent modification of the embedded formulae.

3.3 Revisions to Calculations

Revisions (or cancellations) may be required after an initial set of calculations has been reviewed. These revisions may be a result of client comments, scope changes, or errors found during checking. Revisions to the calculations do not necessarily warrant a second review of the entire set of calculations. Only the revised portion of the calculations may need to be reviewed. Required revisions shall, therefore, be completed as follows to appropriately document the revisions made:

a. Revisions shall be reviewed and approved in the same manner as the original. The Originator and Reviewer of the calculations shall be responsible for the revision. The revision to the calculation shall be clearly identified and dated or shall be replaced by a new calculation.

b. Revisions shall be prepared in a manner that provides a clear record of the content of the calculation, both prior to and after the revision. The reason for the revision should be identified.

c. Revisions to calculations that impact other disciplines shall be immediately reported to the Project Manager and the affected disciplines.

3.4 Control of Calculations

a. All calculations shall be organized and adequately indexed to facilitate retrieval of results and verification of completeness. A calculation index may be useful as a tool to help plan and organize the work, or may be developed upon completion of the calculations for record and archival purposes – refer to the Calculation Index Template - DCS.

b. The calculation review process shall be documented using the Calculation Review Checklist – DCS unless one of the three exceptions noted in Section 3b exist.

c. Upon completion of the calculation review process, original calculations, including calculation cover pages, checklists, index pages and other associated documents shall be filed in the project's Unified File Index (UFI) with revision numbers and/or version dates for control in accordance with Project Document and Records Control Procedure - DCS.

4. Records

a. Technical Quality Review Record – DCS Q2[DCS]-351-FM1

b. Calculations Review Checklist – DCS Q2[DCS]-351-FM3 (Fillable PDF)

c. Calculation Review Checklist – DCS Q2[DCS]-351-FM3 (Word)

d. Calculation Index Template – DCS Q2[DCS]-351-FM4

e. Calculation Cover Page Template – DCS Q2[DCS]-351-FM5

5. Appendices

a. Appendix 1 – Calculation Preparation RACI

6. Change Log

Rev #	Change Date	Description of Change	Location of Change
0	05-31-2011	Previously Issued as NA Guidelines for the Preparation of Calculations (Q4NA-331-GL1)	Retired
0	05-16-2018	Elevated to a DCS Level 2 instruction and released as Q2[DCS]-351-WI1	All
1	23-Mar-2020	2020 Review; introduced the Graded Risk Approach; minor edits.	All

Appendix 1 Calculation Preparation RACI

R Responsible (completes the task) A Accountable (approves the task) C Consulted (has information or capability to help complete the task) I Informed (needs to be notified of task result)	Project Manager	Technical Lead	Originator	Reviewer	Independent Peer Reviewer*	Reference/Notes: Procedures (P) Template (T) Forms (F)	
Prepare Calculation (Work Product/Project Work)							
1. Assign originator(s).	A	C					
2. Confirm design basis in technical approach.		A	R	C			
3. Develop the calculation cover page, optional.		A	R	C		Calculation Cover Page Template Q2[DCS]-351-FM5.	T
4. Perform the calculation.		I	R	C			
5. Assure completeness and accuracy relative to design basis and technical approach.		I	R	C			
6. Complete conclusion portion of calculation cover page, optional.		I	R	C		Calculation Cover Page Template Q2[DCS]-351-FM5.	T
7. Perform checks on the calculations including verifying the results/recommendations from the evaluation/analysis/design has addressed the problem to be solved for the client.	I	I	C	R	R*	*C0 technical calculations assigned by Technical Lead.	
8. Reconcile and incorporate Reviewers comments into Calculation.	I	A	R	C	C		
9. Sign Calculation Review Checklist.	I	C	R	A	R*	*C0 technical calculations assigned by Technical Lead. Calculation Review Checklist – DCS Q2[DCS]-351-FM3	F

* Independent Peer Reviewer is required for C0 project risk category projects when assigned by Technical Lead.

