



# Louisiana Department of Transportation and Development

## Pointe-A-La-Hache Ferry Landing Replacement

CONTRACT NO. 4400026585  
STATE PROJECT NO. H.006226.5

**Request for Qualifications**



**Original**

May 17, 2023



**DOTD FORM: 24-102**

(Revised January 1, 2023)

**PROPOSAL TO PROVIDE CONSULTANT SERVICES**

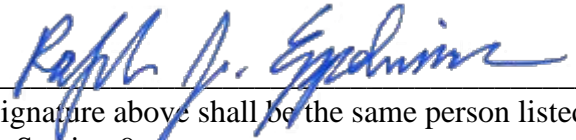
Prime consultant shall complete the DOTD Form 24-102 without altering the Form's text; however, the instruction and/or guidance for Sections 12 through 23 can be removed but do not remove Section title and number.

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

|  |  |
|--|--|
| 1. Contract Name as shown in the advertisement   | Pointe-A-La-Hache Ferry Landing Replacement  |
| 2. Contract Number(s) as shown in the advertisement  | Contract No. 4400026585  |
| 3. State Project Number(s), if shown in the advertisement  | State Project No. H.006226.5   |
| 4. Prime consultant name ( <b>name must match as registered with the Louisiana Secretary of State where such registration is required by law</b> )                               | Modjeski and Masters, Inc.   |
| 5. Prime consultant license number (as registered with the Louisiana Professional Engineering and Land Surveying Board (LAPELS) if registration is required under Louisiana law) | EF.0000570   |
| 6. Prime consultant mailing address  | 1100 Poydras Street, Suite 900, New Orleans, LA 70163                                      |
| 7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)  | 1100 Poydras Street, Suite 900, New Orleans, LA 70163                                      |
| 8. Name, title, phone number, and email address of prime consultant's contract point of contact  | Cullen J. Ledet, PE, New Orleans Regional Director<br>(504) 524-4344, cjledet@modjeski.com |
| 9. Name, title, phone number, and email address of the official with signing authority for this proposal   | Ralph J. Eppehimer, PE, Senior Vice President<br>(504) 524-4344, rjeppehimer@modjeski.com  |

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

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



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

Date: May 17, 2023

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

|                                      |                    |
|--------------------------------------|--------------------|
| <u>Firm(s):</u>                      | <u>Firm(s)' %:</u> |
| Marrero, Couvillon & Associates, LLC | 6.5%               |

**12. Past Performance Evaluation Discipline Table:**

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

The **only** past performance evaluation disciplines to be used are: Road, Bridge, Traffic, CE&I/OV, Geotech, Survey, Environmental, Data Collection, Planning, Right-of-Way, CPM, ITS, Appraiser and Other (please specify).



| Past Performance Evaluation Discipline(s)  | % of Overall Contract | Modjeski and Masters, Inc. | Fugro USA Land, Inc | C. H. Fenstermaker & Associates, L.L.C. | Marrero, Couvillon & Associates, LLC. | Each Discipline must total to 100% |
|--|-----------------------|----------------------------|---------------------|---|---------------------------------------|------------------------------------|
| Road   | 10.0%                 | 100%                       |                     |   |                                       | <b>100%</b>                        |
| Bridge   | 65.0%                 | 90%                        |                     |   | 10%                                   | <b>100%</b>                        |
| Geotech  | 20.0%                 |                            | 100%                |   |                                       | <b>100%</b>                        |
| Survey   | 5.0%                  |                            |                     | 100%                                    |                                       | <b>100%</b>                        |
| Identify the percentage of work for the <b>overall contract</b> to be performed by the prime consultant and each sub-consultant. |                       |                            |                     |   |                                       |                                    |
| Percent of Contract  | <b>100%</b>           | <b>68.5%</b>               | <b>20.0%</b>        | <b>5.0%</b>                             | <b>6.5%</b>                           | <b>100%</b>                        |

**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 (please specify)” 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](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) |
|---|-------------------------|--|---|
|                          | Principal               | 2  | 7   |
|   | Supervisor – Engineer   | 8  | 15  |
|   | Supervisor - Other      | 1  | 11  |
|   | Engineer                | 4  | 6   |
|   | Engineer - Other        | 0  | 21  |
|   | Engineer Intern         | 2  | 19  |
|   | Professional            | 0  | 1   |
|   | Senior Technician       | 1  | 3   |
|   | Technician              | 1  | 2   |
|   | CADD Technician         | 1  | 9   |
| <br>Fugro USA Land, Inc | Principal               | 1  | 1   |
|   | Supervisor-Engineer     | 2  | 5   |
|   | Geologist               | 1  | 2   |
|   | Engineer                | 1  | 3   |
|   | Engineer Intern         | 1  | 1   |
|   | CADD-Operator           | 1  | 2   |
|   | Driller                 | 1  | 3   |
|   | Senior Technician       | 4  | 8   |
|   | Administrative          | 1  | 2   |
|   | Clerical                | 1  | 2   |
|   | Party Chief             | 1  | 3   |
|   | Surveyor                | 1  | 2   |



C. H. Fenstermaker & Associates, L.L.C.

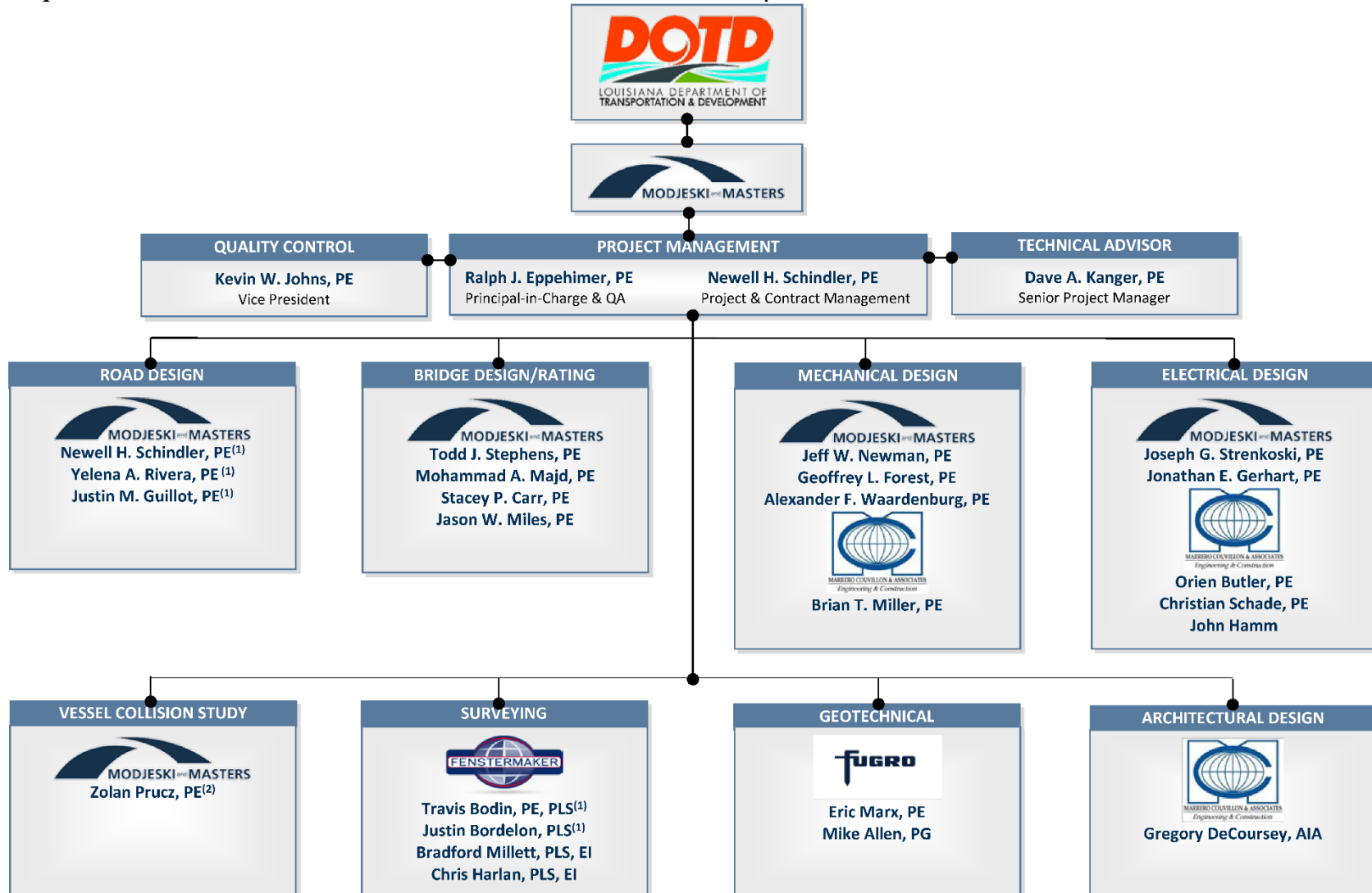
|                        |   |    |
|------------------------|---|----|
| Administrative         | 0 | 2  |
| Biologist/Wetlands     | 0 | 1  |
| CADD-Operator          | 0 | 2  |
| Clerical               | 0 | 2  |
| Engineer               | 0 | 12 |
| Engineer Intern        | 0 | 15 |
| Environmental Pro      | 0 | 3  |
| GIS Analyst            | 0 | 2  |
| Inspector              | 0 | 4  |
| Inspector – Certified  | 0 | 3  |
| Inspector - Lead       | 0 | 1  |
| Instrument Man         | 0 | 7  |
| Party Chief            | 0 | 8  |
| Planner                | 0 | 2  |
| Professional           | 0 | 2  |
| Project Office Manager | 0 | 2  |
| Principal              | 0 | 3  |
| Rodman                 | 0 | 3  |
| Surveyor               | 4 | 14 |
| Senior Technician      | 0 | 8  |
| Principal              | 1 | 1  |
| Supervisor Engineer    | 1 | 1  |
| Engineer               | 3 | 4  |
| Engineer Intern        | 1 | 1  |
| Supervisor – Other     | 1 | 1  |
| Designer               | 2 | 3  |
| CADD Technician        | 2 | 2  |



MARRERO COUVILLON & ASSOCIATES  
Engineering & Construction

**14. Organizational Chart:**

Provide an organizational chart showing ALL **relevant** prime consultant and sub-consultant (if applicable) personnel assigned to the contract, area of project responsibility for each, and reporting lines for the purposes of this contract. An individual’s role does not necessarily have to match their DOTD job classification identified in Section 13. **If applicable, identify all personnel performing traffic engineering analysis and/or QC of traffic engineering analysis by placing an asterisk next to their name. Include the certificates required by the Traffic Engineering Process and Report Training Requirements article of the Advertisement in Section 20.** It is acceptable to use an 11x17 format for Section 14.



(1) Work Zone Training

(2) Part-Time (Available As-needed)

**15. Minimum Personnel Requirements:**


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

| MPR No.<br>Do not insert wording from ad | Personnel being used to meet the MPR<br>(Individual(s) may not satisfy more than one MPR unless specifically allowed by Attachment B of the advertisement) | Firm employed by                        | Type of license and discipline meeting MPR/ certification & number<br>(Ex: PE # - Civil) | State of license | License / certification expiration date |
|--|--|---|--|------------------|---|
| 1  | Ralph J. Eppehimer, PE   | Modjeski and Masters, Inc.              | PE #23251 - Civil  | LA               | 3/31/2025                               |
| 2  | Ralph J. Eppehimer, PE   | Modjeski and Masters, Inc.              | PE #23251 - Civil  | LA               | 3/31/2025                               |
| 3  | David A. Kanger, PE  | Modjeski and Masters, Inc.              | PE #29048 - Civil  | LA               | 9/30/2024                               |
| 4  | Newell H. Schindler, PE  | Modjeski and Masters, Inc.              | PE #24130 - Civil  | LA               | 3/31/2024                               |
| 5  | Travis Bodin, MBA, PLS, PMP  | C. H. Fenstermaker & Associates, L.L.C. | PLS #5067  | LA               | 10/24/2024                              |
| 6  | Eric Marx, PE  | Fugro USA Land, Inc.                    | PE #31479 - Civil<br>(Geotechnical)<br>22 years' experience                              | LA               | 3/31/2025                               |
| 7  | Mike Allen, PG   | Fugro USA Land, Inc.                    | Professional Geoscientist<br>No. 165, Field Crew<br>Supervisor,<br>34 years' experience  | LA               | 10/14/2023                              |

(Add rows as needed)



**16. Staff Experience:**

|  |   |            |   |   |            |
|--|---|------------|---|---|------------|
| Firm employed by <b>Modjeski and Masters, Inc.</b>   |   |            |   |  |            |
| Name   | <b>Kevin W. Johns, PE</b>   |            | Years of relevant experience with this employer     |   | 23         |
| Title  | Vice President/Director Movable Bridge Unit   |            | Years of relevant experience with other employer(s) |   | 0          |
| Degree(s) / Years / Specialization   |   | MS 1998    | Civil Engineering                                   |   |            |
|  |   | BS 1996    | Civil Engineering                                   |   |            |
| Active registration number / state / expiration date   |   | 044204     | North Carolina                                      | 12/31/2022  |            |
| 35101  | Alabama   | 12/31/2022 | 13403   | New Hampshire   | 2/28/2023  |
| PEN.0030631  | Connecticut   | 1/31/2022  | 24GE05232700  | New Jersey  | 4/30/2022  |
| 20136  | Delaware  | 6/30/2022  | 092213  | New York  | 1/31/2022  |
| 78268  | Florida   | 2/28/2023  | 91792PE   | Oregon  | 6/30/2022  |
| 55231  | Massachusetts   | 6/30/2022  | PE060642  | Pennsylvania  | 9/30/2022  |
| 44386  | Maryland  | 9/12/2022  | 31371   | South Carolina  | 6/30/2022  |
| 6201056533   | Michigan  | 8/3/2023   | 0402054007  | Virginia  | 10/31/2022 |
| 51126  | Minnesota   | 6/30/2022  |   |   |            |
| Year registered  | 2002  | Discipline | Civil   |   |            |
| Contract role(s) / brief description of responsibilities: Mr. Johns is the Director of the Movable Bridge Business Unit with more than 20 years of experience. In the past 5 years, he has served as Project Manager or Task Leader on 28 movable bridge projects, 19 railroad projects and 9 movable railroad projects. Eight of these projects have had a construction cost of over \$100 million. He has served as the Project Manager on the St. Joseph River Bascule Bridges Rehabilitations, Houghton/Hancock Vertical Lift Bridge Rehabilitation, and the Cheboygan Rolling Bascule Rehabilitation for MDOT. Mr. Johns also was the Deputy PM and Lead Structural Engineer for the Elizabeth City Bascule Bridge Replacement Project, which was completed under an accelerated design schedule. He served in a similar capacity for the in-depth rehabilitation of a swing span bridge in Wilmington, DE; for rehabilitation and tower heightening of a vertical lift bridge in Philadelphia, PA; and for the design of the Gilmerton Bridge, a new large vertical lift bridge in Chesapeake, VA. Mr. Johns is currently the Project Manager or Deputy Project Manager for the replacement of three movable bridges in Sacramento, CA; Secaucus, NJ; and Milford, CT. |   |            |   |   |            |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |            |   |   |            |
| 06/14 – 04/23  | <b>I-Street Bridge Replacement, Sacramento, CA   City of Sacramento</b><br>Mr. Johns is serving as M&M’s project manager and movable bridge task leader for this project. He is overseeing the development of various movable bridge alternative design options and the eventual selection of the preferred alternative. As a subconsultant, M&M was selected to design a new Sacramento River bridge. Our portion of the design extends from abutment to abutment and includes all movable components. The first phase is a conceptual study and permitting, followed by final design. This new structure will accommodate highway traffic, which currently crosses the 102-year-old I Street Swing Bridge (upper deck) and will be located on an alignment just to the North. The existing I Street Bridge will remain in place and continue to carry rail traffic (lower deck). The project is expected to cost approximately \$100 Million. |            |   |   |            |
| 06/17 – 03/20  | <b>New Broadway Bridge Design. West Sacramento, CA   Mark Thomas &amp; Company</b><br>Mr. Johns served as M&M’s project manager and movable bridge task leader for this project. He oversaw the development of various movable bridge alternative design options and the eventual selection of the preferred alternative. As a subconsultant,   |            |   |   |            |

|               |   |
|---------------|---|
|               | <p>M&amp;M was responsible for the structural, mechanical, and electrical design of the new movable span. Our scope included the substructure, superstructure, and pier protection system. Phase 1 was concept development and alternatives analysis. In this phase, M&amp;M evaluated several variations of swing spans, bascule spans and vertical lift spans then make a recommendation as to the type of movable bridge that is best suited. Phase 2 and Phase 3 were preliminary and final design, respectively. In these phases, M&amp;M generated contract drawings, specifications and a construction cost estimate.</p>  |
| 11/14 – 10/17 | <p><b>Cheboygan Bridge Rehabilitation Cheboygan, Michigan   Michigan DOT:</b> M&amp;M was contracted to perform engineering services for the electrical, mechanical and structural rehabilitation of the double leaf bascule bridge and its approaches at Cheboygan, MI. M&amp;M prepared preliminary and final structure plans as well as the mechanical and electrical plans to rehabilitate the aging structure that was built in 1940. Mr. Johns served as the Project Manager and oversaw the structural design. He was in direct responsible charge of communication with MDOT, coordination of subconsultants, monitoring of the schedule and budget, and overall direction of the project. Although not explicitly part of the Scope he established biweekly calls with MDOT keep them informed of the project status and discuss any relevant issues. With the project team he facilitated weekly project meetings to ensure coordination among disciplines. During construction Mr. Johns is responsible for QA of responses to structural submittals and RFI's from the contractor.</p>  |
| 09/13 – 12/14 | <p><b>Portage Lake Lift Bridge Rehab. Houghton, Michigan   Michigan DOT :</b> M&amp;M was selected by the MDOT for the rehabilitation design of the Portage Lake Lift Bridge. The bridge, which connects the cities of Houghton and Hancock, is the heaviest and widest double-deck vertical lift bridge in the world. M&amp;M will lead the structural, electrical and mechanical design of the massive 269' long, 54' wide lift span. The lift span, which can be raised up to 100', features an upper and lower deck capable of carrying a total of eight lanes of US Highway 41 and M-26. M&amp;M will also implement homeland security recommendations, provide structural repairs to the operator's house, and design upgrades to the barrier gates. Mr. Johns served as the Project Manager for the project and oversaw the structural design. He directed the efforts of the structural designers including the repairs to the operator's house from the high-load hit, repair of corroded floor system members, repair details for damaged railing, steel and concrete details for a support platform for new barrier gates, concrete spall repair in the deck and substructure; riprap scour protection; the construction cost estimate; and the project special provision. He coordinated the efforts of the mechanical, electrical and structural designers. He also coordinated the repairs with the Traffic Management Plan.</p>              |
| 04/11 – 01/14 | <p><b>Elizabeth City Bridge Replacement. North Carolina DOT (Elizabeth City, North Carolina):</b> As part of a Movable Bridge Services Agreement for North Carolina Dept. of Transportation, M&amp;M has been contracted to replace the eastbound and rehabilitate the westbound bridges at Elizabeth City. The westbound span is a double leaf Hopkins trunnion bascule bridge. The new eastbound bridge is a double leaf trunnion bascule bridge. Mr. Johns served as both the Deputy Project Manager and the Lead Engineer on this Eastbound Bridge replacement and Westbound Bridge rehabilitation project. He was in direct responsible charge of the design of the new bascule girders, floorsystem, grid deck, counterweight, reinforced concrete bascule pier, and pipe pile footings. He was responsible for QA of the final plans, specs and cost estimate. He coordinated the efforts of and reviewed submission material for multiple subconsultants including the architect, geotechnical engineers, surveyors and fixed approach span designers. He facilitated regularly schedule project meetings to ensure coordination between all disciplines. He regularly communicated directly with NCDOT to keep them aware of the project status. During construction Mr. Johns was responsible for QA of responses to structural submittals and RFI's. Mr. Johns also developed repair details for a crack in the existing bascule girder web.</p> |

**16. Staff Experience:**

|  |   |            |   |                   |
|--|---|------------|---|-------------------|
| Firm employed by <b>Modjeski and Masters, Inc.</b>   |   |            |   |                   |
| Name   | <b>Ralph J. Eppehimer, PE</b>   |            | Years of relevant experience with this employer     | 40                |
| Title  | Principal & Director of Field Services  |            | Years of relevant experience with other employer(s) | 1                 |
| Degree(s) / Years / Specialization   |   | BS         | 1982  | Civil Engineering |
| Active registration number / state / expiration date   |   | 23251      | LA  | 03/31/2023        |
| Year registered  | 1989  | Discipline | Civil   |                   |
| Contract role(s) / brief description of responsibilities:  |   |            |   |                   |
| <p>Mr. Eppehimer has over 40 years of field services experience with Modjeski and Masters, Inc. and is the Director of Field Services. He has vast experience in all aspects of field services including new bridge construction, safety and maintenance inspections of existing bridges, repair and rehabilitation of bridges, and emergency response to bridge accidents. He has been the construction project manager, resident engineer, assistant resident engineer and technical advisor on a number of significant movable bridge projects, primarily railroad bridges. Mr. Eppehimer's technical specialties are the field inspection of all types of bridge, field monitoring of movable bridge construction, repair and rehabilitation of bridges, and the repair and retrofit of movable bridges. Mr. Eppehimer fulfills the minimum personnel requirements for MPR #1 &amp; #2 and will serve as Principal-in-Charge for this project.</p> |   |            |   |                   |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).  |            |   |                   |
| 12/15 – 03/20  | <p><b>UPRR 305.45 Angleton Sub San Bernard Bridge. Sweeney, TX</b>   Union Pacific Railroad (2016-2018)<br/>M&amp;M provided the design for a new vertical lift bridge that will replace an existing swing span bridge over the San Bernard River in the Angleton Subdivision of the Union Pacific Railroad. M&amp;M worked with the UPRR to accommodate an accelerated construction schedule, and provided construction support for the project. The new bridge was designed to be “remote control ready.” Mr. Eppehimer served as the Principal-in-Charge for this project.</p>   |            |   |                   |
| 02/12 - 02/23  | <p><b>2007-062-RB Lapalco Bridge Repairs, Jefferson Parish, LA</b><br/>This project involved the rehabilitation, repairs (structural, mechanical, electrical and architectural), and repainting of this four-lane, bascule highway bridge. Modjeski and Masters provided the development of plans and specifications and construction services. Mr. Eppehimer was the Project Manager for all the construction engineering support services associated with this project.</p>   |            |   |                   |
| 11/16– 5/17  | <p><b>Port of New Orleans Seabrook Bridge Floor System Replacement. New Orleans, LA</b><br/>Modjeski and Masters prepared the plans and specifications to replace the railroad floor system between the trusses of the Seabrook Railroad Bridge for the Port of New Orleans. M&amp;M also developed the sequence of construction to minimize the impacts to the rail and marine traffic as well as maintain the span balance throughout construction. Mr. Eppehimer was Principal-in-Charge for this project.</p>   |            |   |                   |
| 02/17– 5/17  | <p><b>Port of New Orleans Seabrook Bridge Link Pin Joints Emergency - Construction Services. New Orleans, LA:</b> After M&amp;M completed the initial investigation and developed emergency repair contract documents for the partially failed 2nd Link joint on the Seabrook Strauss Bascule Bridge, the Port of New Orleans called upon M&amp;M to provide Construction Support Services for the project. M&amp;M reviewed all Contractor RFIs, shop drawings, and procedure submittals for the project. M&amp;M also provided on-site construction inspection services throughout the repair effort. Mr. Eppehimer was Principal-in-Charge for this project.</p> |            |   |                   |



|               |   |
|---------------|---|
| 03/09-01/10   | <p><b>Bridge 73.31 across Bayou Boeuf, BNSF Railway, Amelia, LA</b></p> <p>Mr. Eppehimer served as the Construction Project Manager for M&amp;M, overseeing the replacement of an older, single-track railroad, through-plate girder swing span with a new through-plate girder swing span. He made monthly project site visits during construction, including during the span change-out period. He also provided construction engineering office support and supervised the full-time, on-site Resident Inspector on the project.</p>   |
| 02/07-07/07   | <p><b>Vertical Lift Span Relocation, Union Pacific Railroad, Houma, LA to Freeport, TX</b></p> <p>Mr. Eppehimer served as the Construction Project Manager overseeing the disassembly and relocation of an existing, single-track railroad vertical lift span from Houma, LA to Freeport, TX where it was rebuilt with modifications to replace an older through-truss swing. He made monthly visits during construction to either project site, as appropriate, including during the span change-out period in Texas. He also provided construction engineering office support and supervised the full-time, on-site Resident Inspector.</p>   |
| 01/01-05/09   | <p><b>Florida Avenue Bridge Replacement, Port of New Orleans, New Orleans, LA</b></p> <p>Mr. Eppehimer served as the Construction Project Manager for M&amp;M, overseeing the replacement of an older bascule span carrying a double-track and two vehicular roadway lanes with a new vertical lift span carrying a single-track and two vehicular roadway lanes, to improve the width of the navigation channel. He made periodic fabrication shop visits, including to South Korea, and monthly project site visits during construction, including during the span change-out period. He also provided construction engineering office support and supervised the on-site Resident Engineer and inspection team.</p>  |
| 12/06-07/07   | <p><b>Pointe-A-La-Hache Ferry Landing Rehabilitation. Plaquemines Parish, LA   LADOTD</b></p> <p>The proposed overall project consisted of performing a rehabilitation of the Pointe-A-La-Hache East Bank and West Bank Ferry Landings for the ferry crossing the Mississippi River. Preliminary plans were prepared in accordance with the requirements of the DOTD Roadway Plan Preparation Manual, Bridge Design Manual, Off-System Bridge Rehabilitation and Replacement Program Guidelines and Hydraulics Manual. Specifications were in accordance with latest edition of the Louisiana Standards Specifications for the Road and Bridges. As a sub-consultant, Modjeski and Masters developed preliminary plans for the electrical and mechanical layout drawings and associated electrical and mechanical general notes. This work basically covered the design of the approach lifting mechanism and electrical power requirements for the lifting equipment and approach bridge lighting. Mr. Eppehimer provided constructability oversight for this project.</p> |
| 09/05 – 10/06 | <p><b>LADOTD-CCCD Ferry Facilities Repairs. New Orleans, LA   LADOTD</b></p> <p>Hurricane Katrina struck the Greater New Orleans area causing significant damage to LADOTD-CCCD facilities. Modjeski and Masters swiftly responded to establish communications with LADOTD personnel and quickly received assignments for emergency response to fixed and floating assets as related to the LADOTD-CCCD ferry facilities. M&amp;M provided inspection, reporting, repair detailing and monitoring of construction repairs of damages caused by Hurricane Katrina to ferry facility buildings, pedestrian access bridges, vehicle roadway bridges and moorings. The facilities included: Canal Street, Algiers, Jackson Avenue, Greta, Lower Algiers and Maintenance Landing. Mr. Eppehimer served as the Project Manager for this project.</p>  |
| 1996-1997     | <p><b>Casco Bay Bridge Replacement, Maine DOT, Portland, ME</b></p> <p>The project called for the replacement of a double-leaf bascule bridge over the Fore River with a structure consisting of a 285 ft. double-leaf bascule span. Mr. Eppehimer served as a Technical Advisor to the Maine DOT during construction of the bascule spans. This assignment included making structural and machinery shop visits to observe fabrication and shop assemblies and tests, and providing a full-time presence, on-site, during the movable span and machinery erection period.</p>  |