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Calculation

Calculation Number:	Calculation Title:	Revision:	Page:
#####-#CAL-###		A	1 of 2

1. Project Number:	2. Project Title:	3. Date:

4. Calculation Type:	5. Design Verification Required?	6. Superseded by Calculation No.:
☐ Scoping ☐ Preliminary ☐ Final ☐ Voided	☐ Yes ☐ No	N/A **7. Supersedes Calculation No.:** N/A

Original and Revised Calculation / Analysis Approval (Sign and Date)

The signatures below shall denote that the checker has reviewed the text and attachment portion of the calculation.

8.	Revision A	Revision	Revision
9. Originated By:	Date	Date	Date
10. Checked By:	Date	Date	Date
11. Approved By:	Date	Date	Date
12. Other:	Date	Date	Date

Record of Revision

Revision No.	Reason for Revision
A	

Attachments

Attachment No.	Title	Total Pages
A		
B		
C		
D		
	Total Calculation Page Count:	**2**

Attachment A

Attachment Title

Attachment B

Attachment Title

Attachment C

Attachment Title

Attachment D

Attachment Title

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Calculation Log

1. Project Number:	2. Project Title
3. Project Manager:	4. Discipline:

5. Calculation Number	6. Revision Number	7. Calculation Title	8. Originated By	9. Checked By	10. Design Verification Required? (Y/N)	11. Date of Release

DCS

Calculation Review Checklist

Q2[DCS]-351-FM3

Instructions:
1. **Review of calculations can be guided by the questions listed below but not limited to. Add additional requirements where necessary.**
2. **Independent Peer Review, where required, concurrences as recorded on the Technical Quality Review Record Q2[DCS]-351-FM1.**
3. **File completed form on the front of the calculation.**

Details			
Project Name		**Date**	
Project No.		**Discipline**	
Client		**Subject**	
Calculation No.		**Rev No.**	
Software Name (if used)		**Software Version** (if used)	
Originator			
Electronic File Name (if applicable)			
File Location of Versions Checked			

Review	**Yes**	**No**	**N/A**
1. Is the calculation in accordance with a standard approach to preparing the design?	☐	☐	☐
2. Have input data and information been verified and accepted?	☐	☐	☐
3. Have assumptions requiring follow-up been reviewed and confirmed?	☐	☐	☐
4. Does the calculation need to be updated when additional data becomes available and/or when assumptions have been confirmed?	☐	☐	☐
5. Have calculations prepared using technical software or excel spreadsheets (with macros or equations) been confirmed through a secondary method (i.e. manual, alternate software)?	☐	☐	☐
6. Are results and conclusions consistent and reasonable considering the inputs and approach?	☐	☐	☐
7. Have the originator and the checker/reviewer signed and dated the calculation?	☐	☐	☐
8. Have all previous internal review comments been addressed and closed out with the originator?	☐	☐	☐
9. Have all previous client review comments been addressed and closed out?	☐	☐	☐
10. Are there any other considerations which require listing as additional scope to this review? – List if 'Yes'	☐	☐	☐
11. Is software used validated in accordance with AECOM procedure?	☐	☐	☐
12. Has an independent review and check of calculation been completed (if required)?	☐	☐	☐
13. Calculation/model version is archived in the relevant project folder structure?	☐	☐	☐
For any 'No' responses, please explain:			

Approvals		
Reviewer Name	**Signature**	**Date**
☐ **Independent Calculations** A separate, independent set of calculations has been prepared, validating the original calculations.		
Independent Calculation Preparer	**Signature**	**Date**

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Drawing Review Checklist

Q3[DCS]AM-351-FM3

Instructions:
1. **This form is optional to assist the review of drawings, which can be guided by the questions listed below but is not limited to them.**
2. **It should be attached to the Technical Quality Review Record – DCS Q2[DCS]-351-FM1 to support this process.**
3. **Attach/add additional information when necessary.**
4. **File completed form with deliverable.**

Details

Project Name				**Date**	Click or tap to enter a date.
Project No.				**Discipline**	
Client				**Rev No.**	
Drawing Nos.					
Review Level	☐ Final Submission	☐ Pre-Final Submission	☐ Other:		% Submission
Originator			**Reviewer**		
Lead Verifier			Project Manager		
Electronic File Name (if applicable)					
File Location of Versions Checked					

Discipline Review	**Yes**	**No**	**N/A**
1. Is the set of drawings consistent with the design intent and the calculation output?	☐	☐	☐
2. Do the drawings meet the percent (%) completion for this submission level?	☐	☐	☐
3. Is there consistent presentation within the discipline?	☐	☐	☐
4. Have drawings been initialled/signed?	☐	☐	☐
5. Are the materials properly coordinated with the specifications at this submission level?	☐	☐	☐
6. Are the items constructible as shown?	☐	☐	☐
7. Have the appropriate CADD/BIM standards been followed?	☐	☐	☐
8. Have duplications and redundancy of information, data and dimensions been eliminated?	☐	☐	☐
9. Are drawing titles and numbers consistent and do they agree with the cover sheet index of drawings?	☐	☐	☐
10. Have sheet cross references been verified?	☐	☐	☐
11. Have all previous internal review comments been addressed and closed out?	☐	☐	☐
12. Have all previous client review comments been addressed and closed out?	☐	☐	☐

For any 'No' responses, please explain:

Approvals

		Click or tap to enter a date.
Reviewer	**Signature**	**Date**

Inter- discipline Review

Compatibility, interfaces, and potential interferences/conflicts between the designated discipline and all other disciplines have been reviewed using a complete set of drawings by the following reviewers.

Discipline (please specify)		Signature	Date	OK	Comments Made	Comments Resolved
☐			Click or tap to enter a date.	☐	☐	☐
☐			Click or tap to enter a date.	☐	☐	☐
☐			Click or tap to enter a date.	☐	☐	☐
☐			Click or tap to enter a date.	☐	☐	☐
☐			Click or tap to enter a date.	☐	☐	☐
☐			Click or tap to enter a date.	☐	☐	☐
☐			Click or tap to enter a date.	☐	☐	☐
☐			Click or tap to enter a date.	☐	☐	☐
☐			Click or tap to enter a date.	☐	☐	☐

For any ‘No’ responses, please explain:

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Specification Review Checklist

Q3[DCS]AM-351-FM4

Instructions:
1. **This form is optional to assist the review of specifications, which can be guided by the questions listed below but is not limited to them.**
2. **It should be attached to the Technical Quality Review Record – DCS Q2[DCS]-351-FM1 to support this process.**
3. **Attach/add additional information when necessary.**
4. **File completed form with deliverable.**

Details

Project Name				**Date**	Click or tap to enter a date.
Project No.				**Discipline**	
Client				**Rev No.**	
Specification Sections					
Review Level	☐ Final Submission	☐ Pre-Final Submission	☐ Other:		% Submission
Originator			**Specification Coordinator**		
Discipline Reviewer			**Lead Verifier**		
Electronic File Name (if applicable)					
File Location of Versions Checked					

Discipline Review	**Yes**	**No**	**N/A**
1. Has the correct specification format been used?	☐	☐	☐
2. Is the specification section coordinated with applicable general and special provisions?	☐	☐	☐
3. Have duplications or variances between drawings and specifications been eliminated?	☐	☐	☐
4. Are nomenclature and item numbering used in specifications exactly as used on drawings and other contract documents?	☐	☐	☐
5. Are requirements for shop drawings specified, both as to content and timely submission?	☐	☐	☐
6. Have cited products and equipment been checked for updates and availability?	☐	☐	☐
7. Have all previous internal review comments been addressed and closed out?	☐	☐	☐
8. Have all of the client's review comments to previous drafts been closed out?	☐	☐	☐
Additional questions for non-standard specifications (only those which have not been created and maintained as a company or client standard):			
9. Are material / equipment identification requirements properly identified?	☐	☐	☐
10. Are appropriate codes, standards, processes etc referenced and dated?	☐	☐	☐
11. Are measurement units and basis of payment properly specified?	☐	☐	☐
12. Are shipping, cleaning, storage and handling requirements properly specified?	☐	☐	☐
13. Are provisions made for the qualification and approval of special construction processes?	☐	☐	☐
14. Are the acceptance criteria tests (tolerances, etc) specified and are they adequate, realistic and in line with industry practice?	☐	☐	☐
15. Is test and inspection documentation properly specified?	☐	☐	☐
16. Have client's sole-source requirements been followed?	☐	☐	☐
17. Are manufacturers' installation requirements referenced?	☐	☐	☐
For any 'No' responses, please explain:			