**16. Staff Experience:**

|  |  |                     |   |                   |
|--|--|---------------------|---|-------------------|
| Firm employed by <b>Modjeski and Masters, Inc.</b>   |  |                     |   |                   |
| Name   | <b>Newell H. Schindler, PE</b>   |                     | Years of relevant experience with this employer     | 3                 |
| Title  | Senior Engineer - Structures   |                     | Years of relevant experience with other employer(s) | 38                |
| Degree(s) / Years / Specialization   |  | BS                  | 1982  | Civil Engineering |
| Active registration number / state / expiration date   |  | 24130               | LA  | 3/31/2024         |
|  |  | Work Zone Compliant |   |                   |
| Year registered  | 1988   | Discipline          | Civil   |                   |
| Contract role(s) / brief description of responsibilities: Mr. Schindler has 41 years of experience in the management and design of infrastructure projects, 13 years of experience in the Road Design Section of LADOTD, and 28 years of experience as a Consulting Engineer which has included Project Management and design of a multitude of infrastructure improvement projects. He has extensive knowledge of current LA DOTD and the American Association of State Highway & Transportation Officials' (AASHTO) policies and design procedures. In addition, Mr. Schindler supervised the design of a multitude of road and bridge improvement projects, including complex urban interstate, urban arterial, rural arterial, and minor bridge replacement projects. Projects included coordination with Traffic Engineers and the evaluation of traffic analyses to develop capacity and safety roadway improvements, including intersections and interchanges. He completed the course "National Environmental Policy Act (NEPA) and Transportation Decision Making," sponsored by the National Highway Institute. Mr. Schindler will serve as Project Manager and will fulfill MPR #4 for this contract. |  |                     |   |                   |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).  |                     |   |                   |
| 12/20 - 03/22  | <p><b>Cline Ave Bridge. East Chicago, Indiana   United Bridge Partners</b></p> <p>Mr. Schindler served as lead engineer for several post construction design tasks. Performed an independent technical review (ITR) of final roadway signing and striping plans prepared by others to determine conformance with AASHTO, IDOT, and IMUTCD design criteria and guidelines. 23 non-conformance Items were identified and documented in M&amp;M's NCR Report. Also provided the Client with 17 additional recommendations to improve the operation and safety of the Cline Ave. Bridge facility. Subsequently, prepared final construction plans to address the NCR items and recommendations. Final plans included signing and striping layouts along with sign structure details. Also prepared final plans for the installation of Guide (Attraction) signs along Indiana SR 912 and I-90 in Indiana and Illinois. Plans were prepared in accordance with IMUTCD, MUTCD and Illinois and Indiana sign guidelines. Also Served as lead engineer developing conceptual geometric layouts for two (2) proposed new partial and fully directional interchanges. at Riley Road and Cline Ave. Bridge (SR-912) (CAB). Five (5) conceptual interchange layouts were developed for the proposed Riley Rd./CAB Interchange and Three (3) conceptual interchange layouts were developed for the proposed Riley Rd./CAB Interchange and presented in a feasibility report. Conceptual roundabout layouts were developed for the ramp intersections. Developed design criteria for the proposed ramps in accordance with AASHTO and IDOT Interchange guidelines.</p> |                     |   |                   |
| 02/17 - 05/20  | <p><b>LA 37 (Sullivan Rd. – Liberty Rd.) Stage 0 Feasibility Study (S.P. No. H.00297.1). Baton Rouge, LA   LADOTD</b></p> <p>Mr. Schindler served as the Project Manager and Principal-in-Charge for a Stage 0 Feasibility Study to evaluate the constructability and operational feasibility of various safety and operational roadway improvement alternatives along an 8.5 mile segment of LA 37. Included the evaluation of improvements for the major intersections. Phase 1 services consisted of the, initial project research and data collection, initial site investigations, developing the Preliminary Purpose and Need and performing a traffic study for the Existing and No-Build conditions and developing the proposed improvement to carry forward to the Phase 2 Services. Phase 2 services included developing the design criteria for the evaluation of proposed safety and capacity improvement alternatives, completing segments of the Stage 0 Feasibility Study and Environmental checklist.</p>  |                     |   |                   |



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| 01/16 - 05/20 | <p><b>Central City Group A (FRC) (DPW P. No. 2017-RR021). New Orleans, LA   City of New Orleans - DPW</b></p> <p>Mr. Schindler was Project Principal, Engineer of Record and Quality Control Officer. He performed technical engineering design QC reviews for full reconstruction (FRC) of several streets (13 blocks) in the urbanized Central City Neighborhood. Project was a complex urban design due to the number of underground utilities. Mr. Schindler performed technical quality control reviews of the hydrologic and hydraulic analyses for the design of the sub-surface drainage system for a 10-year design storm in accordance with Louisiana (LA) DOTD Hydraulics Manual, along with technical quality control reviews of the design for the replacement of the existing water and sewer systems. He reviewed the designed profile grades to confirm conformance with AASHTO design criteria and LA DOTD sub-surface hydraulic criteria. He performed technical analysis and quality control reviews of the proposed geometric details and joint layouts. Mr. Schindler reviewed calculations for quantities for all construction items. He performed quality control reviews of the final construction plans and specifications, including typical sections, plan/profile sheets, geometric detail, joint layouts and cross sections.</p> |
| 05/12 - 08/16 | <p><b>Baker Canal Bridge Replacement (S.P. No. H000698). Baker, LA   LADOTD</b></p> <p>Mr. Schindler was Project Principal, Engineer of Record and Quality Control Officer. Project consisted of the design for the replacement of the northbound and southbound bridges over Baker Canal, along with reconstruction of the approach roadway and geometric improvements for the US 61/LA 964 interchange. Mr. Schindler performed technical quality control reviews for all aspects of the highway design in accordance with LA DOTD and AASHTO policies and criteria. He Performed technical quality control reviews of the horizontal and vertical design and quality control reviews of the H&amp;H analyses in accordance with LA DOTD Hydraulics manual for drainage improvements (open ditch &amp; sub-surface drainage). Mr. Schindler performed technical quality control reviews of the preliminary and final construction plans, which included typical sections, plan/profile sheets, traffic control plans, sequence of construction, and cross section sheets. Included guard rail in accordance with AASHTO's roadside design guide. He calculated construction quantities. He reviewed RFI and provided recommendations. He also reviewed and approved plan changes and provided construction support during the construction phase.</p>       |
| 01/99 - 09/01 | <p><b>Clayton - Greenville; LA 15 (S.P. Nos. 26-03-0024 &amp; 26-04-0025), Catahoula &amp; Concordia Parishes, LA   LADOTD</b></p> <p>Mr. Schindler served as Project Manager. He designed an upgrade of seven (7) miles of existing two-lane rural arterial highway to a four-lane divided, which included both a 4-lane rural with depressed median and an urban couplet with sub-surface drainage. He designed all geometric details at intersections, median cross-overs, including design of the geometric details for the realignment of the major urban intersections at LA 566 and US 165. He performed a line and grade study for the required realignment of LA 566 in order to minimize required right-of-way impacts. Mr. Schindler performed hydrologic and hydraulic calculations for the drainage design in accordance with LA DOTD's Hydraulics Manual. He prepared complete sets of construction plans, which included typical sections, plan/profiles, signing and striping layouts, design drainage maps and cross sections. He calculated all construction quantities and prepared the engineers opinion of probable construction cost (OPCC).</p>  |
| 09/95 - 12/99 | <p><b>Golden Meadow - Larose; LA 3235 (a.k.a. LA 1 Relocated) &amp; Extension of LA 657 (S. P. Nos. 829-11-0008 &amp; 829-26-0007). Lafourche Parish, LA   LA DOTD</b></p> <p>Mr. Schindler served as Project Manager and Engineer-of-Record. He designed five (5) miles of a four-lane arterial on new alignment. He also designed the extension of La 657 between existing LA 1 and new LA 3235, which consisted of .5 miles of new two-lane rural highway, along with geometric design of major new intersections with existing LA 1 and new LA 3235. Mr. Schindler also prepared complete sets of construction plans for separate embankment and paving construction plans, which included typical sections, plan/profiles, signing and striping layouts, design drainage maps and cross sections. He designed plans for the relocation for a levee which crossed the new alignment. He performed hydrologic and hydraulic calculations for the drainage design in accordance with LA DOTD's Hydraulics Manual. Mr. Schindler calculated all construction quantities and prepared the engineers opinion of probable construction cost (OPCC).</p>   |

**16. Staff Experience:**


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| Firm employed by <b>Modjeski and Masters, Inc.</b>   |  |            |   |           |
| Name   | <b>David A. Kanger, PE</b>   |            | Years of relevant experience with this employer     | 27        |
| Title  | Senior Project Manager   |            | Years of relevant experience with other employer(s) | 0         |
| Degree(s) / Years / Specialization   |  | MS 1996    | Civil Engineering                                   |           |
|  |  | BS 1995    | Civil Engineering                                   |           |
| Active registration number / state / expiration date   |  | 29048      | LA  | 9/30/2024 |
| Year registered  | 2000   | Discipline | Civil   |           |
| Contract role(s) / brief description of responsibilities: Mr. Kanger joined Modjeski and Masters, Inc. in 1996 and is an Associate in the firm's New Orleans office. During this period, he has been engaged in the design of fixed and movable, railroad and highway bridges. His design experience includes work in all phases of the design process from preliminary project development through construction support. Mr. Kanger has acquired significant emergency repair and field inspection experience including truss inspection, pin replacement monitoring, construction support for the Huey P. Long Bridge substructure and superstructure widening, and condition assessment of the New Orleans Westbank Expressway. Mr. Kanger is well-founded in designs using AASHTO and AREMA codes, including the development of hybrid highway-railway design criteria for the Huey P. Long Bridge Widening. He has extensive design experience with LRFD, load factor and working stress design. He fulfills the requirements for MPR #3. |  |            |   |           |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).  |            |   |           |
| 11/20 - Ongoing  | <b>H.014564 Bayou Baratavia Swing Bridge Allision Repairs. Lafitte, LA   LADOTD</b><br>In 2020, Modjeski and Masters provided emergency services in response to a vessel collision. A two-barge tow reportedly struck the 204' steel swing span of the Bayou Baratavia Bridge while traveling through the channel. Subsequently, the swing span was not operable and remained in the open position eliminating the only access across for the population of Ile De Baratavia. Modjeski & Masters Inc. performed an initial damage inspection in addition to mechanical and electrical inspections of the structure. Previously in a separate task order, M&M developed and prepared a Navigation Impact Study in accordance with USCG requirements for the proposed crossing location over Bayou Baratavia that would replace the existing structure. This study obtained and analyzed information related to present and future navigation uses and needs for the purposes of developing and evaluating alternatives for the new bridge. M&M is also providing a temporary fender repair design. Mr. Kanger serves as Project Manager for this project. |            |   |           |
| 11/16 - Ongoing  | <b>West Larose Vertical Lift Construction Services. LADOTD (Larose, Louisiana):</b> As a continuation of previous work, M&M is reviewing shop drawings, responding to RFI's, and other submittals as part of the rehabilitation of the West Larose Vertical Lift Bridge during the construction phase of the project. Mr. Kanger serves as Project Manager for this project.   |            |   |           |
| 12/16 – Ongoing  | <b>4th Street Harvey Rehab. LADOTD (Harvey, Louisiana):</b> M&M provided construction support services for the rehabilitation of the double leaf rolling bascule bridge over the Harvey Canal in Harvey, LA. This was a continuation of previous design work orders in which M&M designed the necessary rehabilitation to extend the structure life by 40 years. Work included replacing the rolling lift tread and track plates and a new hydraulic operating system. Structural, Mechanical, and Electrical rehabilitation of a double rolling leaf bascule bridge was part of the scope of work. Mr. Kanger provided construction support services for this project.  |            |   |           |
| 05/16 - Ongoing  | <b>US 11 Bridge Rehabilitation Design, New Orleans, LA   Louisiana Department of Transportation</b><br>M&M led a team providing structural, mechanical, electrical, and architectural rehabilitation services to extend the service life of the US 11 North and South bascule spans. The North bascule span is the only routinely operated span. In addition to repairs and improving the structural capacity to eliminate the weight posting of the bridge, the operator's house will be enlarged, and the span converted to hydraulic operation. The South bascule span is only opened manually (with a crane) when access is needed to service electrical utility lines crossing  |            |   |           |



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|   | the lake. The span toes will be replaced to improve the structural capacity to eliminate the weight posting of the bridge. The operator houses will be rehabilitated to retain their historic appearance. The bascule spans comprise the largest spans (149') of the overall 4.7-mile bridge over Lake Pontchartrain. Mr. Kanger is the project manager for this project.   |
| 04/06 – 02/14                                   | <b>Galveston Causeway Railroad Bridge Replacement. Galveston County (Galveston, Texas):</b> The Galveston RR Bridge is a 384-foot vertical lift span replacing the existing 125-foot bascule span and portion of the existing concrete arch spans to provide 300' horizontal navigation clearance by the order of USCG under the provisions of Truman-Hobbs Act. The project involves a complicated foundation arrangement, removal and anchorage of the existing arch structures, special truss and tower design, and challenging construction issues. Mr. Kanger provided preliminary tower design and field site survey for this project. He also provided construction support activities.  |
| 01/01 – 05/02<br>02/09 - 02/09                  | <b>Fort Madison Bridge Replacement. BNSF Railway Company (Ft. Madison, Iowa):</b> BNSF Railway requested M&M to value engineer their 10+ year old rehabilitation design of the Fort Madison Bridge across the Mississippi River. M&M reviewed the foundation design, painting, type of drive system and usage of high performance steel to determine if the design could be modified to reduce the potential construction cost. M&M was able to identify some cost savings alternatives that were now available after the original design work, which was performed in 2003. Mr. Kanger provided the design of substructure and foundation, tower top, and operator's house.  |
| 09/04 – 05/06                                   | <b>Electrical Rehabilitation of Louisville Street Bascule Bridge &amp; East Pearl River Swing Bridges. LADOTD (Monroe and St. Tammany Parishes, Louisiana):</b> M&M prepared the electrical plans with specification notes for the rehabilitation of the Louisville Street Bridge over the Ouachita River in Monroe, LA and the East Pearl River Bridge over the Pearl River in LA. Both bridges were in need of an electrical rehabilitation including lighting, gears and generator replacement. M&M also provided construction support services. Mr. Kanger provided structural evaluation, field inspection and details for submarine cable replacement for this double-leaf bascule bridge.  |
| 12/01 – 12/02<br>10/09 – 03/12<br>12/08 – 10/09 | <b>Illinois River Bridge. Elgin, Joliet &amp; Eastern Railway Company (Devine, Illinois):</b> The Illinois River Bridge was originally built as four 154-foot fixed through truss spans. About 1932, Span 2 was converted to a vertical lift span and the adjacent spans fitted with lifting towers, counterweights, and an electro-mechanical operating system, providing a 120-foot clear opening. Under the provisions of the "Truman-Hobbs Act" of 1940, the USCG is funding alteration of the bridge to provide a 300-foot marine opening. The replacement vertical lift span will be 348 feet long and have a maximum lift vertical clearance of 56 feet. M&M collected relevant data, evaluated alternatives, established design criteria, cost estimates, prepared project report, and provided the final design. Mr. Kanger designed and detailed the vertical lift bridge foundation and towers for this project. Upon this project becoming active as a result of ARRA stimulus funding, Mr. Kanger assisted with construction support activities. |
| 07/05 – 03/06                                   | <b>West Lake Swing Bridge - No.220.62. Union Pacific Railroad (Lake Charles, Louisiana):</b> Bridge No. 220.62 is a 222-foot through-truss swing bridge across the Calcasieu River. The project includes structural, mechanical and electrical modifications to provide for remote control of this mainline railroad bridge. The project provides complete new bridge electrical and PLC-based control systems and the conversion of manually operated machinery to a modern variable speed hydraulic drive for operating the bridge from the remote bridge tender's house on shore. Structural modifications will provide for supports for new electrical and mechanical equipment bungalows on the swing span. Center wedges, end wedges and rail lifts are also being converted to hydraulic operation. Closed circuit TV will provide for visual monitoring of the miter rail joints and marine traffic. Mr. Kanger provided design of swing bridge mechanical and operator house and platform replacement.   |




**16. Staff Experience:**

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| Firm employed by <b>Modjeski and Masters, Inc.</b>   |   |            |   |  |                        |
| Name   | <b>Jeffrey W. Newman, PE</b>  |            | Years of relevant experience with this employer     |   | 30                     |
| Title  | Senior Project Manager – Mechanical   |            | Years of relevant experience with other employer(s) |   | 4                      |
| Degree(s) / Years / Specialization   |   | BS         | 1987  |   | Mechanical Engineering |
| Active registration number / state / expiration date   |   | 31815      | LA  |   | 9/30/2023              |
| Year registered  | 2005  | Discipline | Mechanical  |   |                        |
| Contract role(s) / brief description of responsibilities: Mr. Newman is a Senior Associate and is the technical director for Modjeski and Masters' Mechanical Engineering department. His experience includes a wide variety of hands-on movable bridge engineering. Mr. Newman offers hard to match experience in inspection, evaluation and design of movable bridge machinery. His work in implementing strain gage instrumentation for use in the movable bridge industry has paved the way for many bridge owners to properly maintain and update their aging structures. Mr. Newman was a lead author for the first edition of the AASHTO LRFD Movable Highway Bridge Design Specifications and the project manager for the recently awarded NCHRP 12-112 Research Project. Recent work includes being the Project Manager for several traditional design and design-build projects including: Spit Bascule Bridge mech/elec upgrade (Sydney, AU), Fore River Vertical Lift Bridge replacement, and Livingston Avenue Swing Bridge mech/elec upgrade. Mr. Newman's ability to understand constructability and cross-discipline design and coordination make him a perfect fit to ensure clear and concise bid documents are provided on-time and under budget for movable bridge projects. |   |            |   |   |                        |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |            |   |   |                        |
| 04/17 – 02/18  | <b>Bridgeport Ferry Terminal. Bridgeport, Connecticut   The Bridgeport &amp; Port Jefferson Steamboat Company</b><br>As a sub-consultant, Modjeski and Masters provided engineering services for the mechanical system design of the new ferry ramp at the Barnum Landing at the Bridgeport Ferry Terminal. M&M also provided engineering services for a conceptual design of a pedestrian ramp at this Ferry Terminal. Mr. Newman served as the project manager for this project.  |            |   |   |                        |
| 03/13-ongoing  | <b>H.009479 LA 1 West Larose Vertical Lift Bridge over ICWW, Larose, LA   LADOTD</b> M&M provided rehabilitation plans for the upgrade of the structural, electrical, mechanical system to extend the life of the bridge 30-40 years for this vertical lift bridge. Additionally, a new fender system was designed, the operator house was significantly upgraded, and bridge repainted. A bridge inspection and development of scope of service preceded the preparation of plans. Mr. Newman is the Engineer of Record for the mechanical design of this project.   |            |   |   |                        |
| 11/13-ongoing  | <b>H.010016 US 11 Bridge over Lake Pontchartrain, New Orleans, LA   LADOTD</b> Within the US 11 Bridge, commonly known as the 5 mile bridge, are two double-leaf bascule spans (North Draw and South Draw). There was considerable damage to the bridge as a result of Hurricane Katrina. M&M was retained to determine the improvement needs structural, electrical and mechanical to extend the life by 20-30 years and to prepare rehabilitation plans. Mr. Newman is the Engineer of Record for the mechanical design of this project.  |            |   |   |                        |
| 10/13-Ongoing  | <b>H.010882 4th Street Harvey Bridge Rehabilitation. Harvey, LA</b><br>Categorized as a high priority project, the electrical, structural and mechanical rehabilitation of the 4th Street Bridge in Harvey, LA became a top priority for M&M. The bridge, a double leaf rolling bascule movable bridge, is approximately 40 years old and has recently experienced reliability problems. The rehabilitation was done to allow the structure to operate reliably for an additional 30-40 years with regular maintenance. Mr. Newman was the Engineer of Record for the plans and specifications for the mechanical design of this project. |            |   |   |                        |


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| 05/12 – 06/13 | <p><b>NCDOT Ferry Ramps. Various Locations, NC   NCDOT</b><br/> Modjeski and Masters provided electrical and mechanical engineering design services to NCDOT to supplement their in-house structural design of two new ferry ramps (Cherry Branch Ferry) and the rehabilitation of two other ramps (Stumpy Point Ferry and Rodanthe Ferry). This project was completed on a very accelerated delivery schedule. Mr. Newman led all mechanical engineering design services for this project.</p>   |
| 10/12 – 11/16 | <p><b>Fore River Bridge, Quincy, MA   Mass DOT.</b> As part of the design/build team led by the joint venture of White-Skanska-Koch and Parsons, M&amp;M provided the final mechanical and electrical design for the Fore River Bridge lift span. The replacement of the Fore River Bridge, carrying Route 3A, is a signature project in the Massachusetts Accelerated Bridge Program. The new proposed vertical lift bridge provides a horizontal navigable channel of 250' and a vertical clearance of 175' in the open position. Extensive rehabilitation was required for the approaches to the proposed structure in addition to demolition of the existing temporary bridge and associated fender system. In addition to the mechanical and electrical services for the lift bridge replacement, M&amp;M was also tasked with the vessel collision analysis and fender protection design. Mr. Newman was the Project Manager for mechanical and electrical design and construction support. This project was formatted as a Design-Build delivery requiring highly experienced engineering and management over a fast-paced schedule. Mr. Newman oversaw all electrical and mechanical work and coordinated with structural design including the overall fabrication and erection schedule.</p> |
| 11/10-04/15   | <p><b>H.005044 Rehabilitation of Houma Navigation Canal Swing Bridge, Houma, LA</b><br/> This Project started with the development of a scope of services and cost estimate to determine the extent of rehabilitation that fit the DOTD budget. Included in the rehabilitation were: structural repairs, new mechanical and electrical systems, new traffic barriers and gates, new fender system, new operator house, concrete repairs, sampling existing paint coatings, repainting, rebalancing of swing span, and revetment repairs. One significant feature was the installation of a platform under the roadway for mounting the mechanical system and electrical components so that they would no longer be submerged during high water conditions. Mr. Newman was the Engineer of Record for all mechanical inspection, design and installation review.</p>   |
| 04/07-05/11   | <p><b>H.003985 Mermentau Swing Bridge Rehabilitation at Grand Chenier, LA</b><br/> This Project was the rehabilitation of the LA 82 swing bridge over the Mermentau River. Included in the Project were structural repairs, electrical and mechanical upgrades, repainting, operator house upgrades, fender repairs, and traffic control devices. Traffic was maintained throughout the project. Mr. Newman was the Engineer of Record for all mechanical inspection, design and installation review.</p>   |
| 12/06–07/07   | <p><b>Pointe-A-La-Hache Ferry Landing Rehabilitation. Plaquemines Parish, LA   LADOTD</b><br/> The proposed overall project consisted of performing a rehabilitation of the Pointe-A-La-Hache East Bank and West Bank Ferry Landings for the ferry crossing the Mississippi River. Preliminary plans were prepared in accordance with the requirements of the DOTD Roadway Plan Preparation Manual, Bridge Design Manual, Off-System Bridge Rehabilitation and Replacement Program Guidelines and Hydraulics Manual. Specifications were in accordance with latest edition of the Louisiana Standards Specifications for the Road and Bridges. As a sub-consultant, Modjeski and Masters developed preliminary plans for the electrical and mechanical layout drawings and associated electrical and mechanical general notes. This work basically covered the design of the approach lifting mechanism and electrical power requirements for the lifting equipment and approach bridge lighting. Mr. Newman led all mechanical engineering design services for this project.</p>   |

**16. Staff Experience:**

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| Firm employed by <b>Modjeski and Masters, Inc.</b>  |   |            |   |  |    |
| Name  | <b>Geoffrey L. Forest, PE</b>   |            | Years of relevant experience with this employer     |   | 21 |
| Title   | Project Manager - Mechanical  |            | Years of relevant experience with other employer(s) |   | 0  |
| Degree(s) / Years / Specialization  |   | MS 2001    | Mechanical Engineering                              |   |    |
|   |   | BS 2000    | Mechanical Engineering                              |   |    |
| Active registration number / state / expiration date  |   | 45721 LA   | 9/30/2023   |   |    |
| Year registered   | 2021  | Discipline | Mechanical  |   |    |
| Contract role(s) / brief description of responsibilities: Mr. Forest is a Project Manager in the Mechanical Engineering Section of the firm. He has participated in various inspections of both fixed and movable bridges. Mr. Forest also has experience in bridge construction monitoring, inspection and condition reporting, detailing bridges for rating capacity, development of contract plans and specifications. |   |            |   |   |    |
| Experience dates (mm/yy–mm/yy)  | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |            |   |   |    |
| 04/17 – 02/18   | <b>Bridgeport Ferry Terminal, Bridgeport, Connecticut   The Bridgeport &amp; Port Jefferson Steamboat Company</b><br>As a sub-consultant, Modjeski and Masters provided engineering services for the mechanical system design of the new ferry ramp at the Barnum Landing at the Bridgeport Ferry Terminal. M&M also provided engineering services for a conceptual design of a pedestrian ramp at this Ferry Terminal. Mr. Forest served as the lead mechanical engineer for this project.   |            |   |   |    |
| 01/14 – Ongoing   | <b>US 11 Bridge Rehabilitation Design, New Orleans, LA   Louisiana Department of Transportation:</b> M&M led a team providing structural, mechanical, electrical, and architectural rehabilitation services to extend the service life of the US 11 North and South bascule spans. The North bascule span is the only routinely operated span. In addition to repairs and improving the structural capacity to eliminate the weight posting of the bridge, the operator’s house will be enlarged, and the span converted to hydraulic operation. The South bascule span is only opened manually (with a crane) when access is needed to service electrical utility lines crossing the lake. The span toes will be replaced to improve the structural capacity to eliminate the weight posting of the bridge. The operator houses will be rehabilitated to retain their historic appearance. The bascule spans comprise the largest spans (149’) of the overall 4.7-mile bridge over Lake Pontchartrain. Mr. Forest led the mechanical design team for this unique bridge rehabilitation. The original machinery design included electric motors, open gearing, and a final rack and pinion set to move the bascule leaves. The span drive system was converted to hydraulic operation using linear hydraulic cylinders acting directly on the bascule girders. The bascule leaf superstructure and pier were modeled in 3D to aid in locating clearances and interferences with the new operating machinery |            |   |   |    |
| 12/14 – 12/17   | <b>In-Depth Inspection of Complex Structures Retainer – Various Bridges (Statewide)   LADOTD:</b> As a member of a multi-firm team, Modjeski and Masters was tasked to provide Structural, Mechanical, Electrical, and Coatings inspection services to perform multiple In-Depth Bridge Inspections for various bridges throughout the state of Louisiana, as a part of the ongoing statewide Complex Structures Inspection Retainer with the LADOTD. The inspections were performed using technical rope access and rappelling, aerial work platforms, and standard climbing techniques. Bridge conditions, including specific defects, were documented and presented in an inspection report and PONTIS/Inspect-Tech forms, along with repair recommendations and a full coatings evaluation report. Mr. Forest performed an in-depth condition inspection of the operating machinery for the movable bridges and authored the mechanical section of the inspection report.   |            |   |   |    |

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| 03/10 – 06/16 | <b>Houma Navigation Canal Bridge Rehabilitation. Houma, LA   LADOTD:</b> The Houma Navigation Canal Bridge is a swing bridge operated by hydraulic slewing cylinders. M&M is providing engineering design services for the rehabilitation of the drive machinery of this bridge. Mr. Forest performed field inspection and strain gage balancing of the existing operating machinery and design of the new machinery for the upgrade of the span drive system. Mr. Forest performed shop drawing review and response to Contractor RFI's. He also performed on site machinery installation support and inspection during construction.  |
| 10/13 – 06/15 | <b>4th Street Harvey Bridge over Harvey Canal. Harvey, LA   LADOTD:</b> Categorized as a high priority project for DOTD, M&M was engaged to develop a scope for the rehabilitation of the structural, electrical and mechanical systems for extending the life of the bridge 30-40 years. Plans include replacing the grid deck, new track and tread plates, replacing hydraulic system, new electrical control system, generator, and repainting the bridge. Mr. Forest designed a new hydraulic span drive system to replace the existing hydraulic system. The new span drive was modeled after other LADOTD hydraulic span drives for consistency, but tailored specifically for this bridge. The design also included replacement of the center locks and tail locks with components that better retain the alignment of the spans. - Mr. Forest performed mechanical design for the rehabilitation. The work consisted of replacing the hydraulic span drive system in its entirety, as well as the track and tread plates. A staggered gear tooth profile was using in the track and tread design, which was modeled in 3D to create and verify the complex shapes |
| 02/09 – 10/11 | <b>Electrical Rehabilitation of Louisville Street Bascule Bridge &amp; East Pearl River Swing Bridges. Monroe and St. Tammany Parish, Louisiana   LADOTD</b><br>M&M prepared the electrical plans with specificaton notes for the rehabilitation of the Louisville Street Bridge over the Ouachita River in Monore, LA and the East Pearl River Bridge over the Pearl River in LA. Both bridges were in need of an electrical rehabilitation including lighting, gears and generator replacement. M&M also provided construction support services.  |
| 12/06–07/07   | <b>Pointe-A-La-Hache Ferry Landing Rehabilitation. Plaquemines Parish, LA   LADOTD</b><br>The proposed overall project consisted of performing a rehabilitation of the Pointe-A-La-Hache East Bank and West Bank Ferry Landings for the ferry crossing the Mississippi River. Preliminary plans were prepared in accordance with the requirements of the DOTD Roadway Plan Preparation Manual, Bridge Design Manual, Off-System Bridge Rehabilitation and Replacement Program Guidelines and Hydraulics Manual. Specifications were in accordance with latest edition of the Louisiana Standards Specifications for the Road and Bridges. As a sub-consultant, Modjeski and Masters developed preliminary plans for the electrical and mechanical layout drawings and associated electrical and mechanical general notes. This work basically covered the design of the approach lifting mechanism and electrical power requirements for the lifting equipment and approach bridge lighting. Mr. Forest was part of the mechanical engineering team for this project.   |
| 11/06 – 02/07 | <b>Stennis Space Center Bascule Bridge. Hancock County, MS   Stennis Space Center</b><br>This bridge is a double leaf bascule bridge. M&M provided an in-depth structural, mechanical, and electrical inspection. Mr. Forest was involved with the in-depth inspection and strain gauge balancing of the double-leaf bascule bridge operating machinery.  |

**16. Staff Experience:**

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| Firm employed by <b>Modjeski and Masters, Inc.</b>  |   |                                |   |    |
| Name  | <b>Alexander F. Waardenburg, PE</b>   |                                | Years of relevant experience with this employer                                     | 13 |
| Title   | Mechanical Engineer   |                                | Years of relevant experience with other employer(s)                                 | 0  |
| Degree(s) / Years / Specialization  |   | MS 2019 Engineering            |  |    |
|   |   | BS 2010 Mechanical Engineering |   |    |
| Active registration number / state / expiration date  |   | 44759 LA 3/31/2025             |   |    |
| Year registered   | 2020  | Discipline                     | Mechanical  |    |
| Contract role(s) / brief description of responsibilities:<br>Mr. Waardenburg joined Modjeski and Masters, Inc. in 2010, and is assigned to the firm's Electrical / Mechanical Section. Mr. Waardenburg has been involved in a variety of bridge projects. |   |                                |   |    |
| Experience dates (mm/yy–mm/yy)  | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |                                |   |    |
| 06/13 – 06/14   | <p><b>NCDOT Ferry Ramps   NCDOT</b></p> <p>Modjeski and Masters provided electrical and mechanical engineering design services to NCDOT to supplement their in-house structural design of two new ferry ramps (Cherry Branch Ferry) and the rehabilitation of two other ramps (Stumpy Point Ferry and Rodanthe Ferry). This project was completed on a very accelerated delivery schedule. Mr. Waardenburg coordinated the review of submittals and RFIs from the contractor and reviewed the majority of the mechanical shop drawing submittals and RFIs.</p>  |                                |   |    |
| 02/19 – 05/19   | <p><b>Fort McHenry Tunnel North Facilities - Interim Inspection – Baltimore, MD   MDTA</b></p> <p>The Fort McHenry Tunnel carries eight lanes of I-95 traffic below the Baltimore Harbor. The structure was built in 1985. The tunnel is comprised of four bores, two bores northbound (east) and two southbound (west), each carrying two lanes of traffic. The tunnel has an overall length of approximately 7,209'. Each bore consists of the main roadway opening, a supply air duct below the roadway (lower plenum) and an exhaust air duct above the roadway (upper plenum). The ventilation buildings at both ends of the tunnel house the machinery for the supply and exhaust fans and the water removal and fire suppression systems. There are administrative and security offices in the east ventilation building. M&amp;M completed the structural, electrical and mechanical inspection of the four-tube, bi-directional tunnel and ventilation buildings in 2009, 2012, 2015, 2018, 2019 and 2020. Mr. Waardenburg was part of the tunnel inspection team.</p> |                                |   |    |
| 02/19 – 05/19   | <p><b>Baltimore Harbor Tunnel - Baltimore, MD   MDTA</b></p> <p>Owned and operated by the Maryland Transportation Authority, the Baltimore Harbor Tunnel consists of two tubes with a total length of 6,300', plus an additional 1,450' of cast-in-place concrete structure at the north end. Constructed in 1958, each tube has an out-to-out width of 29'-8" and carries a two-lane highway, I-895 NB and I-895 SB respectively. The tunnel's roadway lighting system consists of wall-mounted induction lamp luminaires at varying spacing throughout both tubes. M&amp;M completed the structural, electrical and mechanical inspection of the tunnel, pump room, and ventilation buildings in 2013 and 2014. In 2015 and 2016, M&amp;M performed a complete sounding inventory of the tunnel walls and subsequent rehabilitation plans for removal and replacement of loose tiles and deteriorated concrete lining. Mr. Waardenburg was part of the tunnel inspection team.</p>  |                                |   |    |

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| 11/17 – 04/20 | <p><b>Downtown and Union Station Tunnel Inspections – St. Louis, MO   Metrolink</b></p> <p>M&amp;M was contracted to perform routine inspections of the Metro Downtown Tunnel, the Union Station Tunnel, and the Eads Bridge over a 4 year period for Metrolink. The Downtown Tunnel and Union Station Tunnel inspections were performed biannually. During the first inspections completed in 2005, M&amp;M developed inspection databases for all three structures. Databases were updated for current deficiencies and inspection reports were prepared after each inspection summarizing the overall condition of the structure, including general observations, particularly notable findings, and repair recommendations. Mr. Waardenburg was part of the tunnel inspection team.</p> <p><b>Downtown Tunnel:</b> consists of 3 main segments including two intermediate station platforms. The tunnel has a total length of 4,460'. Typical construction consists of a double-chamber tunnel. The specific scope of work for this project includes a routine inspection of the Downtown Tunnel, updating the Metro Downtown Tunnel Inspection Database, and submitting an inspection report that outlines the inspection findings and presents structural recommendations based on those findings.</p> <p><b>Union Station Tunnel:</b> consists of 3 main segments that includes an eastern segment (composed of steel members); a center segment (composed of concrete ceiling slab with drop panels, supported with capitals atop concrete columns); and a western segment (composed of a two-cell reinforced concrete box, culvert-like sections). The tunnel has a total length of 1,085'. An overall evaluation of the structure, including an in-depth inspection and load capacity ratings, was performed. Upon completion of the evaluation, the scope of work was expanded to include the preparation of repair plans and construction inspection.</p> |
| 01/16 – 09/16 | <p><b>I-Street Bridge Replacement, Sacramento, CA   City of Sacramento</b></p> <p>As a subconsultant, M&amp;M was selected to design a new Sacramento River bridge. Our portion of the design extends from abutment to abutment and includes all movable components. The first phase is a conceptual study and permitting, followed by final design. This new structure will accommodate highway traffic, which currently crosses the 102-year-old I Street Swing Bridge (upper deck) and will be located on an alignment just to the North. The existing I Street Bridge will remain in place and continue to carry rail traffic (lower deck). The project is expected to cost approximately \$100 Million. Mr. Waardenburg created preliminary mechanical designs</p>   |

**16. Staff Experience:**

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| Firm employed by <b>Modjeski and Masters, Inc.</b>   |   |            |   |                                   |
| Name   | <b>Joseph G. Strenkoski, PE</b>   |            | Years of relevant experience with this employer     | 10                                |
| Title  | Senior Project Manager - Electrical   |            | Years of relevant experience with other employer(s) | 24                                |
| Degree(s) / Years / Specialization   |   | BS         | 1988  | Electrical Engineering Technology |
| Active registration number / state / expiration date   |   | 38336      | LA  | 3/31/2024                         |
| Year registered  | 2013  | Discipline | Electrical  |                                   |
| Contract role(s) / brief description of responsibilities: Mr. Strenkoski has been employed by the Modjeski and Masters, Inc. since 2013. He has more than 27 years of experience in the electrical engineering consulting field including over a decade of project management work and almost two decades of electrical group management. Mr. Strenkoski has multi-discipline and multi-project management exposure including in-house coordination of civil, structural, and mechanical/electrical efforts, as well as relating with clients and consultants. |   |            |   |                                   |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |            |   |                                   |
| 02/17 - 08/2017<br>12/18 – 08/2019   | <b>US 11 Bridge Rehabilitation Design, New Orleans, LA   Louisiana Department of Transportation</b><br>M&M led a team providing structural, mechanical, electrical, and architectural rehabilitation services to extend the service life of the US 11 North and South bascule spans. The North bascule span is the only routinely operated span. In addition to repairs and improving the structural capacity to eliminate the weight posting of the bridge, the operator’s house will be enlarged, and the span converted to hydraulic operation. The South bascule span is only opened manually (with a crane) when access is needed to service electrical utility lines crossing the lake. The span toes will be replaced to improve the structural capacity to eliminate the weight posting of the bridge. The operator houses will be rehabilitated to retain their historic appearance. The bascule spans comprise the largest spans (149’) of the overall 4.7-mile bridge over Lake Pontchartrain. Mr. Strenkoski is the Engineer of Record for the electrical design of this project. |            |   |                                   |
| 06/13 – 02/15  | <b>Joliet IL Bascule Bridges Automation. Illinois DOT (Joliet, Illinois):</b> The design team of M&M is providing engineering services related to a design to convert six bascule bridges on the Des Plaines River in Joliet, Illinois to remote control operations. This is a complex design involving the electrical and control upgrades required to remotely control six separate movable bridges of differing types from one remote location. Mr. Strenkoski is serving as the Senior Electrical Engineer on the project responsible for QA/QC and task management of the electrical and SCADA control design. He is also responsible for all cost estimating and quantity scheduling tasks to meet client standards.  |            |   |                                   |
| 06/14 – 02/15  | <b>Elizabeth City Bridge Replacement/Rehabilitation. North Carolina DOT (Elizabeth City, NC):</b> As part of a Movable Bridge Services Agreement for North Carolina Dept. of Transportation, M&M has been contracted to replace the eastbound and rehabilitate the westbound bridges at Elizabeth City. The westbound span is a double leaf Hopkins trunnion bascule bridge. The new eastbound bridge is a double leaf trunnion bascule bridge. M&M provided construction management, including shop drawing review, shop inspection, and field inspection for the work on these bridges. Mr. Strenkoski assisted in construction support effort, construction meetings/site visits, and QA/QC of construction related responses.   |            |   |                                   |
| 02/14-07/15  | <b>Lapalco Bascule Bridge Repairs, Harvey, LA   Jefferson Parish Dept of Public Works</b><br>This 2,840’ long four-lane high-rise bridge contains a double-leaf bascule girder span over the Canal. Over a period of years, for Jefferson Parish, M&M has inspected the bridge, developed plans for upgrading structural, electrical and mechanical   |            |   |                                   |



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|             | components and provided construction support services. Emergency responses have been made following both marine collisions and hurricanes. Mr. Strenkoski investigated the needs for replacing the braking system.   |
| 10/13-02/14 | <b>Florida Avenue Bridge over Inner Harbor – Navigation Canal, New Orleans, LA</b><br>Hurricane Katrina flooded the Operator House electrical equipment room. M&M assisted the Port of New Orleans to secure funding from FEMA to rehabilitate the Operator House. The scope of services needed to be approved by FEMA and required modifications to provide the hazard mitigation and electrical repairs necessary to receive funding. Mr. Strenkoski provided assistance in site review and discussions of the situation.        |
| 04/14-05/14 | <b>H.010882 4<sup>th</sup> Street Bridge Rehabilitation, Harvey, LA   LADOTD</b><br>The project involved the reliable performance of structural, mechanical, electrical, and architectural rehabilitation services of this bridge with the intent to extend the life of the bridge 30-40 years. Constructed in 1975, the bridge is a two-lane, double-leaf bascule bridge that carries LA18 across the Harvey Canal at Harvey, Louisiana. Mr. Strenkoski assisted with the evaluation of the electrical components of this bridge. |



**16. Staff Experience:**

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| Firm employed by <b>Modjeski and Masters, Inc.</b>   |   |            |   |                        |
| Name   | <b>Jonathan E. Gerhart, PE</b>  |            | Years of relevant experience with this employer     | 13                     |
| Title  | Project Manager - Electrical  |            | Years of relevant experience with other employer(s) | 12                     |
| Degree(s) / Years / Specialization   |   | BS         | 1998  | Electrical Engineering |
| Active registration number / state / expiration date   |   | 43052      | LA  | 3/31/2025              |
| Year registered  | 2018  | Discipline | Electrical  |                        |
| Contract role(s) / brief description of responsibilities: Mr. Gerhart is a Project Manager in Modjeski and Masters' Electrical Engineering Section and has over 25 years of experience in the design of electrical distribution systems, control systems and safety systems for movable bridges. |   |            |   |                        |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |            |   |                        |
| 05/16 - Ongoing  | <p><b>US 11 Bridge Rehabilitation Design, New Orleans, LA   Louisiana Department of Transportation</b></p> <p>M&amp;M led a team providing structural, mechanical, electrical, and architectural rehabilitation services to extend the service life of the US 11 North and South bascule spans. The North bascule span is the only routinely operated span. In addition to repairs and improving the structural capacity to eliminate the weight posting of the bridge, the operator's house will be enlarged, and the span converted to hydraulic operation. The South bascule span is only opened manually (with a crane) when access is needed to service electrical utility lines crossing the lake. The span toes will be replaced to improve the structural capacity to eliminate the weight posting of the bridge. The operator houses will be rehabilitated to retain their historic appearance. The bascule spans comprise the largest spans (149') of the overall 4.7-mile bridge over Lake Pontchartrain. Mr. Gerhart was the lead electrical engineer for the complete electrical rehab of the power distribution, control system, and roadway lighting on the bridge</p> |            |   |                        |
| 06/12 - 07/16  | <p><b>LA 1 West Larose Vertical Lift Bridge over ICWW, Larose, LA   LADOTD</b></p> <p>M&amp;M provided rehabilitation plans for the upgrade of the structural, electrical, mechanical system to extend the life of the bridge 30-40 years for this vertical lift bridge. Additionally a new fender system was designed, the operator house was significantly upgraded, and bridge repainted. A bridge inspection and development of scope of service preceded the preparation of plans. Mr. Gerhart inspected the current condition of the electrical system and recommended the necessary improvements. Mr. Gerhart also participated in the design of the electrical system rehabilitation.</p>   |            |   |                        |
| 08/12 – 08/19  | <p><b>Fore River Bridge, Quincy, MA   Mass DOT.</b> As part of the design/build team led by the joint venture of White-Skanska-Koch and Parsons, M&amp;M provided the final mechanical and electrical design for the Fore River Bridge lift span. The replacement of the Fore River Bridge, carrying Route 3A, is a signature project in the Massachusetts Accelerated Bridge Program. The new proposed vertical lift bridge provides a horizontal navigable channel of 250' and a vertical clearance of 175' in the open position. Extensive rehabilitation was required for the approaches to the proposed structure in addition to demolition of the existing temporary bridge and associated fender system. In addition to the mechanical and electrical services for the lift bridge replacement, M&amp;M was also tasked with the vessel collision analysis and fender protection design. Mr. Gerhart was the lead electrical engineer for this project.</p>  |            |   |                        |
| 10/13 – 06/15  | <p><b>4th Street Harvey Bridge over Harvey Canal, Harvey, LA   LADOTD:</b> Categorized as a high priority project for DOTD, M&amp;M was engaged to develop a scope for the rehabilitation of the structural, electrical and mechanical systems for extending the life of the bridge 30-40 years. Plans include replacing the grid deck, new track and tread plates, replacing hydraulic</p>   |            |   |                        |



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|               | system, new electrical control system, generator, and repainting the bridge. Mr. Gerhart was the lead electrical engineer for this project.  |
| 01/11- 09/15  | <p><b>Jackson Street Bridge Rehabilitation, Alexandria, LA   LADOTD</b></p> <p>M&amp;M prepared the preliminary and final plans for the Jackson Street Bridge rehabilitation over Red River in Alexandria, LA. The rehabilitation includes repairing abutment damage caused by pavement growth, damaged approach slab, providing a relief mechanism for future growth, rehabilitating the lift span steel grid deck, and replacing the bridge &amp; operating house electrical components. Mr. Gerhart performed an inspection of the existing condition of the electrical systems and provided recommendations for the necessary improvements. Mr. Gerhart also participated in the rehabilitation design</p> |
| 12/10 - 08/16 | <p><b>Houma Navigational Canal Bridge Rehabilitation, Houma, LA   LADOTD</b></p> <p>The Houma Navigational Canal Bridge is a swing bridge operated by hydraulic slewing cylinders. M&amp;M is providing engineering design services for the rehabilitation of the drive machinery of this bridge. Mr. Gerhart was an Electrical Specialist on this project and was responsible for the design of the electrical system and provided construction support. Mr. Gerhart also performed the electrical inspection for this project.</p>   |
| 08/11-01/12   | <p><b>Lapalco Bascule Bridge Repairs, Harvey, LA   Jefferson Parish Dept of Public Works</b></p> <p>This 2,840' long four-lane high-rise bridge contains a double-leaf bascule girder span over the Canal. Over a period of years, for Jefferson Parish, M&amp;M has inspected the bridge, developed plans for upgrading structural, electrical and mechanical components and provided construction support services. Emergency responses have been made following both marine collisions and hurricanes. Mr. Gerhart was part of the electrical design team.</p>  |

**16. Staff Experience:**

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| Firm employed by <b>Modjeski and Masters, Inc.</b>   |  |   |                   |
| Name   | <b>Yelena A. Rivera, PE</b>  | Years of relevant experience with this employer     | 1                 |
| Title  | Structural Engineer  | Years of relevant experience with other employer(s) | 13                |
| Degree(s) / Years / Specialization   | BS   | 2009  | Civil Engineering |
| Active registration number / state / expiration date   | 40502  | LA  | 09/30/2024        |
| Year registered  | 2016   | Discipline  | Civil             |
| <p>Contract role(s) / brief description of responsibilities: Ms. Rivera has over 13 years of experience in the design of infrastructure projects. She has a broad knowledge of current Louisiana Department of Transportation and Development (LADOTD) and the American Association of State Highway &amp; Transportation Officials' (AASHTO) policies and design procedures. She has worked on a variety of highway/roadway and bridge improvement projects through planning and design phases. She has also served in project management roles and performed construction administration. She has completed the following transportation related training courses:</p> <ul style="list-style-type: none"> <li>• ATTSA - Traffic Control Technician Supervisor, LADOTD specific</li> <li>• LADOTD/LTAP – Bridge Load Rating in Louisiana</li> <li>• LADOTD/RPC – Design Streets for Pedestrians and Bicycles</li> <li>• LADOTD/LTAP – Local Public Agency Core Training</li> <li>• LADOTD/LTAP – Local Public Agency Project Planning, Feasibility &amp; Application</li> <li>• LADOTD/LTAP – Local Public Agency Construction Engineering and Inspection Training</li> </ul> <p>Ms. Rivera will serve as an engineer for Road and Drainage Design.</p> |  |   |                   |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).  |   |                   |
| 2/17 – 7/20  | <p><b>Central City Group A (FRC) (DPW P. No. 2017-RR021). New Orleans, LA   City of New Orleans - DPW</b></p> <p>Ms. Rivera served as Project Manager overseeing the Surveying, Preliminary Design, Final Design and Bidding Phases of this project. Project consisted of full reconstruction (FRC) of several streets (13 blocks) in the urbanized Central City Neighborhood of New Orleans. Project was a complex urban design due to the number of underground utilities. Included geometric design in accordance with AASHTO design criteria and ensured compliance with the Americans with Disabilities Act (ADA). Included hydrologic and hydraulic analyses for the design of the sub-surface drainage system for a 10-year design storm in accordance with the LA DOTD Hydraulics Manual, along with design of the replacement of existing water and sanitary sewer systems.</p> |   |                   |
| 1/19 – 7/20  | <p><b>Lower Ninth Ward Northeast Group C (FRC) (DPW P. No. 2019-RR105). New Orleans, LA   City of New Orleans - DPW</b></p> <p>Ms. Rivera served as Project Manager overseeing the Surveying, Preliminary Design, Final Design and Bidding Phases of this project. Project consisted of full reconstruction (FRC) of several streets (18 blocks) in the urbanized Lower Ninth Ward Neighborhood of New Orleans. Project was a complex urban design due to the number of underground utilities. Included geometric design in accordance with AASHTO design criteria and ensured compliance with the Americans with Disabilities Act (ADA). Included hydrologic and hydraulic analyses for the design of the sub-surface drainage system for a 10-year design</p>  |   |                   |



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|              | storm in accordance with the LADOTD Hydraulics Manual, along with design of the replacement of existing water and sanitary sewer systems.  |
| 12/09 – 8/16 | <b>Baker Canal Bridge Replacement (S.P. No. H000698). Baker, LA   LADOTD</b><br>Ms. Rivera was responsible for performing a site assessment, collecting relevant data for evaluation of potential effects on the project area, and coordination with LADOTD to prepare preliminary roadway and bridge plans. She also prepared cost estimates for both the replacement and rehabilitation of the existing bridge to perform a cost comparison. Upon approval from FHWA, the bridge replacement option was chosen and final roadway and bridge plans were prepared. Microstation software along with Inroads application was used to supplement geometric calculations for the proposed widening. The bridge consisted of 3-55' AASHTO Type II girder spans over concrete bents supported by pre-cast concrete piles. Included reconstruction of the approach roadways along with geometric improvement to the US 61/LA 964 Interchange. The project was awarded for construction in September 2014 and Ms. Rivera provided assistance during construction as required. |
| 8/13 – 8/14  | <b>Judge Edward Dufresne Parkway Extension Stage 0 Feasibility Study and Safety Study. St. Charles Parish, LA   New Orleans Regional Planning Commission</b><br>Stage 0 Feasibility Study was for the investigation of alternatives to extend Judge Edward Dufresne Parkway or provide emergency access to I-310 in the event of a train derailment. Ms. Rivera was responsible for conducting a windshield survey, collecting pictures and existing information and preparing geometric alignment concepts and typical section drawings for the alternatives for the Stage 0 report.  |
| 1/10 – 3/12  | <b>I-12 to Bush Environmental Impact Statement, St. Tammany Parish, LA   LADOTD</b><br>EIS for a proposed 4-lane highway from Bush, Louisiana to Interstate 12. Ms. Rivera performed a Line and Grade study for several alternatives. The study included developing the most suitable horizontal and vertical alignments for each alternative using Microstation and Inroads software, creating typical section templates and determining cut and fill quantities.   |
| 8/10 – 5/11  | <b>Airline Highway Bus Rapid Transit Stage 0 Feasibility Study. Jefferson Parish, LA   LADOTD</b><br>Feasibility study to evaluate the constructability and operational feasibility of the widening of Airline Highway (US 61) from Williams Boulevard to Hickory Avenue in Jefferson Parish, Louisiana to accommodate bus rapid transit. Ms. Rivera was responsible for collecting relevant data, evaluating potential environmental, cultural, and socioeconomic resources within the project area, coordinating with Jefferson Parish Drainage Department as well as LADOTD to develop conceptual design plans for improvements aimed at reducing traffic delays and traffic congestion. Ms. Rivera incorporated the Complete Streets Policy in the design and evaluated the engineering feasibility to complete a Stage 0 Checklist.   |
| 8/09 – 12/10 | <b>LADOTD, I-12 to Bush Environmental Impact Statement. St. Tammany Parish, LA   LADOTD</b><br>EIS for a proposed 4-lane highway from Bush, Louisiana to Interstate 12. Ms. Rivera performed a Line and Grade study for several alternatives. The study included developing the most suitable horizontal and vertical alignments for each alternative using Microstation and Inroads software, creating typical section templates and determining cut and fill quantities  |

**16. Staff Experience:**

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|--|--|------------|---|-------------------------------------|
| Firm employed by <b>Modjeski and Masters, Inc.</b>   |  |            |   |                                     |
| Name   | <b>Justin M. Guillot, PE</b>   |            | Years of relevant experience with this employer     | 2                                   |
| Title  | Structural Engineer  |            | Years of relevant experience with other employer(s) | 4                                   |
| Degree(s) / Years / Specialization   |  | BS         | 2017  | Civil and Environmental Engineering |
| Active registration number / state / expiration date   |  | 45792      | LA  | 3/31/2024                           |
| Year registered  | 2021   | Discipline | Civil   |                                     |
| <p>Contract role(s) / brief description of responsibilities: Mr. Guillot has over 6 years of experience in the design of infrastructure projects. He has a broad knowledge of current Louisiana Department of Transportation and Development (LADOTD) and the American Association of State Highway &amp; Transportation Officials' (AASHTO) policies and design procedures. He has also served in project management roles and performed construction administration. In addition, Mr. Guillot has completed coursework by the Federal Highway Administration (FHWA) and National Highway Institute (NHI) in Roadside Safety Design, as well as the American Traffic Safety Services Association (ATSSA). He is certified as a Traffic Control Technician, Traffic Control Supervisor, and Flagger. Mr. Guillot will serve as an Engineer for Road and Drainage Design.</p> |  |            |   |                                     |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).  |            |   |                                     |
| 2/21 – 3/22  | <p><b>Cline Ave Bridge. East Chicago, Indiana   United Bridge Partners</b></p> <p>This project involves various tasks related to the recent construction of a privately-owned 1.7-mile segmental box girder toll bridge. Mr. Guillot served in a general engineering support role in performing an Independent Technical Review of final Signage and Striping Plans produced by another consulting firm for conformance with Indiana Department of Transportation (INDOT) Design Guidelines as well as the Indiana Manual on Uniform Traffic Control Devices (IMUTCD). He was also tasked with proposing recommendations to improve the safety and operation of the bridge and roadway approaches, including revisions to the pavement marking layout and the addition of various warning and regulatory signs as well as roadway delineation. He produced final construction plans which included corrections to the items found not in compliance as well as the proposed recommendations. He calculated construction quantities and compiled an opinion of probable construction cost. He also reviewed construction material submittals from the contractor for conformance with the project specifications. Another task was the creation of conceptual layouts for new interchanges along the bridge. Mr. Guillot’s role included determining the appropriate ramp design criteria (design speed, travel lane and shoulder widths, cross slope, maximum grades, curve radii, etc.) and designing multiple horizontal and vertical geometries for a total of 8 ramps at 2 different interchange locations in accordance with INDOT and AASHTO’s “A Policy on Geometric Design of Highways and Streets”. These ramps required complex layouts due to vertical clearance issues caused by the presence of overhead utilities and at-grade railroad tracks as well as limited right-of-way availability. He also produced conceptual layout drawings to illustrate each alternative.</p> |            |   |                                     |
| 9/17 – 12/20   | <p><b>Central City Group A (FRC) (DPW P. No. 2017-RR021). New Orleans, LA   City of New Orleans - DPW</b></p> <p>Mr. Guillot served as Design Lead during the preliminary and final design phases then transitioned to Project Manager and Construction Administrator upon the start of the construction phase. He performed geometric design in accordance with AASHTO design criteria and ensured compliance with the Americans with Disabilities Act (ADA) for full reconstruction (FRC) of 9 city blocks in the urbanized Central City Neighborhood. The project was a complex urban design due to the number of underground utilities and limited Right-of-Way. Mr. Guillot performed hydrologic and hydraulic analyses for the design of the sub-surface drainage system for a 10-year design storm in accordance with the LADOTD Hydraulics Manual,</p>   |            |   |                                     |