Approvals

		Click or tap to enter a date.
Discipline Reviewer	**Signature**	**Date**

Specifications Coordinator or Project Manager Review (to be completed on Lead Discipline Checklist ONLY)	**Yes**	**No**	**N/A**
1. Are the specification format, type, nomenclature, item numbering, and level of detail consistent for all specification sections?	☐	☐	☐
2. Have required discipline reviews been completed and documented for all specification sections?	☐	☐	☐
3. Have all specification sections been reviewed for inter-discipline conflicts?	☐	☐	☐
4. Have methods and measurements of payment been checked for consistency and conflicts?	☐	☐	☐

For any 'No' responses, please explain:

Approvals

		Click or tap to enter a date.
Specifications or Project Manager Coordinator	**Signature**	**Date**

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Study/Report Review Checklist

Q3[DCS]AM-351-FM5

Instructions:
1. **This form is optional to assist the review of study/reports, which can be guided by the questions listed below but is not limited to them.**
2. **It should be attached to the Technical Quality Review Record – DCS Q2[DCS]-351-FM1 to support this process.**
3. **Attach/add additional information when necessary.**
4. **File completed form with deliverable.**

Details

Project Name		**Date**	Click or tap to enter a date.
Project No.		**Discipline**	
Client		**Rev No.**	
Study/Report Title/Chapter			
Review Level	☐ Final Submission ☐ Pre-Final Submission ☐ Other:		% Submission
Originator		**Project Manager**	
Discipline Reviewer		**Lead Verifier**	
Electronic File Name (if applicable)			
File Location of Versions Checked			

Discipline Review	**Yes**	**No**	**N/A**
1. Has the discipline portion of the study/report meet or support the stated objectives of the project?	☐	☐	☐
2. Are assumptions, criteria, or basis for evaluation of alternatives clearly described?	☐	☐	☐
3. Is supporting material identified appropriate and accessible?	☐	☐	☐
4. Have backup calculations been checked, reviewed and documented?	☐	☐	☐
5. Have embedded drawings, sketches, figures, and other graphics been checked and reviewed?	☐	☐	☐
6. Are results logical and reasonable and are they stated accurately?	☐	☐	☐
7. Have embedded tables been checked and reviewed?	☐	☐	☐
For any 'No' responses, please explain:			

Approvals

		Click or tap to enter a date.
Discipline Reviewer	**Signature**	**Date**

Project Manager (to be completed on Lead Discipline Checklist ONLY)	**Yes**	**No**	**N/A**
1. Is the study or report format consistent with the client's requirements?	☐	☐	☐
2. Are all conclusions and recommendations fully supported and explained in the text?	☐	☐	☐
3. Has the report been completed in accordance with the scope of work?	☐	☐	☐
4. Is the index or table of contents complete and accurate?	☐	☐	☐
5. Is tense consistent and has the text been spell/grammar checked?	☐	☐	☐

Project Manager (to be completed on Lead Discipline Checklist ONLY)	Yes	No	N/A
6. Has the report been properly titled and dated?	☐	☐	☐
7. Have all contractually specified alternatives been addressed?	☐	☐	☐
8. Have all previous internal review comments been addressed and closed out?	☐	☐	☐
9. Have all previous client review comments been addressed and closed out?	☐	☐	☐
For any 'No' responses, please explain:			

Approvals

		Click or tap to enter a date.
Project Manager	**Signature**	**Date**

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Document Review Comment Sheet

Q3[DCS]AM-351-FM1

Instruction:

1. Use Action Code “D” only with concurrence of Reviewer.
2. Responder: Indicate action in right hand column. Discuss exceptions with Reviewer.
3. File completed Document Review Comment Sheet with deliverables.