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|               | <p>along with design of the replacement of existing water and sanitary sewer systems. He oversaw development of the final construction plans and specifications, including typical sections, special details, plan/profile sheets, geometric details, joint layouts, and cross sections. Mr. Guillot calculated quantities for all construction bid items and compiled an Opinion of Probable Construction Cost (OPCC) which was ultimately within 1.1% of the winning contractor's bid. Upon the start of construction, Mr. Guillot was the primary point of contact for both the client and the contractor. He reviewed contractor material submittals and shop drawings for compliance with the plans and specifications. Lastly, he performed frequent site visits to ensure safe work practices were being followed and verify the contractor's implementation of proper temporary traffic control measures.</p>   |
| 9/16 – 9/19   | <p><b>Rossignol Road Bridge Replacement. Calcasieu Parish, LA   Calcasieu Parish Police Jury (CPPJ)</b><br/> Mr. Guillot provided general Engineering support for the replacement of an 80' timber bridge on Rossignol Road with a precast concrete slab span bridge. He performed geometric design of the bridge alignment and roadway approaches in accordance with AASHTO design criteria. He performed hydrologic and hydraulic analyses of roadway drainage elements and designed the approach guardrails as well as the bridge abutment scour protection, all to LADOTD standards. He calculated final construction quantities and compiled an OPCC. He also assisted in the development of final construction plans and specifications.</p>  |
| 9/17 - 12/19  | <p><b>Old Spanish Trail – Evergreen Rd. Intersection Improvements. Calcasieu Parish, Louisiana   SASOL (2016-2019)</b><br/> Mr. Guillot provided general Engineering support for the design of capacity intersection improvements which included the realignment of Evergreen Rd. along with the addition of left and right turn lanes at the intersection. He performed geometric design calculations in accordance with AASHTO design criteria and utilized AutoTurn to verify that the WB-67 design vehicle could successfully navigate the intersection and turn lanes given the proposed configuration. He performed hydrologic and hydraulic analyses for the design of a new sub-surface drainage system which complies with current LADOTD standards. He also oversaw the preparation of construction plans and specifications which included typical sections, plan/profile sheets, design drainage maps, geometric details, sequence of construction, signing and pavement marking details, and cross sections.</p> |
| 10/15 - 12/17 | <p><b>Ham Reid Road Extension and Roundabout Design. Calcasieu Parish, Louisiana   Calcasieu Parish Police Jury (CPPJ) (2015-2017)</b><br/> Mr. Guillot provided general Engineering support for the design of the extension of Ham Reid Road between Elliott Road and LA 384 as well as the addition of two new roundabouts at the intersections of Elliott Road at Ham Reid Road, and Graywood Parkway at LA 384. He designed preliminary roadway and roundabout geometries in accordance with AASHTO design criteria, while incorporating various green infrastructure elements. He performed preliminary hydrologic and hydraulic calculations for drainage improvements. Mr. Guillot calculated construction quantities and developed a preliminary OPCC. He also directly contributed to the preparation of preliminary plans, including typical sections, plan/profile sheets, design drainage maps, geometric details, sequence of construction, signing and pavement marking details, and cross sections.</p>        |

**16. Staff Experience:**

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|--|--|------------|---|
| Firm employed by <b>Modjeski and Masters, Inc.</b>   |  |            |   |
| Name   | <b>Todd J. Stephens, PE</b>  |            | Years of relevant experience with this employer |
| Title  | Project Manager – Structures   |            | 12  |
| Degree(s) / Years / Specialization   |  | BS 2009    | Civil Engineering                               |
|  |  | MS 2015    | Engineering                                     |
| Active registration number / state / expiration date   |  | 81896 PA   | 9/30/2023                                       |
| Year registered  | 2014   | Discipline | Civil   |
| Contract role(s) / brief description of responsibilities: Mr. Stephens joined Modjeski and Masters, Inc. in 2009. He is assigned to the firm's Structural Design Section. Mr. Stephens has been experience in analysis, design, rehabilitation and rating of steel and concrete bridges, including highway, railroad, long-span and movable bridges. |  |            |   |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).  |            |   |
| 08/20 - 12/20  | <p><b>Load Rating of Fourteen Complex Bridges, Statewide, Louisiana   LADOTD</b></p> <p>Modjeski and Masters, Inc. performed plan and document retrieval, bridge inspection (as needed), analysis and load rating, sampling/instrumentation and non-destructive testing (as needed), and plan production (as needed) for 14 complex bridges. The bridge types included swing spans, bascule spans, truss spans and curved steel spans. For the analysis and load rating task, M&amp;M generated a system structural model and performing an analysis of each bridge to determine dead and live load forces in the members. For the bridge superstructures, the “Girder System” in AASHTOWare BrR software was used. For the complex bridges, a three-dimensional structural model was needed. M&amp;M also developed influence lines and COMPSTIL2 input files for complex substructures including hammerheads and inverted-T pier caps. All load rating analysis followed current AASHTO Manual for Bridge Evaluation, the LADOTD Policies and Guidelines for Bridge Rating and Evaluation, and LADOTD Bridge Design and Evaluation Manual. Mr. Stephens was part of the load rating team for this project.</p> |            |   |
| 10/17 – 12/18  | <p><b>New Broadway Bridge Design. West Sacramento, CA   Mark Thomas &amp; Company</b></p> <p>As a subconsultant, M&amp;M was responsible for the structural, mechanical, and electrical design of the new movable span. Our scope included the substructure, superstructure, and pier protection system. Phase 1 was concept development and alternatives analysis. In this phase, M&amp;M evaluated several variations of swing spans, bascule spans and vertical lift spans then make a recommendation as to the type of movable bridge that is best suited. Phase 2 and Phase 3 were preliminary and final design, respectively. In these phases, M&amp;M generated contract drawings, specifications and a construction cost estimate. Mr. Stephens conceptually designed and created cost estimates for several possible movable bridge alternatives for the new bridge. He then assisted in the conceptual evaluation and creation of a Bridge Type Selection Report.</p>  |            |   |
| 09/15 – 02/16  | <p><b>I-Street Bridge Replacement, Sacramento, CA   City of Sacramento</b></p> <p>As a subconsultant, M&amp;M was selected to design a new Sacramento River bridge. Our portion of the design extends from abutment to abutment and includes all movable components. The first phase is a conceptual study and permitting, followed by final design. This new structure will accommodate highway traffic, which currently crosses the 102-year-old I Street Swing Bridge (upper deck) and will be located on an alignment just to the North. The existing I Street Bridge will remain in place and continue to carry rail traffic (lower deck). The project is expected to cost approximately \$100 Million. Mr. Stephens created finite element models to preliminarily design several configurations of through truss lift spans and the lift towers for</p>   |            |   |



|               |   |
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|               | the vertical lift alternative. He also investigated the requirements and effects of implementing mixed highway and light rail traffic on the movable span alternatives.   |
| 06/13 - 03/14 | <b>H.009859.5: Crescent City Connection, Bridge No. 1, New Orleans, LA   LADOTD</b><br>M&M performed an inspection and LRFR load rating of the GNO #1, a 13,428-ft truss bridge with a main span of 1,575 feet. The rating included the superstructure, including gusset plates and deck, and selected substructure elements. Mr. Stephens performed the gusset plate ratings and checked the rating calculations for the pins. |




**16. Staff Experience:**

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|---|---|--|---|---|
| Firm employed by <b>Modjeski and Masters, Inc.</b>  |   |  |   |   |
| Name  | <b>Mohammad Majd, PE</b>  |  | Years of relevant experience with this employer     | 5 |
| Title   | Senior Engineering - Structures   |  | Years of relevant experience with other employer(s) | 7 |
| Degree(s) / Years / Specialization  |   | MS 2010  | Civil Engineering                                   |   |
|   |   | BS 2010  | Civil Engineering                                   |   |
| Active registration number / state / expiration date  |   | 46831 LA 09/30/2024                                |   |   |
| Year registered   | 2022  | Discipline   | Civil   |   |
| Contract role(s) / brief description of responsibilities:   |   | Bridge Design and Design & Constructability Review |   |   |
| <p>Mr. Majd has approximately 12 years of experience in bridge design, analysis, and ratings. He has completed projects for multiple agencies such as LADOTD, PennDOT, the City of Philadelphia, NJDOT, and the Port Authority of New York and New Jersey. He has experience with complex structures such as curved and highly skewed bridges, as well as smaller structures such as simply supported steel girder bridges. Mr. Majd is proficient in multiple 3-D modeling programs such as LUSAS, RISA, and STAAD. He is a licensed Professional Engineer in the states of Pennsylvania, New Jersey, and Louisiana, and holds a Bachelor and Masters degree from Drexel University. Additionally, he is a Certified Bridge Safety Inspector (CBSI).</p> |   |  |   |   |
| Experience dates (mm/yy–mm/yy)  | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |  |   |   |
| 05/20 – 01/21   | <p><b>Movable Bridge Structural, Mechanical &amp; Electrical Inspections, Statewide, New Jersey   New Jersey Department of Transportation</b><br/> This project involves performing structural, mechanical, and electrical inspections for various NJDOT Movable Bridges. Mr. Majd is serving as the Structural Senior Engineer and Team Leader for the structural inspection of several double leaf bascule and vertical lift bridges. He performed hands-on inspections, identified critical defects in the field, prepared Priority Repair Letters, and prepared inspection reports.</p>   |  |   |   |
| 01/20 - 05/21   | <p><b>Load Rating of Fourteen Complex Bridges, Statewide, Louisiana   LADOTD</b><br/> Modjeski and Masters, Inc. performed plan and document retrieval, bridge inspection (as needed), analysis and load rating, sampling/instrumentation and non-destructive testing (as needed), and plan production (as needed) for 14 complex bridges. The bridge types included swing spans, bascule spans, truss spans and curved steel spans. For the analysis and load rating task, M&amp;M generated a system structural model and performing an analysis of each bridge to determine dead and live load forces in the members. For the bridge superstructures, the “Girder System” in AASHTOWare BrR software was used. For the complex bridges, a three-dimensional structural model was needed. M&amp;M also developed influence lines and COMPSTIL2 input files for complex substructures including hammerheads and inverted-T pier caps. All load rating analysis followed current AASHTO Manual for Bridge Evaluation, the LADOTD Policies and Guidelines for Bridge Rating and Evaluation, and LADOTD Bridge Design and Evaluation Manual. Mr. Majd’s duties included performing the analysis and load rating of two steel pony-truss bridges and a double leaf bascule bridge with deck-truss approach spans. He also checked the rating of a pontoon bridge.</p>                    |  |   |   |
| 12/19 - 03/21   | <p><b>Load Rating of 354 Off System Bridge, Statewide, Louisiana   LADOTD</b><br/> Modjeski and Masters, Inc. performed plan and document retrieval, bridge inspection (as needed), analysis and load rating, sampling/instrumentation and non-destructive testing (as needed), and plan production (as needed) for 354 off system bridges including prestressed concrete bridges. For the analysis and load rating task, M&amp;M generated a system structural model and performing an analysis of each bridge to determine dead and live load forces in the members. For the bridge superstructures, the “Girder System” in AASHTOWare BrR software was used. For the complex bridges, a three-dimensional structural model was needed. M&amp;M also developed influence lines and COMPSTIL2 input files for complex substructures including hammerheads and inverted-T pier caps. All load rating analysis followed current AASHTO Manual for Bridge Evaluation, the LADOTD Policies and Guidelines for Bridge Rating and Evaluation, and LADOTD Bridge Design and Evaluation Manual. Mr. Majd’s duties included performing ratings on multiple bridges using AASHTOWare BrR and LEAP Bridge. Bridge superstructure types included concrete T-beam, concrete slab, and prestressed girder. Substructure types included concrete and timber pile bents with concrete pier caps.</p> |  |   |   |
| 04/20 - 02/21   | <p><b>Cline Avenue Bridge Review, Analysis and Construction Support, East Chicago, IN:</b></p>  |  |   |   |



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|               | <p>The Cline Avenue Bridge is 6,236-foot long precast segmental bridge that spans over several rail lines, Riley Road, and the Indiana Harbor Canal in East Chicago, IN. The new structure consists of 29 cast-in-place concrete columns that support 685 post-tensioned concrete single cell box girders segments which form the bridge's deck. Completion of this project restored entrance into the Northwest Indiana area. Modjeski and Masters, Inc. was contacted by United Bridge Partners to perform a fully independent review on the design, review of construction documents, and provide an on-site presence for completion of construction of the 1.7 mile long segmental bridge. Mr Majd's duties included performing the analysis of a 10-span unit of the bridge consisting of concrete post-tensioned box girders that utilized precast segments and balanced cantilever construction. He also performed the transverse analysis of the box girders using 3D analysis in LUSAS.</p>  |
| 09/17 - 05/22 | <p><b>City of Philadelphia., 15th Street Bridge Improvement Project, Philadelphia, PA:</b><br/>Under this On-Call TED services agreement with the City, Mr. Majd was a Structural Engineer on the project and was responsible for: designing steel bolted connections for replacement girders that frame into a steel bent; designing fence connections and anchor bolts to resist wind; checking steel girder designs; determining proposed deck elevations; checking a concrete pier cap design; checking shear stud designs for existing and replacement girders; and overseeing CAD Technicians in the development of construction drawings.</p>  |
| 12/18 - 09/22 | <p><b>City of Philadelphia., MLK Drive Bridge Study &amp; Design, Philadelphia, PA:</b><br/>Under this On-Call TED services agreement with the City, Mr. Majd served as the Deputy Project Manager for all four project phases and acts on behalf of the Project Manager as needed. During Conceptual Design, he was responsible for performing bridge live load ratings using PennDOT's BAR7 program; additionally, he performed 3D FEM analysis on the curved portions of the bridge using LUSAS. During Preliminary Engineering, Mr. Majd performed deck and overhang design for the proposed widened deck, developed preliminary design drawings, and organized the TS&amp;L package.</p>   |
| 03/17 - 02/19 | <p><b>GWB Upper Level Stage III Final Design Services for Replacement of the Main Span and Side Span Finger Joints and Deck Panels at the NY &amp; NJ Towers, New York, New York:</b><br/>The Port Authority requested that M&amp;M perform Stage III Final Design services for the complete replacement of the upper level steel finger joints, including the supporting structural steel beneath the joints, of the George Washington Bridge at the NJ and NY towers. Additional items included in the design were replacement of portions of the orthotropic steel deck panels on each side of the finger joints; replacement of the drainage troughs and flushing system underneath the finger joints; relocation of all utility facilities in the finger joint repair areas; temporary support of the joints and deck panels during construction; and priority steel repairs to the existing structural steel that support the finger joints assemblies, including replacement of the main span stringer bearings. M&amp;M prepared final design and contract documents, including contract drawings, cost estimate, specifications, and an estimated construction/staging schedule. Mr. Majd's duties included designing and developing drawings for the replacement finger joints, expansion dams, secondary floorbeam members, orthotropic deck panels, structural steel repairs, and stringer bearing replacement.</p> |
| 02/17 - 04/17 | <p><b>Grays Ferry Bridge Rehabilitation, Philadelphia, PA:</b><br/>As a Senior Engineer, Mr. Majd performed superstructure analysis and bearing design. Additionally, he evaluated different design alternatives of a retaining wall structure for the pedestrian walkway and determined their feasibility and cost effectiveness. The project involved the design of the bridge rehabilitation which included repairs to 22 existing steel pier caps and bolsters, bearings, and other structural components.</p>  |
| 03/11 - 09/14 | <p><b>City of Philadelphia., Tabor Road Bridge Rehabilitation, Philadelphia, PA:</b><br/>Under this On-Call TED services agreement with the City, Mr. Majd is serving as a Senior Structural Engineer for this project. He participated in the foundation analysis, superstructure analysis, and the rehabilitation design plans. M&amp;M was responsible for providing Final Design services for the Tabor Road Bridge Project over Tacony Creek. This included performing superstructure replacement and substructure rehabilitation services.</p>  |
| 01/20 - 05/21 | <p><b>Load Rating of Fourteen Complex Bridges, Statewide, Louisiana   LADOTD</b><br/>Modjeski and Masters, Inc. performed plan and document retrieval, bridge inspection (as needed), analysis and load rating, sampling/instrumentation and non-destructive testing (as needed), and plan production (as needed) for 14 complex bridges. The bridge types included swing spans, bascule spans, truss spans and curved steel spans. For the analysis and load rating task, M&amp;M generated a system structural model and performing an analysis of each bridge to determine dead and live load forces in the members. For the bridge superstructures, the "Girder System" in AASHTOWare BrR software was used. For the complex bridges, a three-dimensional structural model was needed. M&amp;M also developed influence lines and COMPSTIL2 input files for complex substructures including hammerheads and inverted-T pier caps. All load rating analysis followed current AASHTO Manual for Bridge Evaluation, the LADOTD Policies and Guidelines for Bridge Rating and Evaluation, and LADOTD Bridge Design and Evaluation Manual. Mr. Majd's duties included performing the analysis and load rating of two steel pony-truss bridges and a double leaf bascule bridge with deck-truss approach spans. He also checked the rating of a pontoon bridge.</p>   |

**16. Staff Experience:**

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|--|---|--------------------------------|---|---|----|
| Firm employed by <b>Modjeski and Masters, Inc.</b>   |   |                                |   |  |    |
| Name   | <b>Stacey P. Carr, PE</b>   |                                | Years of relevant experience with this employer     |   | 31 |
| Title  | Associate - Structures  |                                | Years of relevant experience with other employer(s) |   | 1  |
| Degree(s) / Years / Specialization   |   | MS 2004 Structural Engineering |   |   |    |
|  |   | BS 1990 Civil Engineering      |   |   |    |
| Active registration number / state / expiration date   |   | 26796                          | LA  | 9/30/2024   |    |
| Year registered  | 1996  | Discipline                     | Civil   |   |    |
| Contract role(s) / brief description of responsibilities: Ms. Carr has extensive experience in the rating, strengthening and design of highway, railroad, and combined highway/railroad structures, including large cantilever spans and movable bridges. Ms. Carr has overseen the gamut for rating bridges from small concrete slab spans to complex steel structures, movable bridges and gusset plates, as featured below. She is well experienced with AASHTOWare Bridge Rate (BrR) and is knowledgeable of both LFR and LRFR rating requirements. Special Training: NHI Course No. 130092, Fundamentals of LRFR and Applications of LRFR for Bridge Superstructures. |   |                                |   |   |    |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |                                |   |   |    |
| 03/21 - 05/22  | <p><b>H.009859.5 I-210 Bridge over Prien Lake Structural Rating, Calcasieu Parish   LADOTD</b></p> <p>Modjeski and Masters, Inc. performed the as-is/as-repaired LRFR of Prien Lake Eastbound &amp; Westbound Main Bridge and Approaches for a total length of over 17,000 ft. Analysis included LUSAS FEM models, AASHTOWare BrR models of continuous span girders and ratable superstructure components, girder splices for rating and use of the AISC moment Gradient Modified Cb as needed. Design and legal load capacity ratings were calculated for the girders and link joint connections of the steel plate girder spans, and for the caps of the pile bents. Ratings for the superstructure and substructure were calculated using LRFR methodology. Ms. Carr is the Project Manager who oversees and performs primary QA/QC for the load rating and analysis of this structure.</p>  |                                |   |   |    |
| 09/21 - 08/22  | <p><b>H.009859.5 Load Rating of Complex Bridges, Caddo and St. Tammany Parishes   LADOTD</b></p> <p>Modjeski and Masters, Inc. performed the existing condition LRFR of two bridges, I-20 over Spring St./LA 1 and US 190 over Bayou Lacombe, including the use of AISC Moment Gradient Modifier (Cb) as needed. The I-20 bridge is divided into three units connected through pin and hanger style expansion joints. Design and legal load capacity ratings were calculated for the girders and link joint connections of the rolled and welded plate girder spans, as well as the steel straddle bent cap at Bent 2. The US 190 Bridge is an equal arm 130’ swing span, consisting of a concrete deck supported by two non-prismatic built-up main girders and floorsystem. Existing condition load capacity ratings were calculated for superstructure elements of the swing span, as well as superstructure and substructure elements of the approach spans. AASHTOWare BrR Software and three dimensions structural models were used for dead and live load analyses. Influence lines and COMPSTIL2 input files were developed for the complex structures. Rating and contract services followed the “Bridge Load Rating, Posting, and Strengthening – Standard Operating Procedure” document. Ms. Carr is the Project Manager who oversees and performs primary QC/QA for the load rating &amp; analysis of this structure.</p> |                                |   |   |    |
| 07/02 - 08/14  | <p><b>Huey P. Long Bridge Widening and Rating   LADOTD</b></p> <p>The widening project for the HPL Bridge included new vehicular approaches on both sides of the Mississippi River consisting of three lanes plus shoulders and ramps. The project entailed replacing existing approaches while maintaining traffic through the corridor. Included elements: existing foundations, pile and drill-shaft supported piers, prestressed concrete girder spans and multiple-span steel continuous units. The plans were prepared in accordance with AASHTO LRFD Bridge Design Specifications, the BDEM and DOTD Standard Specifications for Roads and Bridges. Ms. Carr served as Superstructure Task Leader for the widening, which included coordinating the work of other engineers. She also performed work on the design and detailing for the main bridge truss widening. Ms. Carr was the project engineer during the initial phase of the superstructure construction. During the rating phase of the widened HPL Bridge, Ms. Carr managed and participated in the ratings of the approaches &amp; main bridge floorsystem, coordinated the overall rating work, and performed overall QA/QC for the project and submittals.</p>  |                                |   |   |    |
| 10/18 - 05/21  | <p><b>H.009859.5: Sunshine Bridge Load Rating After Collision Repair   LADOTD</b></p> <p>The Louisiana Route 70 Sunshine Bridge is a steel cantilever through truss bridge that carries four lanes of traffic over the Mississippi River near Donaldsonville, LA. On October 12, 2018, a barge mounted crane was traveling upstream in the western most channel of the river. There was insufficient clearance as the barge passed underneath the bridge, and the back-stay of the crane impacted the downstream bottom chord of the truss. The impact caused significant damage to a bottom chord member, tearing off the bottom plate of the box member and inducing severe out of plane distortion. With the damage</p>  |                                |   |   |    |

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|                 | documented, work on repair concepts began. M&M performed a post repair load rating in accordance with the AASHTO Manual for Bridge Evaluation. This effort included developing an As-Is/As-Repaired AASHTOWare BrR model of the main span cantilever truss including the floor system and gussets. Load rating analysis was performed for strengthened, modified or repairs main span truss members or gussets as well as members with increased or decreased dead load stress resulting from the collision or repair work. Ms. Carr was the Project manager who oversaw and performed primary QA/QC for the load rating of this complex structure.   |
| 11/19 - Ongoing | <b>H.009859.1: Load Rating of Fourteen Complex Bridges   LADOTD</b><br>M&M. is performing plan and document retrieval, bridge inspection (as needed), analysis and load rating, sampling/instrumentation, and plan production for 14 complex bridges. The bridge types include swing spans, bascule spans, truss spans and curved steel spans. For the analysis and load rating task, M&M is generating a system structural model and performing an analysis of each bridge to determine dead and live load forces in the members. For the bridge superstructures, AASHTOWare BrR software is being used. All load rating analysis will follow the AASHTO Manual for Bridge Evaluation, LADOTD BDEM and AASHTO LRFD Bridge Design Specifications. Ms. Carr is the PM who oversees & performs primary QA/QC for the load rating of the bridges.  |
| 07/19 - 05/21   | <b>H.012485.1: Load Rating of 354 Off System Bridges   LADOTD</b><br>Modjeski and Masters, Inc. is performing plan and document retrieval, bridge inspection (as needed), analysis and load rating, sampling/instrumentation and non-destructive testing (as needed), and plan production (as needed) for 354 off system bridges including prestressed concrete, reinforced concrete and steel plate girder bridges. For the analysis and load rating task, M&M is generating a system structural model and performing an analysis of each bridge to determine dead and live load forces in the members. For the bridge superstructures, AASHTOWare BrR software is being used. For the complex bridges, a three-dimensional structural model is needed. All load rating analysis will follow current AASHTO Manual for Bridge Evaluation, LADOTD Bridge Design and Evaluation Manual and AASHTO LRFD Bridge Design Specifications. Ms. Carr is the Project Manager who oversees and performs primary QA/QC for the load rating of the bridges. |
| 07/19 - 06/21   | <b>H.000303.6: Danziger Bridge Repair and Rating   LADOTD</b><br>M&M performed repair and load rating services for the Danziger Bridge, a vertical lift structure with a steel girder superstructure supported by reinforced concrete piers, and the flanking prestressed concrete approach structures. AASHTOWare Bridge Rating BrR software was used to perform load rating based on the present condition, capacity and loading of the bridge. All load rating analysis followed the AASHTO Manual for Bridge Evaluation, LADOTD Bridge Design and Evaluation Manual & AASHTO LRFD Bridge Design Specs. Ms. Carr was the Project Manager who oversaw and performed primary QA/QC for the load rating.  |
| 01/17 - 08/18   | <b>H.009859.5: Nineteen Complex Bridge Load Rating and Evaluation. Louisiana   LADOTD</b><br>M&M performed plan/document retrieval, bridge inspection and analysis, and LRFR rating of complex bridge structures, mainly movable bridges. Gusset, truss, floorsystem and substructure components were rated. Bridge inspections focused on gusset plates and existing member conditions for rating. AASHTOWare BrR was used for the ratings, which followed the AASHTO Manual for Bridge Evaluation, the LADOTD Policies and Guidelines for Bridge Rating and Evaluation, and LADOTD Bridge Design & Evaluation Manual. Ms. Carr was the Project Manager who oversaw & performed primary QA/QC for the load rating of the bridges.  |
| 02/16 - 10/17   | <b>H.009859.5: Ten Truss Bridges Load Rating and Evaluation. Louisiana   LADOTD</b><br>Modjeski and Masters, Inc. performed plan and document retrieval, bridge inspection and analysis, and load and resistance factor rating of complex bridge structures, including large cantilever trusses, vertical lifts and swing spans. Gusset, truss, floorsystem and substructure components were rated. Bridge inspections focused on gusset plates and existing member conditions for rating. AASHTOWare BrR was used for the ratings, which follow the AASHTO Manual for Bridge Evaluation, the LADOTD Policies and Guidelines for Bridge Rating and Evaluation, and LADOTD Bridge Design and Evaluation Manual. Ms. Carr was Project Manager who oversaw and performed primary QA/QC for the load rating of the bridges.   |
| 09/14 - 12/16   | <b>H.009859.5 (A): Rating and Posting of On-System State Bridges. Louisiana   LADOTD</b><br>M&M performed load rating analyses for 110 existing bridge structures using the Load and Resistance Factor Rating Method. Elements to be rated include superstructure and substructure components. Provisions in the AASHTO Manual for Bridge Evaluation as well as LADOTD Policies and Guidelines for Bridge Rating and Evaluation were followed. Ms. Carr was group leader, oversaw, and performed primary QA/QC for the load rating of the structures which included reinforced concrete, prestressed concrete and steel plate girder bridges.   |
| 02/13 - 02/15   | <b>H.009859.5: Crescent City Connection, Bridge No. 1, New Orleans, LA   LADOTD</b><br>M&M performed an inspection and LRFR load rating of the GNO #1, a 13,428-ft truss bridge with a main span of 1,575 feet. The rating included the superstructure, including gusset plates and deck, and selected substructure elements. Ms. Carr oversaw & performed primary QA/QC for the load rating of the bridge.   |

**16. Staff Experience:**

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|--|---|------------|---|-------------------|
| Firm employed by <b>Modjeski and Masters, Inc.</b>   |   |            |   |                   |
| Name   | <b>Jason W. Miles, PE</b>   |            | Years of relevant experience with this employer     | 14                |
| Title  | Associate - Structures  |            | Years of relevant experience with other employer(s) | 0                 |
| Degree(s) / Years / Specialization   |   | BS         | 2008  | Civil Engineering |
| Active registration number / state / expiration date   |   | 37773      | LA  | 09/30/2023        |
| Year registered  | 2013  | Discipline | Civil   |                   |
| Contract role(s) / brief description of responsibilities:  |   |            |   |                   |
| <p>Mr. Miles has been employed as a Design Engineer in the New Orleans office of Modjeski and Masters, Inc. since 2009. During this period, he has been engaged in multiple complex projects. The majority of his time has been spent in complex structural analysis, 3-D structural modeling, shop drawing review, assessment of steel fabricator quality control reports, performing finite element analysis using both the LUSAS and Florida Pier programs and complex load rating analysis. Mr. Miles attended the AASHTOWare Bridge Rate (BrR) meeting titled “AASHTOWare Bridge Design and Rating Software User Group Meeting” in August 2014, 2016, 2020 and 2022. He also completed NHI Course No. 130092, Fundamentals of LRFR and Applications of LRFR for Bridge Superstructures and NHI Course No. 130081, LRFD for Highway Bridge Superstructures. Mr. Miles also has experience with finite element analysis, in particular through the use of Lusas software to check AASHTOWare BrR results.</p> |   |            |   |                   |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |            |   |                   |
| 12/19 - 08/20  | <p><b>H.009859.5 US 90 Claiborne Bridge Load Capacity Rating, New Orleans, LA   LADOTD</b></p> <p>Modjeski and Masters performed a load capacity rating for the US-90 Bridge over City Streets, known locally as “Elevated Claiborne.” Bridge elements rated include reinforced slab spans, rolled stringer spans, girder-floorbeam stringer spans, and steel substructure consisting of cross girders and columns. Design and legal load capacity ratings were calculated for the current condition of the superstructure and substructure elements. The reinforced concrete slab spans, rolled steel stringer spans and girder-floorbeam-stringer spans were modeled using AASHTOWare's Bridge Rating (BrR) Version 6.8.3. The “Reinforced Concrete Slab System Superstructure” was used to model the slab spans, the “Girder System Superstructure” definition was used for the stringer spans, and the “Floor System Superstructure” definition was used to model the girder-floorbeam-stringer spans. Most spans in BrR utilized a line girder analysis, while some rolled stringer spans utilized 3D FEM analysis in BrR. Ratings for all applicable members were calculated using Load and Resistance Factor Rating (LRFR) methodology. Mr. Miles operated as a co-manager overseeing the technical aspects of the complex bridge ratings. Mr. Miles provided QA/QC, including calculation checking and report review.</p> |            |   |                   |
| 03/21 - 10/21  | <p><b>H.009859.5 I-210 Bridge over Prien Lake Structural Rating, Calcasieu Parish   LADOTD</b></p> <p>Modjeski and Masters, Inc. performed the as-is/as-repaired Load and Resistance Factor Rating (LRFR) of Prien Lake Eastbound and Westbound Main Bridge and Approaches for a total length of over 17,000 feet. Analysis included LUSAS FEM models, AASHTOWare BrR models of continuous span girders and ratable superstructure components, analysis of girder splices for rating and use of the AISC moment Gradient Modified Cb as needed. The “Girder System Superstructure” definition was used for the girder spans, and the “Floor System Superstructure” definition was used to model the continuous stringer units and floorbeams without crossframes. The steel plate girders were modeled separately from the multi-span continuous stringer floor system because of the pin and hanger arrangements. All BrR-models utilized a line girder analysis. Design and legal load capacity ratings were calculated for the girders and link joint connections of the steel plate girder spans, and for the caps of the pile bents. Ratings for the superstructure and substructure were calculated using Load and Resistance Factor Rating (LRFR) methodology. Mr. Miles provided QA/QC, including calculation checking and report review.</p>   |            |   |                   |
| 11/19 - 05/21  | <p><b>H.009859.5: Load Rating of Fourteen Complex Bridges   LADOTD</b></p> <p>Modjeski and Masters, Inc. performed plan and document retrieval, bridge inspection (as needed), analysis and load rating, sampling/instrumentation and non-destructive testing (as needed), and plan production (as needed) for 14 complex bridges. The bridge types include</p>   |            |   |                   |



|               |   |
|---------------|---|
|               | <p>swing spans, bascule spans, truss spans and curved steel spans. For the analysis and load rating task, M&amp;M generated a system structural model and performing an analysis of each bridge to determine dead and live load forces in the members. For the bridge superstructures, AASHTOWare BrR software was used. For the complex bridges, a three-dimensional structural model was needed. M&amp;M also developed influence lines and COMPSTIL2 input files for complex substructures including hammerheads and inverted-T pier caps. All load rating analysis followed current AASHTO Manual for Bridge Evaluation, LADOTD Bridge Design and Evaluation Manual and AASHTO LRFD Bridge Design Specifications. Mr. Miles operated as a co-manager overseeing the technical aspects of the complex bridge ratings. Mr. Miles provided QA/QC, including calculation checking and report review.</p>  |
| 07/19 - 05/21 | <p><b>H.000303.6: Danziger Bridge Repair and Rating   LADOTD</b><br/> Modjeski and Masters, Inc. is performed repair and load rating services for the Danziger Bridge, a steel vertical lift structure with a steel girder superstructure supported by reinforced concrete piers, and the flanking prestressed concrete approach structures. AASHTOWare Bridge Rating BrR software was used to perform load rating based on the present condition, capacity and loading of the bridge. All load rating analysis followed AASHTO Manual for Bridge Evaluation, LADOTD Bridge Design and Evaluation Manual and AASHTO LRFD Bridge Design Specifications. Mr. Miles performed analysis of the span using a 3D FEM model in LUSAS. Analysis included investigating thermal gradient effects, validating data from bridge monitoring systems, and an LRFR load rating.</p>   |
| 07/19 - 04/21 | <p><b>H.012485.1: Load Rating of 354 Off System Bridges   LADOTD</b><br/> Modjeski and Masters, Inc. performed plan and document retrieval, bridge inspection (as needed), analysis and load rating, sampling/instrumentation and non-destructive testing (as needed), and plan production (as needed) for 354 off system bridges including prestressed concrete, reinforced concrete and steel plate girder bridges. For the analysis and load rating task, M&amp;M is generated a system structural model and performing an analysis of each bridge to determine dead and live load forces in the members. For the bridge superstructures, AASHTOWare BrR software was used. For the complex bridges, a three-dimensional structural model was needed. All load rating analysis followed current AASHTO Manual for Bridge Evaluation, LADOTD Bridge Design and Evaluation Manual and AASHTO LRFD Bridge Design Specifications. Mr. Miles provided technical guidance to bridge raters involved in a variety of bridge types, including slab spans, prestressed girder spans, and grid deck on steel beam spans. Mr. Miles provided specific guidance on ratings of timber substructure elements. Ratings were performed using AASHTOWare BrR with refinements done in Excel when needed. Mr. Miles also performed general QA/QC and rating report review.</p>   |
| 10/18 - 05/21 | <p><b>H.009859.5: Sunshine Bridge Load Rating After Collision Repair   LADOTD</b><br/> The Sunshine Bridge is a steel cantilever through truss bridge that carries four lanes of traffic over the Mississippi River near Donaldsonville, LA. The three main truss spans are each about 800 feet in length and provide up to 133 feet in vertical clearance above high water. On October 12, 2018, a barge mounted crane was traveling upstream in the western most channel of the river. There was insufficient clearance as the barge passed underneath the bridge, and the back-stay of the crane impacted the downstream bottom chord of the truss. The impact caused significant damage to a bottom chord member, tearing off the bottom plate of the box member and inducing severe out of plane distortion. The member in question was a primary load path compression member, designed to carry 1,700 kips of dead load. LADOTD closed the bridge to traffic directly after the incident and engaged Modjeski and Masters to perform an emergency hands-on inspection using technical rope access techniques. With the damage documented, work on repair concepts began. M&amp;M performed a post repair load rating in accordance with the AASHTO Manual for Bridge Evaluation. This effort included developing an As-Is/As-Repaired AASHTOWare BrR model of the main span cantilever truss including the floor system and gussets. Load rating analysis was performed for strengthened, modified or repairs main span truss members or gussets as well as members with increased or decreased dead load stress resulting from the collision or repair work. Mr. Miles served as a lead engineer and structural analyst for this emergency project.</p> |
| 02/17-08/18   | <p><b>H.009859.5: Nineteen Complex Bridge Load Rating and Evaluation. Louisiana   LADOTD</b><br/> Modjeski and Masters, Inc. performed plan and document retrieval, bridge inspection and analysis, and load and resistance factor rating of complex bridge structures, mainly movable bridges. Gusset, truss, floorsystem and substructure components were rated. Bridge inspections focused on gusset plates and existing member conditions for rating. AASHTOWare BrR was used for the ratings, which follow current AASHTO Manual for Bridge Evaluation, the LADOTD Policies and Guidelines for Bridge Rating and Evaluation, and LADOTD Bridge Design and Evaluation Manual. Mr. Miles participated in the load rating analysis and reporting for this project.</p>  |

**16. Staff Experience:**

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| Firm employed by <b>Modjeski and Masters, Inc.</b>  |   |            |   |                               |
| Name  | <b>Zolan Prucz, PE, PhD</b>   |            | Years of relevant experience with this employer     | 40                            |
| Title   | Senior Technical Advisor  |            | Years of relevant experience with other employer(s) | 7                             |
| Degree(s) / Years / Specialization  |   | PhD        | 1984  | Civil Engineering, Structures |
|   |   | MS         | 1981  | Civil Engineering, Structures |
|   |   | BS         | 1976  | Civil Engineering             |
| Active registration number / state / expiration date  |   | 24019      | LA  | 3/31/2024                     |
| Year registered   | 1988  | Discipline | Civil   |                               |
| <p>Contract role(s) / brief description of responsibilities: Dr. Prucz has worked on bridge related projects since joining Modjeski and Masters, Inc. in 1983. His assignments ranged from design, evaluation and retrofit of fixed and movable bridges to evaluations of effects of vessel impact and seismic loads on bridges, and the effects of fatigue and corrosion on steel bridges. He was one of the principal designers for the Norfolk Southern North Drawspan Replacement over Lake Pontchartrain, the I-10/I-310 Interchange in New Orleans and the widening of the US 190 Mississippi River Bridge in Baton Rouge, among other projects.</p> <p>Dr. Prucz was the principal investigator for developing the "Criteria for Design of Bridge Piers Against Ship Collision in Louisiana Waterways", which was used for bridge design in Louisiana and other states from 1985 to 1991. He has designed bridge protection systems and has investigated several ship collision accidents with bridges. He was the principal investigator and project manager for a statewide study for the Louisiana DOTD whose scope was to evaluate vulnerability to vessel collision of 28 bridges in the state. Recent vessel collision related projects include bridge vulnerability assessments for New York State Bridge Authority, Oklahoma DOT, Michigan DOT and the County of Galveston, Texas, and bridge protection system designs for four bridges over the Arkansas River in Oklahoma, the I-10 Mississippi River Bridge in Baton Rouge and the I-210 Prien Lake Bridge in Lake Charles. He developed the vessel collision design criteria for movable bridges contained in the AASHTO LRFD Movable Highway Bridge Design Specifications, 2000, and co-authored the Vessel Collision Design of Bridges chapter in the Bridge Engineering Handbook (Edited by W. Chen and L. Duan), CRC Press, 1999.</p> |   |            |   |                               |
| Experience dates (mm/yy–mm/yy)  | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |            |   |                               |
| 1984 & 1999   | <p><b>Development of Vessel Collision Design Criteria and Specifications</b></p> <ul style="list-style-type: none"> <li>• Author of “Criteria for: The Design of Bridge Piers with Respect to Vessel Collision in Louisiana Waterways” prepared for the LADOTD and the FHWA, November 1984. The report was used by Louisiana and other states such as Florida until 1991, when the AASHTO Guide Specification for Vessel Collision Design became available.</li> <li>• Author of Section 4 – Vessel Collision Considerations of the NCHRP 12-44 Recommended Specifications for Movable Highway Bridges, Transportation Research Board, 1999, which was later adopted by AASHTO as a standard (AASHTO LRFD Movable Highway Bridge Design Specifications, 2000).</li> </ul> |            |   |                               |



|               |  |
|---------------|--|
| Various Years | <p><b>Ship Collision Studies performed under the direction of Dr. Prucz:</b></p> <ul style="list-style-type: none"> <li>• Vessel Collision Risk Assessment for the Mississippi River Gulf Outlet bridge, Route LA47/I-510 for the LADOTD, 1994, 1995.</li> <li>• Statewide study for the Louisiana DOTD whose scope was to evaluate the vulnerability to vessel collision of 28 bridges in the state, of which 9 are Mississippi River crossings and 6 are movable bridges.</li> <li>• NCHRP 12-44 Recommended Specifications for Movable Highway Bridges includes Section 4 - Vessel Collision Considerations</li> </ul>  |
| 1987 - 1998   | <p><b>Papers and Presentations on Vessel Collision by Dr. Prucz:</b></p> <ul style="list-style-type: none"> <li>• "Design of Bridge Piers Against Ship Collision", (Z. Prucz and W. B. Conway), in Bridges and Transmission Line Structures, (Edited by L. Tall), ASCE, New York, 1987, pp. 209-223.</li> <li>• "Ship Collision with Bridge Piers - Dynamic Effects", (Z. Prucz) presented at the 69th Annual Meeting of the Transportation Research Board, Washington, D.C., January 1990.</li> <li>• "Criteria for the Design of Bridge Fender Systems", (Z. Prucz and W. B. Conway) presented at the 3<sup>rd</sup> Biennial symposium of Heavy Movable Bridges, Nov. 12-15, 1990, St. Petersburg, Florida.</li> <li>• "Ship Collision Aspects Unique to Inland Waterways", (Z. Prucz) in Proceedings of the International Symposium on Advances in Ship Collision Analysis, Copenhagen, Denmark, May 10-13 1998.</li> <li>• "Protective Works: An Overview", (W. B. Conway) in Proceedings of the International Symposium on Advances in Ship Collision Analysis, Copenhagen, Denmark, May 10-13 1998.</li> <li>• "The Consequences of Vessel impact on the Mississippi River Bridges in New Orleans" (Z. Prucz and W. B. Conway), ASCE Structures Congress 99, New Orleans, LA.</li> <li>• "Vessel Collision Vulnerability of Bridges – Louisiana’s Perspective” (T. M. Ducote and Z. Prucz), International Bridge Conference, 1999, Pittsburgh, PA.</li> <li>• "Vessel Collision Analysis and Design", in Bridge Engineering Handbook, ed. W. Chen and L. Duan, CRC Press, 1999. (M. Knott and Z. Prucz).</li> </ul> |
| 1995 - 1998   | <p><b>Vessel Collision Vulnerability Study State Wide, Louisiana Department of Transportation and Development</b></p> <p>Work included the evaluation of 28 bridges in the State of Louisiana with respect to vessel collision. Among these bridges there were nine major Mississippi River crossings, eight through truss bridges and one cable-stayed bridge. The project included collection of vessel traffic, navigation and waterway characteristics data and substructure and superstructure bridge analyses. The analyses performed included structural, local and global bridge capacity calculations, vessel impact analysis, and risk assessments. The study also included recommendations for bridge protection and accident prevention measures.</p>  |



**16. Staff Experience**


|  |  |   |   |    |
|--|--|---|---|----|
| Firm employed by <b>Fugro USA Land, Inc.</b>             |  |   |   |    |
| Name   | <b>Eric Marx, PE</b>   |   | Years of relevant experience with this employer     | 22 |
| Title  | Vice President, Louisiana General Manager  |   | Years of relevant experience with other employer(s) | 3  |
| Degree(s) / Years / Specialization                       |  | MS / 2001 / Civil Engineering<br>BS / 1999 / Civil Engineering  |   |    |
| Active registration number / state / expiration date     |  | 31479 / LA / March 31, 2025   |   |    |
| Year registered  | 2004   | Discipline  | Civil   |    |
| Contract role(s) / brief description of responsibilities |  | Geotechnical Principal-in-Charge Mr. Marx will provide engineering review and oversight of the project tasks. |   |    |
| Experience dates (mm/yy–mm/yy)                           | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).  |   |   |    |
| 2001 – current   | Principal-in-Charge, Fugro Louisiana General Manager. Eric Marx has provided geotechnical services on transportation, government, industrial, commercial and coastal infrastructure projects since joining Fugro in 2001. He has been both engineer and engineer-of-record on some of Louisiana’s high-profile transportation projects over the last 20 years, including the I-10 Twin Span Replacement Project, John J. Audubon Bridge, and numerous task orders, as part of previous retainer contracts. Eric’s role has involved managing and executing task orders, developing and overseeing field programs, achieving and maintaining laboratory certifications and performing and reviewing geotechnical engineering analyses. Many of the projects have required access in difficult site conditions and required advanced engineering evaluation. |   |   |    |
| 01/10 – 03/17<br>08/20 - Current                         | LADOTD Statewide Geotechnical Retainer Contract, Louisiana. Mr. Marx served as principal-in charge for this program which included performing over 20 task orders for bridge structures across Louisiana with a total program cost of over \$4M. The scope of work included soil borings (on land and in water), cone penetration test (CPT), laboratory testing, engineering analysis, and design recommendations. Fugro was also retained to install geotechnical instrumentation. Mr. Marx was Principal-in-Charge, negotiated and oversaw completion of task orders, and worked with DOTD to ensure client satisfaction on deliverables.   |   |   |    |
| 04/04 - current  | Bridge Scour Analysis, Statewide Louisiana. Mr. Marx served as project engineer, project manager and is currently principal-in-charge for the project. Fugro was selected by the Louisiana Department of Transportation and Development (LADOTD), with the assistance of selected Design Consultants, in evaluating the stability of critical bridge structures across the state regarding scour susceptibility. Since 2004, Mr. Marx has supervised evaluations on over 300 bridges across Louisiana including coordination of geotechnical field investigations, laboratory testing, and Electric Cone Penetrometer Test (ECPT) soundings. Geotechnical engineering analyses included deep foundation evaluations on driven piles, drilled shafts and caissons for varying scour events and development of soil parameters.                              |   |   |    |
| 09/17 - 07/19  | Kansas Lane, Garrett Road Connector. Mr. Marx was Principal-In-Charge for Fugro and provided contract oversight for the project. Work included conducting geotechnical field investigations and geotechnical analyses for the roadway project with significant interaction with the local airport and businesses. Mr. Marx reviewed results of field and laboratory analyses and performed QA checks on deep foundation calculations, embankment settlement calculations of driven and drilled foundations and MSE Wall recommendations.   |   |   |    |

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| 2015-2019 | Livingston Parish Road Improvement Program, Livingston Parish, LA Mr. Marx Served as Principal-In-Charge. Livingston Parish funded this project to rehabilitate approximately 40 roads across the parish each year. Fugro's work included soil borings and collection of bulk samples, laboratory testing for classification and bench scale testing for cement treatment, engineering recommendations for pavement thickness and subgrade preparation, and construction materials testing observations to document compliance with plans and specifications Mr. Marx oversaw the field operations and engineering analyses. |
| 2005-2008 | Twin Spans Replacement Project, Orleans and St. Tammany Parishes, Louisiana. Mr. Marx was a Project Engineer on the project to replace the Twin Spans bridge damaged during Hurricane Katrina. Mr. Marx coordinated the field program which consisted of 30 soil borings and over 260 CPT's to depths between 100 and 190 feet in 15 feet of water. Mr. Marx helped develop the pile load testing program and performed axial and lateral pile capacity calculations using LRFD methodology.   |

**16. Staff Experience:**


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| Firm employed by <b>Fugro USA Land, Inc.</b>             |   |  |   |    |
| Name   | <b>Mike Allen, PG</b>   |  | Years of relevant experience with this employer     | 20 |
| Title  | Geoscientist  |  | Years of relevant experience with other employer(s) | 16 |
| Degree(s) / Years / Specialization                       |   | BS / 1986 / Geology<br>OSHA 40-hour HAZWOPER Supervisor  |   |    |
| Active registration number / state / expiration date     |   | 165 / LA / October 14, 2023<br>1076 / TX / June 30, 2023 |   |    |
| Year registered  | 2003  | Discipline   | Geoscientist  |    |
| Contract role(s) / brief description of responsibilities |   |  |   |    |
| Experience dates (mm/yy–mm/yy)                           | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |  |   |    |
| 2003 – Current   | Mike Allen has overseen the geotechnical field operations for high profile Fugro projects in Louisiana since 2003. He brings over 32 years of geotechnical field experience which includes the development, oversight, logging and characterization of soil exploration, all in Louisiana. His project experience covers geotechnical and environmental services for transportation, industrial, coastal, and commercial applications. As part of his duties, Mike works to determine access and equipment requirements. He has executed field programs for DOTD that included land-based trucks and ATV mounted equipment for conventional access all the way to marsh-buggy and lift-boat mounted equipment for marine access. His responsibilities include administrative and project management, coordination with drillers and CPT crews and following specific DOTD sampling protocols. |  |   |    |
| 06/21-11/21  | Interstate 10 Calcasieu River Bridge (Task Order No. H.003931). Field Manager. For this project, 72 soil borings, laboratory testing, and data reporting were performed for the main bridge structure, overpasses, and pavements. Mr. Allen provided field oversight and logging services in order to complete this project ahead of schedule and on budget.  |  |   |    |
| 11/05 – 12/08  | I-10 Twin Spans Replacement Project, Orleans and St. Tammany Parishes, Louisiana. As part of the replacement of the I-10 Twin Spans damaged during Hurricane Katrina, an extensive geotechnical data collection campaign was conducted. The program included performing over 30 Soil Borings to depths up to 200-ft below the mudline. The borings were performed in up to 15-ft of open water using lift-boat mounted equipment. Mike managed the data acquisition which required close communication with DOTD due to the accelerated schedule on the project. The project was completed on schedule which helped advance the design of the emergency project.  |  |   |    |
| 05/04 – 06/19  | Statewide Louisiana Bridge Scour Program. DOTD was performing evaluations of bridge scour Statewide. At select bridge locations, borings were performed to acquire data where gaps were noted. Mike managed field operations for this program for over 40 bridge locations which has lasted over 15 years and required access of land- and marine based equipment.  |  |   |    |
| 06/08 – 06/12<br>05/12 - 03/17<br>08/20 – Ongoing        | Statewide Louisiana Retainer Contract. DOTD has assigned over 50 task orders as part of three separate Geotechnical Retainer contracts. Mike has assisted in the coordination and execution of these task orders which included borings and CPTs in both land and marine environments. Value Added to The Statewide Geotechnical IDIQ: Mr. Allen’s decades of experience and extensive knowledge of geology in Louisiana provides the team with expertise to deliver excellence to DOTD.  |  |   |    |

**16. Staff Experience**

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| Firm employed by   | <b>C. H. Fenstermaker &amp; Associates, L.L.C.</b>   |   |                            |  |
| Name   | <b>Travis Bodin, MBA, PLS, PMP</b>   | Years of relevant experience with this employer     | 19                         |   |
| Title  | Vice President, Survey and Mapping   | Years of relevant experience with other employer(s) | 1                          |   |
| Degree(s) / Years / Specialization   | B.S. / 2004 / Industrial Technology<br>MBA / 2021 / Business Administration  |   |                            |   |
| Active registration number / state / expiration date   | PLS No. 5067 / LA / 03.31.2024   |   |                            |   |
| Year registered  | 2011   | Discipline  | Professional Land Surveyor |   |
| Contract role(s) / brief description of responsibilities   | Principal – Survey; Meets Minimum Personnel Requirement (MPR) #5   |   |                            |   |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).  |   |                            |   |
| <p>Travis Bodin, MBA, PLS, PMP has extensive surveying, management, and coordination experience. He has served as the Lead Professional Land Surveyor for projects across Louisiana. His responsibilities have included the management of surveying/ROW services, utility relocation coordination, coordinating with parish, state, and federal agencies and sub-consultants, cost estimating, scoping, scheduling and planning, resource management, and construction management services. With his background in surveying and project management, Mr. Bodin has performed and participated in multi-million-dollar projects consisting of large scale topographic and bathymetric surveys, development of high accuracy GPS networks, landowner notification and documentation, the development of DTM, infrastructure documentation, GIS integration, and process and procedure development. Mr. Bodin has conducted management duties for both field and office activities on survey and engineering projects.</p> <p>With his wide range of managerial and technical experience, Mr. Bodin was able to obtain his Project Management Professional Certification (PMP No. 2269869) which is acknowledged by agencies around the world as the leading certification for project managers. Mr. Bodin is experienced in the use of the newest versions of MicroStation, AutoCAD, and Trimble Business Center, Office 365, and Primavera 6.</p> |  |   |                            |   |
| 04/2020-ongoing  | <p><b>Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)</b> Mr. Bodin is serving as the Lead Surveyor for the Louisiana Watershed Initiative Region 4, an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. Mr. Bodin’s responsible for all aspects of surveying, data collection, and management to successfully complete an interactive, usable, and manageable hydraulic and hydrologic Region 4, which encompasses De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes in the State of Louisiana. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected, and will lead decisions regarding land use, policy, and infrastructure must now be coordinated, made, and implemented at the watershed level if flood risk is to be effectively managed.</p> |   |                            |   |
| 05/19-03/21  | <p><b>S.P. H.005967 Port of Lake Charles Rail at W. Sallier St. (Calcasieu Parish, LA)</b> Fenstermaker completed the topographic and boundary surveys, established control, processed data, reviewed title reports, established property boundaries, and mapped encumbrances for the ~0.75 miles Railroad Relocation. LADOTD survey feature codes were utilized for this project, and LADOTD right-of-way maps along with COGOWIN legal descriptions were created. Mr. Bodin is serving as Project Principal and providing QA/QC for this project.</p>  |   |                            |   |