Document Review Comments

Project Name		**Date**	Click or tap to enter a date.
Project No.		**Project Manager**	
Originator		**Reviewer**	
Responder		**Discipline**	
Status	☐ Criteria ☐ 100% ☐ 90% ☐ 60% ☐ 30% ☐		
Review Purpose	☐ Independent Peer Review	☐ Discipline	☐ Project Approach Review
	☐ Inter-discipline	☐ Other	

Disposition & Reviewer Action Codes (response/agreement required)	**A:** Agree, will comply	**B:** Best Practice – Share with other projects.	**C:** Critical – Must address.	**D:** Delete comment	**E:** Exception taken	**F:** Future incorporation next project.	**S:** Suggested – Recommended/Not Critical

Comment No.	Drawing, Spec, or Page No.	Comment	Reviewer Action Code	Disposition Action/ Response

APPENDIX C – INDEPENDENT PEER REVIEW BRIDGE QC FORMS

- *LADOTD Peer Review Resolution Agreement Form*
- *AECOM QMS Independent Peer Review Bridge QC Form – Technical Quality Review Record*

APPENDIX E—PEER REVIEW RESOLUTION AGREEMENT

Project No.:

Project Name:

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

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

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DCS

Technical Quality Review Record

Q2[DCS]-351-FM1

Instructions

For further information on the Technical Review process, refer to the Technical Quality Review Procedure – DCS Q2[DCS]-351-PR1 and the Technical Quality Review Job Aid – DCS Q2[DCS]-351-WI2.

Project Details		**TQRR No. (Optional)**	
Project No.		**Delivery Date**	
Project Name		**PM Name**	
C- Category	Select....	**Comments Due By**	
Client/Client POC		**Technical Lead**	
Title of Work Product		**TQR Team Assigned**	

Type	☐ Calculation Check (complete Calculation Review Checklist - DCS - required). ☐ Independent Peer Review (IPR). ☐ Biddability / Contract Documents Review. ☐ Subconsultant, Client, or Third-Party Information Review.	☐ Constructability Review. ☐ Interdisciplinary Review. ☐ Discipline Review. ☐ Technical Approach and solution review. ☐ Specification Package Review. ☐ Contract Document Review.	☐ Other: (e.g. Construction Services documentation) Specify
Review Scope	☐ Appropriate budget, schedule and resources. ☐ Soundness of approach/design. ☐ Technical risk and mitigation. ☐ Validation of assumptions. ☐ Conformance with standards and regulatory requirements. ☐ Check of calculations. ☐ Client input review.	☐ Review of client, sub and third-party information. ☐ Edit for elements such as grammar, punctuation, formatting and graphics. ☐ Adequacy of Statements of Limitations. ☐ Verify technical solution. ☐ Basis and validity of conclusion / recommendation.	☐ Check of drawings and graphics. ☐ Compliance with scope. ☐ Organization, clarity and completeness. ☐ Specification Review. ☐ Contract Document Review. ☐ Other: Specify.

Checking (Required for All projects)

For **"Format"** columns, type N (None), HC (Hard Copy), EF (Electronic File – add network link), or RCF (Review Comment Form).

Discipline	Description (Calc/Rpt/Dwg/Specs)	Format / Network Link	Originator Initials	Reviewer/Checker Signature	Date

Reviewer/Checker signature above indicates verification of the accuracy and completeness of the work product and Reviewer/ Checker comments have been incorporated, including subsequent or new comments; further, Reviewer is not an Originator of the work product.

*For additional disciplines/reviewers/deliverables attach a table to this TQRR with the above content.

Verification (Required for C3, C2, C1 and C0 projects)

Lead Verifier signature indicates confirmation the work product is complete and in accordance with the technical approach/solution.