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| 09/13 – 01/19 | <b>LADOTD Permit No. 153198, 153357, 153587: Sasol LCCP-Heavy Haul Road Engineering and Construction (LA378 &amp; LA379) (Calcasieu Parish, LA)</b> Mr. Bodin served as the Lead Surveyor in providing topographic, boundary, and route surveying to aid in the coordination with public and state agencies for the construction of a 2.4-mile roadway. Services include mapping for the acquisition of agreements between Sasol and third-party utilities, platting for acquisition and dedication of property needed for various construction activities and state agencies, and Quality Control services of construction activities that were conducted which included monument review and location mapping. Mr. Bodin was responsible for field coordination, data processing, ROW generation, servitude and ROW mapping and topo surveys. |
| 12/08 - 07/18 | <b>LADOTD Permit No. 03030387: Kaliste Saloom Road Widening, Intersection Improvements, Bridge, and CE&amp;I (LA 3073 to LA 733) (Amb. Caffery to E. Broussard Rd) (Lafayette Parish, LA)</b> Mr. Bodin served as the Surveyor Project Manager. Fenstermaker performed the topographic survey of all cross street and road tie-ins, cross sections for the purpose of an existing elevation DTM and parcel boundaries effected by the ROW. Mr. Bodin was responsible for field crew coordination, topo/boundary surveys, ROW plats, monuments, data processing, plats and legal descriptions.  |
| 12/17 – 08/18 | <b>City of Carencro 2018 Asphalt Overlay (Lafayette Parish, LA)</b> Fenstermaker was contracted to provide surveying, design, utility coordination, temporary traffic control and construction administration and inspection. The project was located along several different roadways within the City. The planned construction includes milling, overlay and patching along approximately 2,350-ft. of Hector Connolly Road, 1,250-ft. along W. Butcher Switch Road, and 290-ft along Guilbeau Road. The project is following LADOTD Road Design Manual and MUTCD standards and procedures. Mr. Bodin served as Survey Principal.  |
| 02/20-12/20   | <b>East Delacroix Marsh Creation and Terracing (BS-37) Project, Breton Sound (St. Bernard Parish, LA)</b> This CWPPRA funded project aims to create and nourish 406 acres of marsh and construct approximately 12,950 linear feet of terraces. If constructed, this project would help to protect the community of Delacroix, Louisiana from storm surge. Fenstermaker was tasked by CPRA to perform topographic, bathymetric, and hydrographic surveys of the access and pipeline corridors, marsh creation, terracing and borrow areas. Fenstermaker’s scope also includes a geophysical survey and archeological survey of the borrow area. Mr. Bodin served as survey manager.   |
| 2017-2020     | <b>Queen Bess Island Restoration (BA-202) Project (Jefferson Parish, LA)</b> Survey Technician Fenstermaker is the Prime consultant for CPRA’s Queen Bess Island Restoration project. On this task, Fenstermaker provided a topographic survey to locate existing levees, rock dives, pool areas, cuts and trenasses. Mr. Bodin served as the survey manager on this project.  |

**16. Staff Experience**

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| Firm employed by   |   | <b>C. H. Fenstermaker &amp; Associates, L.L.C.</b>  |                            |  |
| Name   | <b>Chris Harlin, PLS, EI</b>  | Years of relevant experience with this employer     | <1                         |   |
| Title  | Surveyor  | Years of relevant experience with other employer(s) | 17                         |   |
| Degree(s) / Years / Specialization   |   | B.S. / 2005 / Civil Engineering                     |                            |   |
| Active registration number / state / expiration date   |   | PLS No. 5281 / LA / 03.31.2025                      |                            |   |
| Year registered  | 2022  | Discipline  | Professional Land Surveyor |   |
| Contract role(s) / brief description of responsibilities   |   | Quality Control - Survey                            |                            |   |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |   |                            |   |
| <p>Christopher “Chris” Harlan, Jr., PLS, EI is a Surveyor I in Fenstermaker’s Baton Rouge office and has over 17 years of experience. Mr. Harlan’s experience includes processing field data; drafting survey plats, legal descriptions, and ALTA surveys; preparing permits for various regulatory bodies such as DOTD, Levee Boards, Corps of Engineers and railroad permits; performing topographic and hydrographic surveys, pipeline route surveys, and containment volume surveys; communicating with and providing information to clients during the course of survey projects; interpreting maps, drawings, plats, sketches, field books and legal descriptions; performing online and stand-up courthouse and highway right-of-way research; operating Trimble equipment and Trimble Business Center software; training field personal on new equipment and proper survey procedures; site visits to assist in job estimating costs; calculating survey project duration; maintaining survey equipment and supplies for several survey crews; ensuring safety supplies are in compliance with various safety programs; and working with survey crews to perform slab surveys, flood certificate surveys, curb setbacks, grade determinations, set drainage and property corners, boundary surveys, and traffic control surveys. At Fenstermaker, he is currently responsible for assisting with estimating and preparing proposals, developing a scope of work for the survey crews, ensuring that the field work performed meet the needs of the clients, preparing the required drawings, and ensuring that the final product meets the needs of the client. He is also experienced in the following software: AutoCAD Land Development, Carlson Survey 2018®, Adobe Photoshop®, Microsoft Office 365®, Outlook®, Trimble Business Center®, Starnet®, Hypack®, SonarWiz®, Global Mapper, Microstation, Civil 3d, and Corpscon®.</p> |   |   |                            |   |
| 03/23-ongoing  | <p><b>Coulee Ile des Cannes-L8C Regional Detention Facilities Phase 1 (Lafayette Parish, LA)</b> The City of Scott selected Fenstermaker to provide professional engineering services for the L8C detention facilities project. These services included data gathering, technical analysis, completion of an H&amp;H study, the development of design documents, project permitting, and the completion of an Environmental Assessment (EA) to determine project eligibility for HMGP funding. Mr. Harlan processed survey data and prepared data files for design, worked on the property boundary, and researched conveyance records to adjust the boundary where needed. He also created the boundary, surface, and cross sections for the drawings, drafted plan and profile sheets, and worked with the Parish to identify the approximate location of the 12-inch water line.</p> |   |                            |   |
| 10/22-ongoing  | <p><b>Amoco Road Bridge (Calcasieu Parish, LA)</b> Fenstermaker will provide pre- and post-construction surveying services to the Calcasieu Parish Police Jury on the Amoco Road Bridge project located in Ward 2. Services include survey staking prior to construction for right-of-way/utility relocation/driveway relocations. During and post construction, survey services include but are not limited to identification and re-establishment of horizontal and vertical control points, confirm horizontal alignment, elevation checks for new drainage structures, bridge element checks, verification of as-built pile cutoff elevations, and staking</p>  |   |                            |   |

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|             | of ROW/easements for the project. Mr. Harlin's duties include assisting with identifying and giving a possible solution to the control issue at the site.   |
| 11/22-12/22 | <b>New Providence Well No. 4 (Calcasieu Parish, LA)</b> Fenstermaker will provide a topographic survey and boundary survey of the site for the Calcasieu Parish Police Jury. Services include performing a topographic survey and boundary survey of the site. Mr. Harlan's duties included creation of the job scope for the survey crew, processing and creation of the topographic plats for the client. |

**16. Staff Experience**

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| Firm employed by  |  | <b>C. H. Fenstermaker &amp; Associates, L.L.C.</b>  |                            |  |
| Name  | <b>Justin Bordelon, PLS</b>  | Years of relevant experience with this employer     | 17                         |   |
| Title   | Manager, Surveyor  | Years of relevant experience with other employer(s) | 0                          |   |
| Degree(s) / Years / Specialization  |  | B.S. / 2009 / Business Administration               |                            |   |
| Active registration number / state / expiration date  |  | PLS 5271 / LA / 03.31.2024                          |                            |   |
| Year registered   | 2021   | Discipline  | Professional Land Surveyor |   |
| Contract role(s) / brief description of responsibilities  |  | Hydrographic Survey                                 |                            |   |
| Experience dates (mm/yy–mm/yy)  | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).  |   |                            |   |
| Justin Bordelon, PLS is a Professional Land Surveyor. His initial surveying work included performing underwater acoustic investigations and hydrographic survey. As he gained more experience, Mr. Bordelon became the underwater acoustic investigation manager and worked on many projects, including an inspection of over 100 bridges for the Louisiana Department of Transportation and Development. He then became a Survey Crew Manager and managed crews in Lafayette, Shreveport, and Midland, TX. Mr. Bordelon currently coordinates and supervises activities of field and office personnel for remote sensing projects. He also acts as Project Manager and assists in pre-project planning and post data collection analysis. Additionally, he is responsible for client interaction and coordination. |  |   |                            |   |
| 04/22-ongoing   | <b>Louisiana Terminal Site Topographic Survey and Utility Mapping (St. Bernard Parish, LA)</b> The Port of New Orleans selected Fenstermaker to perform topographic survey and utility mapping services for use in conceptual designs and permit applications for a port terminal project. The topographic survey will be performed using aerial LiDAR and orthorectified aerial imagery. Fenstermaker will perform a bathymetric survey of the wharf project survey area and a magnetometer survey within the limits of the bathymetric survey. For the utility mapping portion of the project, Fenstermaker will obtain readily available data from utility owners on underground utilities including water, sanitary sewer, storm drainage, electrical, gas, telephone, streetlight, and bridge. Mr. Bordelon is serving as Project Manager, has coordinated site visits, managed project planning and scheduling, reviewing control network, acquiring DOTD permitting for deep rod monuments, and coordinating field crews, reviewing collected data, and preparing reports and final deliverables. |   |                            |   |
| 07/20-08/20   | <b>Pointe-a-La-Hache Ferry Landings (Plaquemines Parish, LA)</b> The project consisted of performing a rehabilitation of the Pointe-La-Hache East Bank and West Bank Ferry Landings for the ferry crossing the Mississippi River. The rehabilitation includes the replacement of the existing Ramp Bridge and its substructures and foundations, replacement of the existing Ramp Bridge lift towers, replacement of the existing pile and chain dolphins, and all associate roadway tie-ins and site development. As a sub to Modjeski and Masters, Fenstermaker performed sidescan sonar for the hydrographic survey of the ferry landings to support the design of the rehabilitation. Mr. Bordelon performed quality control on the collected sidescan and MS1000 data, processed data, performed a mosaic analysis and processed mosaic files, and prepared deliverables for the client.  |   |                            |   |
| 07/20-05/22   | <b>Lake Maurepas Diversion Canal Survey (St. John the Baptist Parish, LA)</b> Mr. Bordelon served as the Project Manager to survey the Lake Maurepas Diversion Canal from the Mississippi River to the Maurepas Swamp. This project included, multibeam, single-beam and magnetometer survey on the Mississippi River, a complete topographic survey along the diversion canal route from the Mississippi River to Interstate 10 utilizing LiDAR, Photogrammetry and Conventional  |   |                            |   |



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|             | Surveying methods. Tasks included coordination with AECOM, CPRA, Marathon, coordinating and scheduling field crews, overseeing office data processing and deliverable generation.   |
| 11/20-05/21 | <b>New Orleans Outfall Canals Survey (SLFPA) (Orleans Parish, LA)</b> Mr. Bordelon served as the project manager to map out the New Orleans Outfall Canals utilizing Multibeam and LiDAR technology for erosion detection and monitoring. Tasks included coordination with the Flood Protection Authority, coordinating and scheduling field crews, overseeing office data processing and deliverable generation.   |
| 03/21-09/21 | <b>LSU University Lakes Project (University Lakes/CSRS) (East Baton Rouge Parish, LA)</b> Fenstermaker performed bathymetric, topographic and stump identification surveys in preparation dredge the six LSU lakes. Mr. Bordelon served as the Project Manager and coordinated and supervised the activities of field and office personnel. He also coordinated with the client and LSU on the project's progress and scheduling.   |
| 11/19-04/20 | <b>Third Coast Midstream - Hurricane Barry NTL &amp; DOC Survey</b> Fenstermaker was contracted to provide a Hydrographic Survey for Third Coast Midstream to check for any exposed pipelines or damaged subsea tie-ins after the Hurricane Barry Event for pipelines in Vermilion Bay, West Cote Blanche Bay, East Cote Blanche Bay and the Gulf of Mexico. The pipeline owners included AMID (Seacrest), Henry Gas High Point, and Panther Operating. Fenstermaker imaged approximately 152 miles along the pipeline corridors with a sidescan sonar, magnetometer, echosounder and RTK. Mr. Bordelon served as the project manager and supervised all field and office activities.   |
| 06/18-10/18 | <b>Port of Lake Charles – Docks 4 – 9 (Calcasieu Parish, LA)</b> Fenstermaker provided sonar drops, imagery and profiling for bulkheads and piling structures for multiple dock at the Port of Lake Charles. Mr. Bordelon was project manager and coordinated all field and office activities.  |
| 10/22       | <b>Chilhowee Dam Survey (Blount County, TN)</b> Fenstermaker used a multi-beam bathymetry sonar for the Tailrace and downstream areas of this hydroelectric dam. UAI supplied the boat for the survey activities. The sonar was used to produce a 3D point cloud model, to establish current conditions of the structures, and to establish a 3D Digital Baseline for future inspections. This data enabled the client to determine changes in the area over time. Fenstermaker also deployed a fiber-optic tethered underwater ROV (Remotely Operated Vehicle) to capture high-definition underwater photography of any scour or undermining conditions along the tailrace concrete structure, including the training walls and rip-rap embankment. Mr. Bordelon served as the project manager and was responsible for coordinating field crews, providing survey support, and reviewing data. |
| 10/22-12/22 | <b>GRDA Salina &amp; Pensacola Dam Survey (Mayes County, OK)</b> Fenstermaker served as a sub-consultant to UAI and performed all advanced technologies services for the project. UAI performed multibeam, Sidescan Sonar, and LiDAR data collection along the upstream and downstream sides of the Salina Dam and on the upstream side of the Pensacola Dam. Mr. Bordelon served as Fenstermaker's project manager and was responsible for coordinating field crews, processing data, reviewing data, and preparing contour maps and project deliverables.   |

**16. Staff Experience**

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| Firm employed by   |  | <b>C. H. Fenstermaker &amp; Associates, L.L.C.</b>              |  |
| Name   | <b>Bradford Millett, PLS, EI</b>   | Years of relevant experience with this employer                 | 10   |
| Title  | Surveyor   | Years of relevant experience with other employer(s)             | 0  |
| Degree(s) / Years / Specialization   |  | B.S. / 2014 / Civil Engineering,                                |  |
| Active registration number / state / expiration date   |  | PLS No. 5245 / LA / 03.31.2025   EI No. 32848 / LA / 09.30.2024 |  |
| Year registered  | 2020   2016  | Discipline  | Professional Land Surveyor   Engineer Intern |
| Contract role(s) / brief description of responsibilities   |  | Topographic Survey  |  |
| Experience dates (mm/yy–mm/yy)   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).  |   |  |
| Bradford Millett, PLS, EI is a Professional Land Surveyor at Fenstermaker whose responsibilities consist of field crew coordination, data collection and processing, preliminary layout and design of boundary and right of way plats, ALTA surveys and Development and Planning subdivision platting process. Her experience also includes project management as well as public meetings, client relations, utility coordination, and other components associated with surveying services. Ms. Millett is also responsible for the preparation of proposals for the Engineering, Advanced Technologies and Surveying Divisions. |  |   |  |
| 01/21-ongoing  | <b>IDIQ Contract for Louisiana Watershed Initiative (LWI)–Region No. 4</b> Fenstermaker was the prime consultant for this unprecedented project that will manage the future flood risk in Louisiana through watershed-based solutions. Fenstermaker is responsible for various tasks including data collection, data gap analysis, surveying, drone imaging, and GIS services to successfully complete interactive, usable, and manageable hydraulic and hydrologic models for Region 4. Ms. Millett served as Survey Project Manager.   |   |  |
| 03/20-11/21  | <b>Hanks Dr/Landis Dr Ped Improvements, Phase 1 &amp; 2 (East Baton Rouge Parish, LA)</b> Hanks Drive and Landis Drive are neighborhood streets in northern Baton Rouge, off Airline Hwy (US 190) north of Greenwell Springs Road (LA 37). This area experiences a high volume of pedestrian and bicycle traffic even in the absence of sidewalks. Fenstermaker provided topographic surveys and ROW services for Phase 1 and Phase 2 of the project, respectively, and those surveys were completed in accordance with LADOTD and MovEBR Standards ahead of schedule. Ms. Millett was responsible for completing the topographic survey, processing data, coordination with field crews, establishing project control, producing LADOTD deliverables, as well as producing the CAD file for the Engineer. |   |  |
| 05/19-03/21  | <b>S.P. H.005967 Port of Lake Charles Rail at W. Sallier St. (Calcasieu Parish, LA)</b> Fenstermaker completed the topographic and boundary field surveys, established control, post-processed data, reviewed title reports, established property boundaries and mapped encumbrances for the approximately 0.75-mile Railroad Relocation for the Port of Lake Charles. LA DOTD survey feature codes were utilized for this project, and LADOTD Right of Way maps along with COGOWIN legal descriptions were created. Ms. Millett served as the Project Manager for this project.   |   |  |
| 02/18-04/20  | <b>Churchpoint Road at Roddy Road Roundabout Study, Design, and Redesign (Ascension Parish, LA)</b> Fenstermaker completed a roundabout study at Churchpoint Road and Roddy Rd. The study was completed in compliance with “EDSM VI.1.1.5, Roundabout Study and Approval.” Following LADOTD’s approval, Fenstermaker began final design of the roundabout. The traffic analysis included utilization of the software SIDRA to compare a stop-controlled intersection, signalized intersection, and roundabout. Safety data was collected for a three-year period and analyzed for correctible crashes  |   |  |



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|             | at the intersection. Ms. Mille coordinated with survey crews, processed data, completed preliminary boundary layouts, and developed right of way maps for this intersection.   |
| 09/13-10/19 | <b>Fluor – Sasol LCCP-Heavy Haul Road (LA378 &amp; LA739) (Calcasieu Parish, LA)</b> This was a \$12.9 million contract with Fluor for engineering and consulting services which include the design of a 1.5-mile heavy haul route that will be utilized to transport oversized modules from the Calcasieu River to the proposed plant site in Westlake, Louisiana. Ms. Millett was responsible for topographic and boundary data collection and data processing, as well as the generation of Louisiana Department of Transportation and Development Right of Way Maps for the 1.5-mile corridor to acquire servitudes and right of ways. She was also in charge of utility coordination for the relocation of AT&T lines throughout the route.   |
| 08/20-12/20 | <b>Lake Maurepas Diversion Canal Survey (St. John the Baptist Parish, LA)</b> This survey project was from the Lake Maurepas Diversion Canal from the Mississippi River to the Maurepas Swamp. This project included, multibeam, single-beam and magnetometer survey on the Mississippi River, a complete topographic survey along the diversion canal route from the Mississippi River to Interstate 10 utilizing LiDAR, Photogrammetry and Conventional Surveying methods. Ms. Millett assisted with coordination of Louisiana One Call, pipeline representatives, and utility companies, as well as data collection, quality control/submittal of exhibits and client coordination. Ms. Millett also performed QA/QC and project coordination and acts as Project Manager to ensure deliverables were delivered on time.  |
| 07/13-08/21 | <b>Apollo Road (LA 93) Extension to Dulles Drive – Roadway &amp; Water/Sewer Project (Lafayette Parish, LA)</b> Fenstermaker performed all topographic surveying of cross streets and road tie-ins, cross sections for the purpose of an existing elevation DTM, and locations of all parcel boundaries effected by the proposed right of way. Ms. Millett created the plats for the acquisition of servitudes and right of ways.  |
| 02/19-05/21 | <b>Calcasieu Parish Regional (HUC 8) Watershed Modeling and Planning (Calcasieu Parish, LA)</b> Fenstermaker was contracted to perform the following tasks for this project: one and two-dimensional hydrologic and hydraulic numerical modeling (using HEC-RAS and HEC-HMS), website development (which encompasses a GIS mapping engine), project management (which includes public and stakeholder meetings), pre-planning activities (including the development of a process to document key stakeholder insights, a clear mission and goals for the desired future drainage conditions, and a watershed selection matrix), inventory of various drainage attributes and data (which include a GIS parish wide floodplain extents database, watershed land use, LIDAR and topographic data collection, receptive loss and flooded properties inventory, previous studies and projects, future projects, water quality and asset inventory), benchmarking, preparation of a drainage infrastructure watershed report card, master plan development, implementation and monitoring, and development of street level drainage projects. Ms. Millett was responsible for managing the survey field crews, processing of all field data and supporting documents associated with the bridges, culverts, and critical structures throughout the hydraulic impacts of proposed drainage improvement activities utilizing the survey data collected and modeling software on the following drainage systems: Bayou Parc Perdu and Norris Branch Canal (Channel System No. 1), Deblanc Coulee and Bayou Petit Anse Canal (Channel System No. 2), and Delahoussaye Canal (Channel System No. 3). |

**16. Staff Experience:**

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| Firm employed by <b>Marrero, Couvillion &amp; Associates, LLC</b> |   |   |   |    |
| Name  | <b>Orien Butler P.E.</b>  |   | Years of relevant experience with this employer     | 12 |
| Title   | Electrical Engineer   |   | Years of relevant experience with other employer(s) | 10 |
| Degree(s) / Years / Specialization                                |   | B.S. / 2003 / Electrical Engineering                                      |   |    |
| Active registration number / state / expiration date              |   | #38553 / LA / 9-30-23   |   |    |
| Year registered   | 2013  | Discipline  | Electrical Engineering                              |    |
| Contract role(s) / brief description of responsibilities          |   | Sr. Electrical Engineer / Power and Lighting/Navigational Lighting Design |   |    |
| Experience dates (mm/yy–mm/yy)                                    | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).   |   |   |    |
| 12/06 - 06/08   | <b>LADOTD - SP# 450-11-0048, I-10, LA 30 and LA 44 Interchanges, Gonzales, LA</b> – Sr. Electrical Engineer - Designed the lighting system for two LADOTD interchanges in Gonzales, LA. Designed photocell cabinet controlled high mast lighting to meet required illumination levels for I-10 on and off ramps at both LA 30 and LA 44.  |   |   |    |
| 08/07 - 02/09   | <b>LADOTD - SP# 454-03-0069, I-12/Airport Road Interchange, Hammond, LA</b> – Sr. Electrical Engineer - Designed the lighting system for a LADOTD interchange in Hammond, LA. Designed photocell cabinet controlled low mast lighting to meet required illumination levels at I-12 on and off ramps at Airport Road.  |   |   |    |
| 12/06- 11/13  | <b>LADOTD - SP# 450-15-0103, Interstate Highway Lighting (DOTD) at the I-10, Causeway Blvd. Interchange, Jefferson Parish, LA</b> – Sr. Electrical Engineer - Designed the lighting system for this \$35.6 million project involving the addition of five dedicated ramps at the I-10/Causeway Boulevard interchange. Designed photocell cabinet controlled low mast and high mast lighting to meet required illumination levels, including new loop and ramp structures.   |   |   |    |
| 01/12 - 03/14   | <b>LADOTD - SP# 700-99-0429, Bayou LaLoutre Bridge Rehabilitation, Yscloskey, LA</b> – Sr. Electrical Engineer - Responsible for the complete electrical rehabilitation of an existing DOTD movable bridge facility. Conducted the electrical inspection of the movable bridge facility and made recommendations for power and lighting system rehabilitation, replacement of traffic gates, navigational lights, installing traffic signals, emergency power generation, operator house, and utilities building. Included the design of new lighting, panels, switchboards, and control system for the bridge system (including the wound rotor motor used for movable bridge operation). The design was expanded to include a new Operator House structure (2-story) which was requested by the DOTD. |   |   |    |
| 01/13 - 05/15   | <b>LADOTD - SP# 829-32-0010/H.008145, LA-1 Relocated, Golden Meadow to Port Fourchon, LA</b> – Sr. Electrical Engineer - The LA 1 Relocated project will provide an 18-mile, fully access controlled, elevated highway on a new location between Golden Meadow (LA 3235) and Port Fourchon (LA 3090). Performed the lighting design for Phase 2A, B, C which involved approximately 9 miles of two-lane, elevated highway from Leesville to Golden Meadow (LA 3235). The scope of work also included the design of electrical and controls infrastructure for ITS equipment and new toll booths along the route.  |   |   |    |

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| 11/16 - 05/18 | <b>LADOTD - SP# H.012422, I-110 at Terrace Avenue, Baton Rouge, LA</b> – Sr. Electrical Engineer - Designed the lighting system for a new \$8.8 million ramp project connecting I-110 to Terrace Avenue at Baton Rouge. Designed low mast lighting to meet required illumination levels on the ramp and underpass lighting at the interchange.  |
| 01/17 - 05/18 | <b>LADOTD - SP# H.012874, I-55/LA-22 Interchange, Tangipahoa Parish, LA</b> – Sr. Electrical Engineer - Designed the lighting system for an interchange in Tangipahoa Parish, LA. Designed high mast and low mast LED lighting to meet required illumination levels at the interchange.   |
| 06/18 – 11/18 | <b>LADOTD - SP# H.009730.5, LA 39 Judge Seeber Bridge Over Inner Harbor Canal Inspection New Orleans, LA</b> – Sr. Electrical Engineer - Inspection and review of newly constructed bridge electrical system, navigational lighting and function of aesthetic lighting, controls and all related components. Observation/oversight of acceptance tests and generation of report with analysis and suggestions for remedy of any problems discovered during inspection.  |
| 01/19-02/19   | <b>LADOTD - SP# H.011111, I-49 Maintenance &amp; Aesthetic Lighting Installation Inspection Shreveport, LA</b> – Sr. Electrical Engineer - Job Description: Inspection and review of condition of electrical power system and all related components. Observation/oversight of preventive maintenance tests and generation of report with analysis and suggestions for remedy of any problems discovered during inspection.   |
| 08/14 - 05/15 | <b>LADOTD - SP# H.010882, Harvey Canal Tunnel Renovation, Harvey, LA</b> – Sr. Electrical Engineer - Responsible for the complete electrical rehabilitation of an existing DOTD bridge facility. Designed new lighting in the tunnel as well as interior equipment and personnel rooms, panels, switchboards and standby power systems (UPS and Generator), a new fire alarm and CCTV system.   |
| 08/16-07/21   | <b>New Orleans Municipal Yacht Harbor - New Orleans, Louisiana</b> – Marrero, Couvillon & Associates provided Mechanical, Electrical, Plumbing and Fire Protection engineering services to the prime Marine Engineering firm for the renovation of the City of New Orleans Municipal Yacht Harbor. New floating concrete docks with approximately 500 boat slips were installed, complete with electrical, water and fire protection utilities for each slip. A new Comfort Station (restrooms) with mechanical and electrical utilities was constructed as well. |

**16. Staff Experience:**

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| Firm employed by <b>Marrero, Couvillon &amp; Associates, LLC</b> |  |   |                        |
| Name   | <b>Christian Schade, P.E.</b>  | Years of experience with this firm/employer         | 6                      |
| Title  | Sr. Electrical Engineer  | Years of experience with other firm(s)/employer(s)  | 24                     |
| Degree(s) / Years / Specialization                               |  | Bachelor of Science / 1993 / Electrical Engineering |                        |
| Active registration number / state / expiration date             |  | LA License No. 32483 Expiration Date 9/30/2022      |                        |
| Year registered  | 2006   | Discipline  | Electrical Engineering |
| Contract role(s) / brief description of responsibilities         |  | Electrical Engineer – Electrical Engineering Design |                        |
| Experience dates (mm/yy–mm/yy)                                   | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc.  |   |                        |
| 07/17 – 11/20  | <b>I-10 and 73 – Design Build</b> – Electrical Engineer - Provide electrical engineering and design for lighting on the I-10 Widening from Highland to LA 30 design-build project.   |   |                        |
| 08/16 – 07/20  | <b>Bayou LaLoutre Bridge Rehabilitation</b> – Electrical Engineer - Provided complete electrical rehabilitation on the vertical lift bridge.   |   |                        |
| 08/16-07/21  | <b>New Orleans Municipal Yacht Harbor - New Orleans, Louisiana</b> – Marrero, Couvillon & Associates provided Mechanical, Electrical, Plumbing and Fire Protection engineering services to the prime Marine Engineering firm for the renovation of the City of New Orleans Municipal Yacht Harbor. New floating concrete docks with approximately 500 boat slips were installed, complete with electrical, water and fire protection utilities for each slip. A new Comfort Station (restrooms) with mechanical and electrical utilities was constructed as well.  |   |                        |
| 04/18 – 02/20  | <b>Port of New Orleans - France Road</b> – North, Roadway and Drainage Improvements – Electrical Engineer - MCA provided the electrical and mechanical engineering services for the roadway and drainage improvements.   |   |                        |
| 11/16 – 6/17   | <b>Louis Armstrong New Orleans Airport International Airport Pavement Remediation at Eastern Side of Runway 11-29, Kenner, Louisiana</b> – Electrical Engineer - Electrical design services for Pavement Remediation of sag in existing runway pavement on the eastern side of Runway 11-29 near Taxiway Alpha at the airport.   |   |                        |
| 04/18 – 02/4/19  | <b>City of New Orleans - Howard Avenue Extension (Loyola Avenue to LaSalle Street) New Orleans, LA</b> – Sr. Electrical Engineer - Marrero, Couvillon & Associates is responsible for the Electrical Services for the Howard Avenue Extension. Work includes revising roadway lighting from high pressure sodium lights to LED lights per new City of New Orleans Standards. Revisions include changing light fixtures, downsizing electrical conductors and revising drawings including bill of materials. Performing lighting calculations and following illumination guidelines per the latest IES roadway lighting recommended practices issued in 2014. |   |                        |

**16. Staff Experience:**

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| Firm employed by <b>Marrero, Couvillon &amp; Associates, LLC</b>  |  |            |   |    |
| Name  | <b>Gregory DeCoursey, AIA</b>  |            | Years of experience with this firm/employer                 | 27 |
| Title   | Architectural Engineer   |            | Years of experience with other firm(s)/employer(s)          | 19 |
| Degree(s) / Years / Specialization  |  |            | B. Arch / 1977 / Architecture; M.Arch / 1982 / Architecture |    |
| Active registration number / state / expiration date  |  |            | #2620 / LA / 12.31.2021                                     |    |
| Year registered   | 1980   | Discipline | Architecture  |    |
| Contract role(s) / brief description of responsibilities  |  |            |   |    |
| 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>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).   |            |   |    |
| 01/14-Present   | <b>St. Tammany Parishes, U.S. 11 Bridge Over Lake Pontchartrain Rehabilitation - Orleans.</b> 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   | <b>Lafourche Parish, W. Larose Vertical Lift Rehabilitation -Route: LA-1, Larose, LA.</b> 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   | <b>Louisiana DOTD, 4th Street Harvey Bridge Rehabilitation, Jefferson Parish, LA.</b> 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   | <b>Louis Armstrong New Orleans International Airport, Airfield Lighting Vault, Kenner, LA</b> 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.   |            |   |    |
| 3/19-Present  | <b>ExxonMobil Refinery, Roof Rehabilitation Projects – Multiple Buildings, Baton Rouge, LA.</b> Architect for the design of a roofing replacement and rooftop mechanical equipment at critical facilities in the refinery. Phasing considerations were critical to avoid disruptions to production.  |            |   |    |
| 9/07-11/18  | <b>AT&amp;T, Addition to Central Office, Marksville, LA.</b> Architectural design for an addition to a telephone switching facility in Marksville. Telephone company standards utilized for design process, including redundant roofing systems, installed to protect switching equipment.   |            |   |    |

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|--------------|---|
| 3/04 – 11/06 | <b>Bellsouth, Re-roofing of Telephone Company Facilities in Mississippi and Georgia .</b> Design and preparation of construction documents for re-roofing of 18 buildings that house telephone switching equipment and support facilities   |
| 10/07-4/12   | <b>Louisiana Facility Planning &amp; Control, HVAC Replacement at Villa Feliciana Medical Complex, Jackson, LA.</b> Design for architectural modifications required to accommodate installation of complete new HVAC and electrical systems at this state hospital.   |
| 08/16-07/21  | <b>New Orleans Municipal Yacht Harbor - New Orleans, Louisiana –</b> Marrero, Couvillon & Associates provided Mechanical, Electrical, Plumbing and Fire Protection engineering services to the prime Marine Engineering firm for the renovation of the City of New Orleans Municipal Yacht Harbor. New floating concrete docks with approximately 500 boat slips were installed, complete with electrical, water and fire protection utilities for each slip. A new Comfort Station (restrooms) with mechanical and electrical utilities was constructed as well. |



**16. Staff Experience:**

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| Firm employed by <b>Marrero, Couvillon &amp; Associates, LLC</b>   |   |  |                        |
| Name   | <b>Brian T. Miller, P.E.</b>  | Years of experience with this firm/employer        | 9                      |
| Title  | Sr. Mechanical Engineer   | Years of experience with other firm(s)/employer(s) | 29                     |
| Degree(s) / Years / Specialization   |   | B.S. / 1986 / Mechanical Engineering               |                        |
| Active registration number / state / expiration date   |   | #26080 / LA / 9.30.2023                            |                        |
| Year registered  | 1983  | Discipline   | Mechanical Engineering |
| Contract role(s) / brief description of responsibilities   |   |  |                        |
| Mr. Miller has over 35 years of engineering experience in mechanical engineering, project engineering and project management. Mr. Miller 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>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).  |  |                        |
| 05/15-Present  | <b>St. Tammany Parishes, U.S. 11 Bridge Over Lake Pontchartrain Rehabilitation – Orleans, LA</b> -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  | <b>Lafourche Parish, W. Larose Vertical Lift Rehabilitation -Route: LA-1, Larose, LA.</b> -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  | <b>Louisiana DOTD, 4th Street Harvey Bridge Rehabilitation, Jefferson Parish, LA.</b> - 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.  |  |                        |
| 08/16-07/21  | <b>New Orleans Municipal Yacht Harbor - New Orleans, Louisiana</b> – Marrero, Couvillon & Associates provided Mechanical, Electrical, Plumbing and Fire Protection engineering services to the prime Marine Engineering firm for the renovation of the City of New Orleans Municipal Yacht Harbor. New floating concrete docks with approximately 500 boat slips were installed, complete with electrical, water and fire protection utilities for each slip. A new Comfort Station (restrooms) with mechanical and electrical utilities was constructed as well. |  |                        |
| 5/15-10/16   | <b>LA-1 Reroute from Golden Meadow to Leesville, Golden Meadow, LA.</b> – 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.  |  |                        |

**16. Staff Experience:**

|   |   |   |    |
|---|---|---|----|
| Firm employed by <b>Marrero, Couvillon &amp; Associates, LLC.</b> |   |   |    |
| Name  | <b>John Hamm</b>  | Years of relevant experience with this employer     | 7  |
| Title   | Sr. Electrical Engineer   | Years of relevant experience with other employer(s) | 33 |
| Degree(s) / Years / Specialization                                |   | Bachelor of Science / 1981 / Electrical Engineering |    |
| Active registration number / state / expiration date              |   | License No. N/A                                     |    |
| Year registered   | N/A   | Discipline  |    |
| Contract role(s) / brief description of responsibilities          |   | Electrical Engineer / Electrical Engineering Design |    |
| Experience dates (mm/yy–mm/yy)                                    | Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the time specified in the applicable MPR(s).  |   |    |
| 05/15 – 12/17   | <b>City/Parish of East Baton Rouge - Indefinite Delivery/Indefinite Quantity (ID/IQ) Contract with the Department of Public Works City Parish East Baton Rouge – Green Light Project, East Baton Rouge Parish, LA – Sr. Electrical Engineer - Design of Street Lighting, Baton Rouge, Louisiana</b> This project includes multiple street lighting projects.  |   |    |
| 02/15 – 07/17   | <b>LADOTD - LA-1 Reroute from Golden Meadow to Leesville, Lafourche Parish, LA – Sr. Electrical Engineer -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.</b>  |   |    |
| 08/15 – 07/20   | <b>LADOTD - Bayou LaLoutre Bridge Rehabilitation, St. Bernard Parish, LA – Sr. Electrical Engineer - Provided complete electrical rehabilitation on the vertical lift bridge.</b>   |   |    |
| 05/15 – 02/17   | <b>LADOTD - I-10 Widening at LA 429 and LA 30, Ascension Parish – Sr. Electrical Engineer - Design of the lighting systems for A LA DOTD interchange in Ascension Parish. Design of lighting meeting required illumination levels at I-10 Widening, LA 429 and LA 30, including new loop and ramp structures.</b>   |   |    |
| 04/17 - Present   | <b>City/Parish of East Baton Rouge - I-10 and Pecue Lane, Baton Rouge, LA – Sr. Electrical Engineer -Lighting design along Pecue Lane from the control of access points north and south of the roadway. Currently, there is no access to I-10 from Pecue Lane and the existing Pecue Lane consists of 2 traffic lanes. The existing overpass will be removed and replaced with two overpass structures, with 3 lanes in each direction. Pecue Lane will be reconstructed to a curb and gutter section, with a raised median and 3 lanes in each direction. South of I-10 there will be two bridge structures for Pecue to cross Ward’s Creek.</b> |   |    |
| 07/17 - Present   | <b>LADOTD - I-10 and 73 – Design Build, Ascension Parish and East Baton Rouge, LA – Sr. Electrical Engineer - Provided electrical engineering and design for lighting on the I-10 Widening from Highland to LA 30 design-build project.</b>   |   |    |

**17. Firm Experience:**

|   |  |   |  |                  |
|---|--|---|--|------------------|
| Firm name                               | <b>Modjeski and Masters, Inc.</b>  |   | Past Performance Evaluation Discipline(s)*             | Bridge           |
| Project name                            | <b>Pointe-A-La-Hache Ferry Landing Rehabilitation</b>                                |   | Firm responsibility (prime or sub?)                    | Sub              |
| Project number                          | H.006226.5   | Owner's name  | Louisiana Department of Transportation and Development |                  |
| Project location                        | Plaquemines Parish, Louisiana  |   | Owner's Project Manager                                | Chris Guidry, PE |
| Owner's address, phone, email           | 1201 Capital Access Road, Baton Rouge, LA 70802, (225) 379-1328, chris.guidry@la.gov |   |  |                  |
| Services commenced by this firm (mm/yy) | 12/06  | Total consultant contract cost (\$1,000's)                    | N/A  |                  |
| Services completed by this firm (mm/yy) | 07/07  | Cost of consultant services provided by this firm (\$1,000's) | \$15   |                  |

The proposed overall project consisted of performing a rehabilitation of the Pointe-A-La-Hache East Bank and West Bank Ferry Landings for the ferry crossing the Mississippi River. Preliminary plans were prepared in accordance with the requirements of the DOTD Roadway Plan Preparation Manual, Bridge Design Manual, Off-System Bridge Rehabilitation and Replacement Program Guidelines and Hydraulics Manual. Specifications were in accordance with latest edition of the Louisiana Standards Specifications for the Road and Bridges.

As a sub-consultant, Modjeski and Masters developed preliminary plans for the electrical and mechanical layout drawings and associated electrical and mechanical general notes. This work basically covered the design of the approach lifting mechanism and electrical power requirements for the lifting equipment and approach bridge lighting.

In 2019, a task order for final design was executed however this project was ultimately canceled. The scope of work for final design was to include the following major tasks:

- Completion of Final Design, Plans, Specifications and Cost Estimates for both East Bank and West Bank Ferry Landings
- Establishment of Final Design Criteria including Design Vessel, Berthing Velocity, Wind, Debris and River Current Loadings, Design Vehicle and Speed, Loading on Mooring Facilities, Loading on Bridge and Ramps.
- Final Design of Landing Ramp Bridge and Mooring Structural Design and Detailing
- Re-use of Existing Pontoon Barge and associated apron Structures
- Design and detailing of Roadway and Pedestrian Guardrails for the new Ramp Bridge
- Mechanical Design including lifting tower machinery for the Ramp Bridge Mechanical System
- Electrical Design for the Ferry Landing Electrical System and Components including general plans and elevation of existing components, demolition, one-line and three-line power diagrams, motor starter diagrams, control schematics, conduit and wiring schedule, equipment schedule, panel board schedule and associated details
- Review and Synthesis of Existing Boring Data and Completion of LRFD Foundation Design
- Data Collection including abstracting, site surveys, boundary surveys, alignment and highway tie-ins, confirmation of vertical datums, controls and elevations, marine soundings
- Roadway Design including typical sections, plan/profile sheets, geometric design, pavement marking, construction signing, cross-sections
- Civil/Site tasks includes coordination with the US Corps of Engineers, utility coordination and existing/proposed site plan and profile for the river and levee
- As-Designed Load Rating of the Lift Bridge and Ramps



Project Team: **Geoff Forest, PE, Jeff Newman, PE, Ralph Eppheimer, PE**

**17. Firm Experience:**

|   |   |   |   |               |
|---|---|---|---|---------------|
| Firm name                               | <b>Modjeski and Masters, Inc.</b>   |   | Past Performance Evaluation Discipline(s)*  | Bridge        |
| Project name                            | <b>NCDOT Ferry Ramps</b>  |   | Firm responsibility (prime or sub?)         | Prime         |
| Project number                          | N/A   | Owner's name  | North Carolina Department of Transportation |               |
| Project location                        | Various Locations in North Carolina   |   | Owner's Project Manager                     | Scott Blevins |
| Owner's address, phone, email           | 1000 Birch Ridge Drive, Raleigh, NC 27610, (919) 707-7132, sblevins@ncdot.gov |   |   |               |
| Services commenced by this firm (mm/yy) | 05/12   | Total consultant contract cost (\$1,000's)                    |   | \$126         |
| Services completed by this firm (mm/yy) | 06/13   | Cost of consultant services provided by this firm (\$1,000's) |   | \$126         |

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)

Modjeski and Masters provided electrical and mechanical engineering design services to NCDOT to supplement their in-house structural design of two new ferry ramps (Cherry Branch Ferry) and the rehabilitation of two other ramps (Stumpy Point Ferry and Rodanthe Ferry). This project was completed on a very accelerated delivery schedule.

The scope of work included the following major tasks:

- Site visit with NCDOT personnel for reconnaissance and scoping
- Developed Electrical Contract Plans and Specifications for incorporation into the bid package, including construction cost estimate, for the following items:
  - Conduit and Wiring
  - Pull Boxes and Junction Boxes
  - Additional Circuits as needed; Existing Circuits replaced as needed
  - Motor Starters, transfer switches and power receptables for ferry vessel power to hydraulic power units, short power receptables for power to the ferry vessels, traffic gates for ramps, pendant control stations for traffic gates and ramp hydraulics
- Developed Mechanical Contract Plans and Specifications for incorporation into the bid package, including construction cost estimate, for the following items:
  - Hydraulic System (Lifting Cylinders, Hydraulic Power Unit, Hydraulic Lines)
  - Electrical Chain Hoists
  - Lifting components/hardware (Chain, Wire Rope, Sheave Blocks, Shackles, Clevises, Grease Lines)
- Construction Cost Estimates for Mechanical System Components
- Deliverables includes Mechanical Layout, Ramp Lift System, Hydraulic/Lubrication Liens, Hydraulic System Schematic Diagram, Electrical Layout, Electrical System Schematic Diagram, Control Pendant Details, Warning Gate Details, Miscellaneous Electricals Details
- Assist with Responses to Bidders' Questions
- Provided Construction Support Services



Project Team: David Barrett, PE, Lee Lentz, PE, **Jeff Newman, PE, Alexander Waardenburg, PE**

**17. Firm Experience:**

|   |  |   |  |                    |
|---|--|---|--|--------------------|
| Firm name                               | <b>Modjeski and Masters, Inc.</b>  |   | Past Performance Evaluation Discipline(s)*             | Bridge             |
| Project name                            | <b>LADOTD-CCCD Ferry Facilities</b>  |   | Firm responsibility (prime or sub?)                    | Prime              |
| Project number                          | SP No. 700-99-0316   | Owner's name  | Louisiana Department of Transportation and Development |                    |
| Project location                        | New Orleans, LA  |   | Owner's Project Manager                                | Richard Skoien, PE |
| Owner's address, phone, email           | 166 W. 3 <sup>rd</sup> Street, Kenner, LA 70062, (504) 465-3210, Richard.Skoien@la.gov |   |  |                    |
| Services commenced by this firm (mm/yy) | 09/05  | Total consultant contract cost (\$1,000's)                    |  | \$28               |
| Services completed by this firm (mm/yy) | 10/06  | Cost of consultant services provided by this firm (\$1,000's) |  | \$28               |

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)

Hurricane Katrina struck the Greater New Orleans area causing significant damage to LADOTD-CCCD facilities. Modjeski and Masters swiftly responded to establish communications with LADOTD personnel and quickly received assignments for emergency response to fixed and floating assets as related to the LADOTD-CCCD ferry facilities. M&M provided inspection, reporting, repair detailing and monitoring of construction repairs of damages caused by Hurricane Katrina to ferry facility buildings, pedestrian access bridges, vehicle roadway bridges and moorings. The facilities included: Canal Street, Algiers, Jackson Avenue, Greta, Lower Algiers and Maintenance Landing.



The scope of work included the following major tasks:

- Assessment of Hurricane Damage to all LADOTD-CCD Ferry Facilities plus maintenance facilities
- Development of contract services scope and field monitoring services.
- Inspection and Reporting of Damages to the Ferry Facilities caused by Hurricane Katrina
- Development of Repair Details including metalwork repairs at downstream wings, upstream mooring and pontoon face
- Investigation to determine an appropriate bumper shape and support modification for the Lower Algiers and Chalmette pontoon upstream moorings.
- Detail adaptations for new delta shape bumpers (supports and anchorage) for the upstream and downstream end of the Lower Algiers facility.
- Monitoring of Construction Repairs

Project Team: **Ralph Eppehimer, PE**, Scott Gordon, Michael Beitzel, Bryan Swartz

**17. Firm Experience:**

|   |  |   |   |               |
|---|--|---|---|---------------|
| Firm name                               | <b>Modjeski and Masters, Inc.</b>  |   | Past Performance Evaluation Discipline(s)*        | Bridge        |
| Project name                            | <b>Bridgeport Ferry Terminal</b>   |   | Firm responsibility (prime or sub?)               | Sub           |
| Project number                          | N/A  | Owner's name  | The Bridgeport & Port Jefferson Steamboat Company |               |
| Project location                        | Bridgeport, Connecticut  |   | Owner's Project Manager                           | Donald Harvie |
| Owner's address, phone, email           | 400 Allen Drive Suite 400, Charleston, WV 25302, (781) 221-1143, Donald.Harvie@stantec.com |   |   |               |
| Services commenced by this firm (mm/yy) | 04/17  | Total consultant contract cost (\$1,000's)                    | N/A   |               |
| Services completed by this firm (mm/yy) | 02/18  | Cost of consultant services provided by this firm (\$1,000's) | \$32  |               |

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)

As a sub-consultant, Modjeski and Masters provided engineering services for the mechanical system design of the new ferry ramp at the Barnum Landing at the Bridgeport Ferry Terminal. M&M also provided engineering services for a conceptual design of a pedestrian ramp at this Ferry Terminal.

The scope of work included the following major tasks:

- Site visit for reconnaissance and scoping
- Developed Mechanical Contract Plans and Specifications for incorporation into the bid package, including construction cost estimate, for the following items:
  - Hydraulic System (Lifting Cylinders, Hydraulic Power Unit, Hydraulic Lines)
  - Lifting components/hardware (Chain, Wire Rope, Sheave Blocks, Shackles, Clevises, Grease Lines)
  - Interface with the Prime for Electrical/Structural Design
- Developed 30% Conceptual Plans for a new Pedestrian Ramp
- Construction Cost Estimates for Mechanical System Components
- Deliverables includes Mechanical Layout, Ramp Lift System, Hydraulic/Lubrication Liens, Hydraulic System Schematic Diagram
- Assist with Responses to Bidders' Questions



Project Team: Elizabeth Sample, PE, Jeff Newman, PE, Goeffrey Forest, PE, Shannon Christie

**17. Firm Experience:**

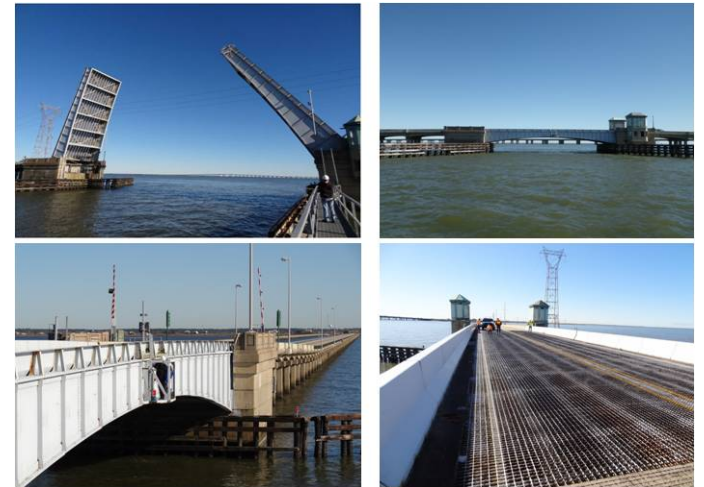
|   |  |   |  |                  |
|---|--|---|--|------------------|
| Firm name                               | <b>Modjeski and Masters, Inc.</b>  |   | Past Performance Evaluation Discipline(s)*             | Bridge           |
| Project name                            | <b>US 11 Bridge over Lake Pontchartrain</b>  |   | Firm responsibility (prime or sub?)                    | Prime            |
| Project number                          | H.010016.5   | Owner's name  | Louisiana Department of Transportation and Development |                  |
| Project location                        | New Orleans, LA  |   | Owner's Project Manager                                | Kurt Brauner, PE |
| Owner's address, phone, email           | 1201 Capital Access Road, Baton Rouge, LA 70802, (225) 379-1933, kurt.brauner@la.gov |   |  |                  |
| Services commenced by this firm (mm/yy) | 04/13  | Total consultant contract cost (\$1,000's)                    | \$1,631  |                  |
| Services completed by this firm (mm/yy) | Ongoing  | Cost of consultant services provided by this firm (\$1,000's) | \$1,530  |                  |

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)

This project involved the performance of structural, mechanical, electrical and architectural rehabilitation services for the two bascule spans within this five mile bridge in order to extend its life for 30-40 additional years. Constructed in 1938, this structure contains two double-leaf bascule bridges that carries US 11 across Lake Pontchartrain at New Orleans, Louisiana.

**Tasks Performed:**

- Evaluation of the conditions of structural, mechanical, electrical and architectural components of this bridge.
- Evaluation of existing paint system and recommendations.
- Development of Scope of Services for the rehabilitation of this bridge.
- Development of preliminary plans.
- Bridge Rating
- Construction Related Engineering Support services
- Construction Engineering and Inspection for Bridge Coatings and Shop Inspection



Project Team: **Zolan Prucz, PhD, PE, Ralph Eppehimer, PE, Dave A. Kanger, PE, Cullen J. Ledet, PE, Lance V. Borden, PE, Jeff W. Newman, PE, Michael J. Beitzel, Jon Gerhart, PE,**

**17. Firm Experience:**

|   |   |   |  |              |
|---|---|---|--|--------------|
| Firm name                               | <b>Fugro USA Land, Inc.</b>   |   | Past Performance Evaluation Discipline(s)* | Geotechnical |
| Project name                            | <b>Plaquemines LNG Development</b>  |   | Firm responsibility (prime or sub?)        | Prime        |
| Project number                          | N/A   | Owner's name  | Venture Global                             |              |
| Project location                        | Plaquemines Parish, Louisiana   |   | Owner's Project Manager                    |              |
| Owner's address, phone, email           | 1001 19 <sup>th</sup> Street North, Suite 1500, Arlington, VA 22209, bshapot@venturegloballng.com |   |  |              |
| Services commenced by this firm (mm/yy) | 09/15   | Total consultant contract cost (\$1,000's)                    | 4,000                                      |              |
| Services completed by this firm (mm/yy) | Ongoing   | Cost of consultant services provided by this firm (\$1,000's) | 4,000                                      |              |

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)

Venture Global (VG) is developing the Plaquemines LNG project on an approximately 1,000 acre tract along the Mississippi River in Plaquemines Parish, Louisiana. Fugro was retained by VG to perform the geotechnical services on the project. Geotechnical services started in 2015 and are currently being performed during the construction phase.

Fugro's services included performing over 100 soil borings and 20 Cone Penetration Test (CPT) soundings across the site to depths up to 300-ft. Services were performed using a combination of truck- and track-mounted equipment. Geotechnical laboratory testing was performed on the collected soil samples.

Geotechnical engineering services were performed to obtain Federal Energy Regulatory Commission (FERC) permits, Army Corps of Engineers (ACOE) permits and to develop the final design for the facility. Fugro's engineering evaluations and design verification services included the following:

- Deep foundation recommendations (driven steel pipe piles/drilled displacement piles) for tanks and facilities
- Deep foundation recommendations for dock facilities on up to 120-inch diameter steel monopiles
- Slope stability and settlement evaluations based on grade raising operations around the Mississippi River levee
- Test pile program including indicator piles, static load tests, and dynamic monitoring on a series of deep foundation types
- Dynamic monitoring and capacity verification for dock facility production piles
- Ground improvement recommendations and validation
- Settlement calculations and mitigation or grade raising activities
- Fault studies
- Heavy haul road and construction access recommendations
- Storm surge wall foundation and capacity verification recommendations

Project Team: Sam Bryant, PhD, PE, PG, **Eric Marx, PE**, Jack Koban, PhD, PE, PG, Sheldon Collins, Steve Williams, Robert Johnson, Deborah Meyer-Sayer





**17. Firm Experience:**

|   |   |   |  |              |
|---|---|---|--|--------------|
| Firm name                               | <b>Fugro USA Land, Inc.</b>   |   | Past Performance Evaluation Discipline(s)* | Geotechnical |
| Project name                            | <b>I-10 Calcasieu Bridge</b>  |   | Firm responsibility (prime or sub?)        | Prime        |
| Project number                          | H.003931, Contract 700-66-0507  | Owner's name  | State of Louisiana, DOTD                   |              |
| Project location                        | Lake Charles, Louisiana   | Owner's Project Manager                                       | Kristy Smith                               |              |
| Owner's address, phone, email           | 1201 Capitol Access Road, Baton Rouge, LA 70802, 225-379-1387, Kristy.smith2@la.gov |   |  |              |
| Services commenced by this firm (mm/yy) | 05/21   | Total consultant contract cost (\$1,000's)                    | N/A  |              |
| Services completed by this firm (mm/yy) | 12/21   | Cost of consultant services provided by this firm (\$1,000's) | 600  |              |

As part of a Statewide Geotechnical retainer contract, Fugro performed geotechnical exploration and engineering related services for the I-10 Calcasieu River Project in Lake Charles, Louisiana. The geotechnical investigations, sampling, and testing services provided for this contract included 42 deep soil borings to depths up to 150-ft and 30 subgrade survey soil borings to depths of 10-ft. The explorations were performed in a proposed alignment from the west bank of the Calcasieu River to approximately 4 miles west of the river.