Lead Verifier Select One:

☐ Lead Verifier has verified that review(s) have been adequately completed and documented. There are no outstanding issues.

or

☐ Lead Verifier has verified that review(s) have been adequately completed and documented, except for unresolved items (items not impacting adequacy of submittal). Any unresolved items have been submitted to the Project Manager or Designee for final resolution.

Lead Verifier Name	**Lead Verifier Signature**	**Date**
Lead Verifier Name	**Lead Verifier Signature**	**Date**
Lead Verifier Name	**Lead Verifier Signature**	**Date**
Lead Verifier Name	**Lead Verifier Signature**	**Date**
Lead Verifier Name	**Lead Verifier Signature**	**Date**

Approval (Required for All projects)

☐ Confirmation the deliverable has been reviewed for overall completeness, compatibility and conformance with scope and other contract requirements; all applicable reviews have been completed and deliverable is ready for submission to the client.

Project Manager Signature		**Date**
Project Quality Manager Name (If not performed by LV or PM)	**Project Quality Manager Signature (If not performed by LV or PM)**	**Date**

Independent Peer Review (C0 projects)

Comments have been provided on:	☐ Directly on work product (electronic or on hard copy)	☐ Comment and Disposition Form	
	☐ Other (paste link to network file):		
Independent Peer Reviewer Name (as applicable)	**Independent Peer Reviewer Signature (as applicable)**	**Date**	

DISTRIBUTION	Project Central File – Quality File Folder	Othe – Specify:	

APPENDIX D – QUALITY ASSURANCE & DELIVERABLE RELEASE RECORD FORMS

- *LADOTD QA Information Package Checklist*
- *LADOTD QC/QA Certification*
- *LADOTD Consultant Submittal QC/QA Certification*
- *AECOM QMS Document Transmittal*

APPENDIX C—QA INFORMATION PACKAGE CHECKLIST

Project No.:
Project Description:

_____ Calculation Book

_____ Plans

_____ Special Provisions

_____ Cost Estimate

_____ Other Documents _____

APPENDIX D—QC/QA CERTIFICATION

Project No.:

Project Name:

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

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

APPENDIX I—CONSULTANT SUBMITTAL QC/QA CERTIFICATION

Project No.:

Project Name:

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

_____

Submittal Description

_____	_____	_____
Supervisor or Team Leader Name	Signature	Date

AECOM

Document Transmittal

Note: Sign and return this page via Fax (509- 375-5331) or e-mail.	1. Date:	2. Technical Document ID No.: #####-TTC-###
3. To:	4. cc: Name, Company	5. Return Responses To: 6. Return By:
7. Project:	8. No. of Copies:	
9. Description:		

10. Client Action Items:

- ☐ For Approval
- ☐ For Review
- ☐ For Reference
- ☐ QA Original Records
- ☐ Change Request
- ☐ Document Control Submittal for Records Filing
- ☐ Other:

11. AECOM Action Items:

- ☐ Not Applicable
- ☐ UCNI Controlled Document
- ☒ Records Index No.: 370.1
  - ☒ Non-Permanent ☐ Lifetime
- ☐ Scanned
- ☐ CD to Client Dual Storage CD Made? ☐ Yes ☐ No
- ☐ For QA Files
- ☐ Other:

12. Instructions/Remarks:

13. Action: (A=Approval; R=Review; I=Information; and N/A=Not Applicable)

Action	Disciple	Printed Name	Signature	Date	Action	Disciple	Printed Name	Signature	Date
	Project Mgr:					ES&H Mgr:			
	Engineering Mgr/Technical Lead:					Contract/Project Supt Mgr:			
	Business Line Lead					Process Technology Mgr:			
	Quality Assurance:					Other:			
	Program Director:					Other:			

Client Receipt:
(Sign and return)

Printed Name	Signature	Date

AECOM QA Record Receipt/Authentication:

☐ **Authentication documented in DoCS**

Printed Name	Signature	Date

14. Documents Transmitted:

Number	Revision	Title	No. of Pages	Dated