A total of 3,696 ft of drilling was accomplished in an expedited manner to meet the project deadlines. Deliverables included:

- Field reconnaissance for equipment access
- Traffic Control planning and coordination
- Deep and shallow soil borings
- Classification, Strength and Consolidation Laboratory Testing
- Drafting of boring logs and subgrade soil surveys
- Geotechnical data report

DOTD recognized Fugro's work with high marks on a project evaluation.

|   |
|---|
| 1. Provide a brief description of the project and the evaluated deliverables.   |
| This project consisted of performing 42 deep Geotechnical soil borings and 30 shallow subgrade soil survey borings for the I-10 Calcasieu preliminary Geotechnical Investigation. This project had a tight schedule with a demanding work load. Fugro completed the borings, lab testing and data report exactly how we asked and delivered well before the due date. |
| 2. Explain the technical accuracy of the consultant's deliverables throughout the project.  |
| The deliverables were provided exactly how the Geotech section requested.   |
| 3. Describe all notable aspects, positive and negative, of the consultant's participation in the project.   |
| Fugro completed the proposal very quickly, which allowed for the early delivery of the Notice to Proceed. They also delivered the final Data Report a month before the due date. Fugro did an excellent job with this task order.   |
| 4. If the consultant was the prime summarize the management of the project.   |
| The project was well managed. Michael Hollier kept our section informed of progress and did a good job communicating, he was well-organized and was ahead of schedule.  |

***DOTD Evaluation of Fugro Performance example***

Project Team: Eric Marx, PE; Andrew Bull, PE; Deborah Meyer-Sayer; Mike Allen, PG; Mike Hollier, PE; Viet Le, EI; Andrew Bull, EI; Steve Williams

**17. Firm Experience:**

|   |   |   |                         |
|---|---|---|-------------------------|
| Firm name                               | <b>C. H. Fenstermaker &amp; Associates, L.L.C.</b>                                    | Past Performance Evaluation Discipline(s)*                    | Survey, Data Collection |
| Project name                            | <b>Louisiana Terminal Site Topographic Survey and Utility Mapping</b>                 | Firm responsibility (prime or sub?)                           | Prime                   |
| Project number                          | N/A   | Owner's name  | Port of New Orleans     |
| Project location                        | St. Bernard Parish, LA  | Owner's Project Manager                                       | Chris Gilmore           |
| Owner's address, phone, email           | P.O. Box No. 60046, New Orleans, LA 70160, (504) 528-3305, chris.gilmore@portnola.com |   |                         |
| Services commenced by this firm (mm/yy) | 04/22   | Total consultant contract cost (\$1,000's)                    | \$250                   |
| Services completed by this firm (mm/yy) | Ongoing   | Cost of consultant services provided by this firm (\$1,000's) | \$185                   |

**Project/Firm's Role:** A confidential client selected Fenstermaker to perform topographic survey and utility mapping services for use in conceptual designs and permit applications for a port terminal project. The topographic survey will be performed using aerial LiDAR and orthorectified aerial imagery. Fenstermaker will perform a bathymetric survey of the wharf project survey area and a magnetometer survey within the limits of the bathymetric survey. For the utility mapping portion of the project, Fenstermaker will obtain readily available data from utility owners on underground utilities including water, sanitary sewer, storm drainage, electrical, gas, telephone, streetlight, and bridge. Upon completion of data collection, Fenstermaker will submit a report that will include narrative descriptions of the data collected and will describe equipment used, survey control benchmarks, field activities, and visual field observations. Deliverables include a survey plan, the initial submittal, the pre-final submittal, and the final submittal.

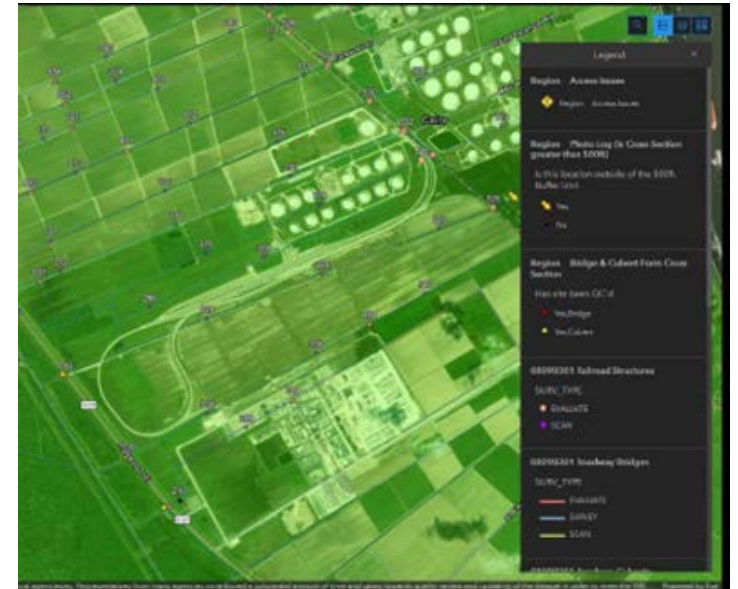
**Key Personnel:** Justin Bordelon, PLS; Bradford Millett, PLS, EI



**17. Firm Experience:**

|   |  |   |  |                                      |
|---|--|---|--|--------------------------------------|
| Firm name                               | <b>C. H. Fenstermaker &amp; Associates, L.L.C.</b>   |   | Past Performance Evaluation Discipline(s)*                                     | Survey, Data Collection              |
| Project name                            | <b>Louisiana Watershed Initiative (LWI) Modeling Contract – Region No. 4,5, &amp; 6</b>  |   | Firm responsibility (prime or sub?)  | Prime (Region 4); Sub (Region 5 & 6) |
| Project number                          | 4400017090 (Region 4)<br>4400017091 (Region 5)<br>4400017092 Region 6  | Owner's name  | LADOTD   |                                      |
| Project location                        | Rapides, Avoyelles, Beauregard, DeSoto, Pointe Coupee, Allen, Evangeline, St. Landry, Calcasieu, Jefferson Davis, Acadia, Lafayette, St. Martin, Iberville, Cameron, Vermilion, Iberia, St. Mary, Sabine, Vernon, West Baton Rouge, Ascension, Assumption, St. James, St. John the Baptist, Terrebonne, Lafourche, St. Charles, Plaquemines & Orleans Parishes |   | Owner's Project Manager  | Billy Williamson                     |
| Owner's address, phone, email           | 1201 Capitol Access Road, Baton Rouge, LA 70802-4438, (337) 379-3023, billy.williamson@la.gov  |   |  |                                      |
| Services commenced by this firm (mm/yy) | <b>Region 4</b> 04/20; <b>Region 5</b> 01/22; <b>Region 6</b> 11/20  | Total consultant contract cost (\$1,000's)                    | <b>Region 4</b> \$10,443;<br><b>Region 5</b> \$629;<br><b>Region 6</b> \$1,624 |                                      |
| Services completed by this firm (mm/yy) | Ongoing  | Cost of consultant services provided by this firm (\$1,000's) | \$12,699   |                                      |

**Project/Firm's Role:** Fenstermaker performed surveys at structure and channel locations throughout regions 4, 5, and 6 in Louisiana to support hydrologic and hydraulic modeling. This effort spanned multiple parishes and waterways across watershed regions around the state and used topographic, bathymetric and lasers scanning to provide refined topography for modeling purposes. Fenstermaker collected survey data in the North American Datum of 1983 (NAD 83) horizontal datum, Epoch 2010. The projected coordinate system used was the State Plane Coordinate System, Louisiana South (1702) Zone, and the vertical datum used was the North American Vertical Datum of 1988 (NAVD 88) utilizing Geoid 12B. Survey work also used the LSUC4G network and GPS instrumentation with a standard accuracy of approximately 10 cm horizontally and 10 cm vertically. All data was collected utilizing DOTD survey feature codes. Field crews utilized Survey 123 software to create a live data experience while data was sent from the field to the office staff for processing. The ArcGIS Survey123 application was linked to Fenstermaker's database and utilized by field crews through a mobile phone or tablet to access features such as assigned/completed survey points, bridge and culvert evaluation forms, image uploading, field hazard alerts (e.g., beaver dams, obstructions, etc.), and access issues. The engineers were able to view the progress and forms and to approve cross section relocations through the application's dashboard remotely and efficiently.



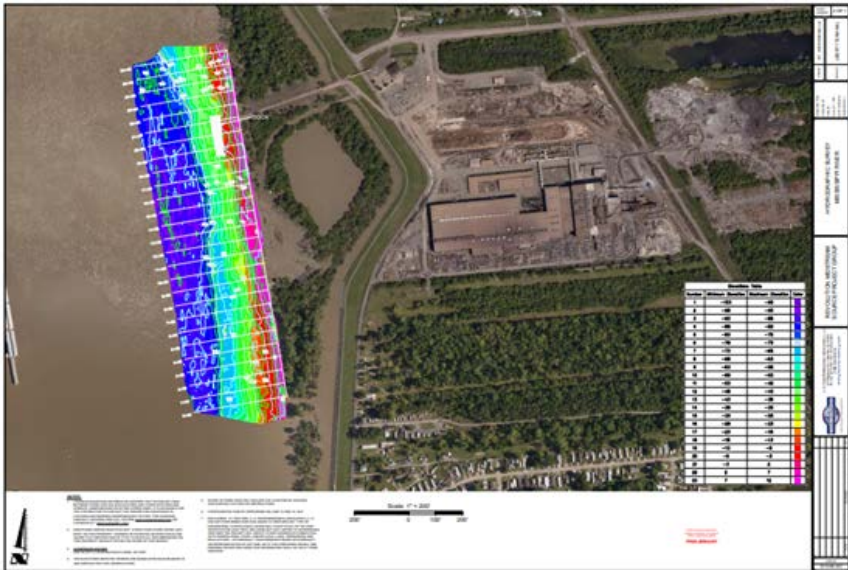
**Key Personnel Involved:** Bradford Millet, PLS, E.I.

**17. Firm Experience:**

|   |   |   |  |                         |
|---|---|---|--|-------------------------|
| Firm name                               | <b>C. H. Fenstermaker &amp; Associates, L.L.C.</b>  |   | Past Performance Evaluation Discipline(s)* | Survey, Data Collection |
| Project name                            | <b>Source Project Group MS River LiDAR &amp; Multibeam Surveys</b>  |   | Firm responsibility (prime or sub?)        | Prime                   |
| Project number                          | N/A   | Owner's name  | Revolution Midstream                       |                         |
| Project location                        | St. John the Baptist Parish, LA   |   | Owner's Project Manager                    | Austin Terry            |
| Owner's address, phone, email           | 914 Broadway Avenue, Suite 302, Oklahoma City, OK 73102, (713) 545-7124,<br>Austin.terry@sourceprojectgroup.com |   |  |                         |
| Services commenced by this firm (mm/yy) | 06/21   | Total consultant contract cost (\$1,000's)                    | \$43.24                                    |                         |
| Services completed by this firm (mm/yy) | 10/21   | Cost of consultant services provided by this firm (\$1,000's) | \$43.24                                    |                         |

**Project/Firm's Role:** Source Project Group contracted Fenstermaker to perform survey services in preparation for the construction of the Liberty Terminal. Fenstermaker performed a land survey using LiDAR data capture by UAV drone on approximately 400 acres east of Bayou Steel Mill in St. John the Baptist Parish. The survey included an area earmarked for a proposed rail layout. Fenstermaker also completed a bathymetric survey using the Norbit Multibeam System on an area of land along the bank of the Mississippi River. The survey area was approximately 2300 feet by 500 feet. Project deliverables included land survey data in Digital Surface Model (DSM) file in AutoCAD format at 1-foot grid spacing and a hydrographic survey map and digital model showing shaded elevation contours with cross section elevation profiles.

**Key Personnel:** Justin Bordelon, PLS



**17. Firm Experience:**

|   |   |   |   |
|---|---|---|---|
| Firm name                               | <b>Marrero, Couvillon &amp; Associates, LLC.</b>                          | Past Performance Evaluation Discipline(s)*                    | Bridge                                    |
| Project name                            | <b>Bayou LaLoutre Bridge Rehabilitation</b>                               |   | Firm responsibility (prime or sub?)   Sub |
| Project number                          | 4400000641  | Owner's name  | LADOTD                                    |
| Project location                        | Yscloskey, St. Bernard Parish, LA   | Owner's Project Manager                                       | John Richard (TRC)                        |
| Owner's address, phone, email           | Two United Plaza, Suite 502, 850 United Plaza Blvd, Baton Rouge, LA 70809 |   |   |
| Services commenced by this firm (mm/yy) | 01/12   | Total consultant contract cost (\$1,000's)                    | Unknown                                   |
| Services completed by this firm (mm/yy) | 03/20   | Cost of consultant services provided by this firm (\$1,000's) | \$225                                     |

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)

\* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Bayou LaLoutre Bridge is a vertical lift bridge on LA 46 in Yscloskey, La., St. Bernard Parish. The total project was to provide final plans and technical specifications for cleaning, painting, electrical and structural repairs, and construction engineering services. MCA was engaged to perform a complete electrical rehabilitation, including new lighting panels, switchboards and electrical design for a new two story operator house

The scope of services included

- a. 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.
- b. Prepare a scope of work document with associated costs
- c. Preliminary plans
- d. Final plans and specifications
- e. Construction cost estimate
- f. Construction related engineering support

Key Staff: **Orien Butler, Sr. Electrical Engineer; John Hamm – Electrical Engineer**

**17. Firm Experience:**

|   |  |   |  |
|---|--|---|--|
| Firm name                               | <b>Marrero, Couvillon &amp; Associates, LLC.</b>   | Past Performance Evaluation Discipline(s)*                    | Bridge   |
| Project name                            | <b>New Orleans Municipal Yacht Harbor</b>  | Firm responsibility (prime or sub?)                           | Sub  |
| Project number                          | N/A  | Owner's name  | City of New Orleans, Municipal Yacht Harbor Management Corp. |
| Project location                        | New Orleans, LA  | Owner's Project Manager                                       | Chris Williams, P.E.   |
| Owner's address, phone, email           | One American Place, 301 Main St #800, Baton Rouge, LA 70802; 504-648-3560; lwilliams@moffattnichol.com |   |  |
| Services commenced by this firm (mm/yy) | 08/16  | Total consultant contract cost (\$1,000's)                    | \$27,500   |
| Services completed by this firm (mm/yy) | 07/21  | Cost of consultant services provided by this firm (\$1,000's) | \$420  |

Describe the project including the firm's role and members involved. **(Highlight staff to be used in this proposal.)**

\* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

Marrero, Couvillon & Associates provided Mechanical, Electrical, Plumbing and Fire Protection engineering services to the prime Marine Engineering firm for the renovation of the City of New Orleans Municipal Yacht Harbor. New floating concrete docks with approximately 500 boat slips were installed, complete with electrical, water and fire protection utilities for each slip. A new Comfort Station (restrooms) with mechanical and electrical utilities was constructed as well. The total construction cost of the renovation is \$27M.

MCA provided the design and development of construction documents for MEP systems for the new comfort station, and for utility services to the new boat slips, including grounding and fire protections. In addition, coordination with regulatory agencies, including the Office of the State Fire Marshal, were also provided.

The marina's new slips are larger to accommodate longer & wider beam boats and provide updated utilities, lighting, and life safety equipment.

The project's design approach was to prioritize the construction of East Side first (approximately 300 slips) in order to get those slips leased and generating revenue as soon as possible. This side of the marina included the Comfort Station and East Side entrance. It was completed first; thus providing public facing exposure for the project's progress. This side was the largest utility consumer so the MEP systems were the most complex to specify and design.

**Key Staff:**

Orien Butler, Sr. Electrical Engineer

Brian Miller, P.E. – Sr. Mechanical Engineer

Chris Schade, P.E. – Sr. Electrical Engineer

Greg Decoursey, AIA – Sr. Architect

**17. Firm Experience:**

|   |  |   |  |
|---|--|---|--|
| Firm name                               | <b>Marrero, Couvillon &amp; Associates, LLC.</b>   | Past Performance Evaluation Discipline(s)*                    | Bridge                                 |
| Project name                            | <b>Leeville to Golden Meadow (Phase 2) Rouge LA1 Relocation</b>                          | Firm responsibility (prime or sub?)                           | Sub                                    |
| Project number                          |  | Owner's name  | Louisiana Department of Transportation |
| Project location                        | Lafourche Parish   | Owner's Project Manager                                       | David Flanders (HNTB)                  |
| Owner's address, phone, email           | 10000 Perkins Rowe, Suite 640, Baton Rouge, LA 70810, (225) 368-2800, dflanders@hntb.com |   |  |
| Services commenced by this firm (mm/yy) | 02/14  | Total consultant contract cost (\$1,000's)                    | Unknown                                |
| Services completed by this firm (mm/yy) | 07/17  | Cost of consultant services provided by this firm (\$1,000's) | \$406                                  |

Describe the project including the firm's role and members involved. **(Highlight staff to be used in this proposal.)**

\* If there is more than one past performance evaluation discipline included in the proposal, then indicate which past performance evaluation discipline(s) this project is being used to represent.

MCA provided electrical engineering services for the design of approximately 9 miles of relocated LA 1 elevated roadway and approaches. The new alignment will cross several pipelines and canals, beginning at the North Connector in Leeville, LA and terminating at the existing 4-lane LA 3235 highway in Golden Meadow, LA. The alignment will connect to and continue the currently constructed southbound bridge in Leeville and will continue northward crossing the levee at Golden Meadow and tie into LA 3235 with a transition from 2 to 4 lanes. Phase 2 design will be segmented into three; Segment 2A (Southern Segment), Segment 2B (Middle Segment), and Segment 2C (Northern Segment). The services rendered by Marrero, Couvillon & Associates, LLC for this project consist of Stage 3: Design – Part III – Preliminary Plans. Electrical design included selected areas for all lighting systems and power for CCTV and toll booth facilities.

**Key Personnel:**

**Brian Miller, P.E. – Project Manager**

**Orien Butler, P.E. – Sr. Electrical Engineer**

**John Hamm – Electrical Engineer**



## **18. Approach and Methodology:**

Modjeski and Masters, Inc (M&M) is very familiar with the existing Pointe-A-La-Hache Ferry Landing. M&M performed the preliminary design services for the proposed rehabilitation of the existing ferry terminals. The work M&M performed on the previous rehabilitation project will be invaluable to our efforts for designing the proposed new ferry terminals. M&M has assembled a highly qualified team to fulfill all of the requirements for the design of the new ferry terminals. Joining the M&M Team are the highly respected firms of Fugro USA Land, Inc. (Fugro), C. H. Fenstermaker & Associates, Inc (Fenstermaker) and Marrero, Couvillon & Associates, LLC (MCA). Fenstermaker will be responsible for performing the hydrographic and topographic surveys. Fugro will be responsible for all geotechnical engineering services. MCA will assist with the electrical and mechanical design and also perform architectural services as required. M&M will be responsible for all bridge, roadway and drainage design services.

Fenstermaker has provided surveying, engineering, and environmental consulting services in south Louisiana for over 70 years. A recognized leader in providing survey services for ports and coastal projects, Fenstermaker has a successful history of completing survey projects on time, safely, and within budget.

**Topographic Survey:** The topographic survey shall adhere to all modern survey theories, practices, and procedures, and the Location and Survey Manual including typical surveying methods as applied by LADOTD. The LADOTD feature code list and symbols shall be utilized and shall follow the standards included in the latest edition of the survey feature code guidebook produced by the LADOTD Location and Survey Section. Existing topographic features will include but are not limited to trees, driveways, roadways, drainage features, utilities, fences, buildings, natural ground elevations, etc.

Other available surveying methods that Fenstermaker may utilize, if approved, for large-scale projects, highly congested areas, or high-traffic sections include the use of High-Definition Terrestrial Laser Scanning, Mobile or Unmanned Aerial LiDAR, and Photogrammetry. These remote sensing devices allow Fenstermaker to collect highly accurate survey data in a safe and efficient manner that will provide LADOTD with up-to-date imagery and a 3D point cloud of the entire project limits. Once this data is collected, linework, surfaces, etc. can be developed in the office utilizing aerial imagery and the 3D point cloud.

**Hydrographic Survey:** The multibeam data collected shall record sufficient information to ensure the accurate location of all objects and features obtained during the survey and shall meet the accuracy requirements specified in the Location & Survey Manual. For areas of the survey where multibeam will be utilized, a Norbit STX iWBMS and a Trimble RTK system will be used. The Norbit System has a curved array allowing it to scan up the bank line and along vertical structures. This system has an integrated Applanix POSMV IMU system for Positioning. POSPac information will be recorded for post-processing to improve positioning in areas where GPS coverage is limited by structures or canopy. Sound velocity profiles of the water column will be taken at each survey location and at a minimum of twice per day. All data collection and processing will be performed in Hypack/ Hysweep software. The survey team will strive to collect multibeam data with full water bottom coverage in identified areas. The multibeam data shall overlap with topographic/single beam data at the shorelines to the extent feasible. Deliverables shall include all normal Survey Inroads along with the point clouds collected.

**Utility Identification:** Fenstermaker is very familiar with and has contacts with an abundance of utility providers throughout Louisiana. We are aware that it is prudent for us to notify LADOTD of the utility information identified, through the use of Louisiana One Call, at the beginning of the survey to allow LADOTD the necessary time to inform utility providers about the planned survey. Fenstermaker will also provide an updated list to LADOTD as new utilities are identified once the topographic survey has commenced. Fenstermaker is conscious that potential utility conflicts may arise, and it is vital for us to work with the utility providers in order to develop an accurate subsurface utility survey. If Fenstermaker performs the utility coordination, we will deliver any as-builts provided, as well as a detailed spreadsheet showing all correspondence and contacts with each provider. Additionally, LADOTD will be notified immediately if a utility provider is unwilling to locate their facility and an underground locator is not successful in locating them.

Once all utilities within the project site have been identified and surveyed, a Utility Location Form will be provided to LADOTD depicting distances from the centerline of the existing road to the utility (e.g. sewer manhole, water meter, fire hydrant, etc.) and will adhere to the guidelines as provided in the Location and Survey Manual. Horizontal and vertical measurements shall be to the nearest 0.10 foot.

Another M&M teaming partner, Fugro, will perform geotechnical investigation and reporting. Fugro understands that the success of a project and satisfaction of stakeholders depends on proper planning and efficient execution. Their Louisiana-based personnel have demonstrated over the course of their current Geotechnical Retainer contract that they deliver quality field work, reliable geotechnical data, and valuable engineering consultation in a safe and timely manner on behalf of DOTD. The following sections detail how Fugro would approach the geotechnical investigation portion of the Pointe-a-la-Hache Ferry Landing Replacement Project.

Preliminary Site Visit, HSE Plan and Subsurface Hazard Mitigation: The proposed scope of work will include drilling borings in the Mississippi River and on the bank. Drilling in the Mississippi River is a challenging exercise that takes experienced personnel to plan operations to successfully complete the project. Prior to mobilizing to the site, Fugro will conduct activities to develop a plan to accomplish the work including the following:

- Review of current survey information to understand water depths at boring locations.
- Assessment of available docks to access boring locations
- Review of site conditions to determine appropriate vessels to safely execute the work
- Development of an HSE and Execution Plan
- Hazard survey to identify potential submerged obstructions/hazards

Geotechnical Data Collection and Analysis: Fugro will mobilize drilling equipment to collect soil samples for geotechnical evaluations. The borings will be conducted with truck- or track-mounted drilling equipment. Sampling will be performed in accordance with DOTD protocols included in the advertisement which are consistent with our experience on previous DOTD task orders. Samples will be delivered to our Baton Rouge based laboratory for classification and strength determination. Testing will be performed in accordance with the frequency included in the advertisement.

Geotechnical Engineering and Reporting: After review of the field and laboratory data, geotechnical site characterization will be developed to provide recommendations to the structural team to develop plan drawings. Fugro has performed engineering evaluations and construction monitoring for dock structures and bank facilities immediately upstream of the project location on the Mississippi River and will apply this experience to inform the project. In addition, Fugro has performed soil borings along the Mississippi River levees adjacent to the landing information that can provide additional context to expected soil behavior. Our recommendations will include in a geotechnical interpretive report that will finalize our scope of services.

Roadway and Drainage Design: M&M will perform all required roadway and drainage design services for the required ferry access roads for both the east and west banks. The ferry access roads on the east bank will tie into LA 15 (River Road). The ferry access roads on the west bank will tie into the new access road from LA 23 which is being designed and constructed under a separate contract by the Entity (Plaquemines Port Harbor & Terminal District). Ferry access by vehicle, pedestrian and bicycles will be considered in the design.

M&M will develop a Level 2 Transportation Management Plan (TMP) in accordance LADOTD's EDSM VI.1.1.8. The temporary traffic control plans will be developed to minimize impacts to vehicular traffic for work near LA 23 and LA 15.

All roadway engineering design services performed by M&M will adhere to the requirements of the most recent editions of LADOTD's Roadway Design Procedure and Details Manual, LADOTD's Minimum Design Guidelines, LADOTD's Engineering Directives and Standards Manual (EDSMs), AASHTO's Policy on Geometric Design of Highways and Streets, AASHTO's Roadside Design Guide, AASHTO's Guide for the Planning, Design and Operation of Pedestrian Facilities, AASHTO's Guide for the Development of Bicycle Facilities and FHWA's MUTCD.

Plan preparation will conform to LADOTD's drafting and software standards. Bentley Inroads and MicroStation software will be used for roadway design. ProjectWise will be used as the document management software for plan development to ensure integration with LADOTD and foster collaboration between different disciplines.

M&M will perform drainage design in accordance with the requirements of LADOTD's Hydraulics Manual. LADOTD's HydrWIN software will be utilized for all Hydrologic & Hydraulic (H&H) calculations.

Bridge Design: M&M will confirm the design criteria established from the previous Pointe-A-La-Hache Ferry Landing rehabilitation project for use in designing the new ferry terminals. A vessel collision study will be conducted to determine the applicable design vessels, vessel speeds, river currents, etc. that will be required to design the dolphins, fenders, pontoon barges and lift tower foundations.

For the bridge design, a Final Design Criteria Document will be created and used to guide development of the Preliminary and Final Plan sets. The existing ferry terminals have a pony truss superstructure landing ramp bridge. This bridge has a fixed hinge near the abutment and a lift beam near the end on the river side to raise/lower the ramp to match the elevation of a landing pontoon barge. The landing pontoon barge is moored in place via chains connecting to steel dolphins. Housed on the landing pontoon barge is a bascule style apron wall that is raised/lowered by machinery that is affixed to the landing pontoon barge.

To simplify fabrication and erection of the new ramp bridges, we will investigate the use of a through girder superstructure in lieu of a pony truss. Rolled shapes will be utilized for the stringers and transverse floorbeams while the through girders will likely be welded built-up shapes. The deck of the existing ramp bridges consist of timber, but for the new structure we will investigate use of alternative wearing surfaces such as steel open grating to minimize weight and maintenance costs while maximizing life expectancy. Foundations of the lift towers will consist of deep pile foundations. Different foundation types will be considered as part of preliminary design. The abutment or earth retaining structure near the shore line will likely consist of a sheet pile wall with a concrete cap. Tie back anchors will be provided if required.

Inventory and Operating ratings will be performed as part of the final design of the ferry terminals. HL-93 and LADV-11 vehicles will be considered in accordance with the AASHTO Manual for Bridge Evaluation, LADOTD Policies and Guidelines for Bridge Rating Evaluation, and Bridge Design Technical Memoranda. If requested by LADOTD, M&M can provide a rating in AASHTOWare BrR.

The ferry ramp bridges have many similarities to a movable bridge – combining aspects of a vertical lift with a trunnion bascule. M&M has successfully delivered hundreds of movable structure projects. We utilize a 3D design environment to create models of the structure. Many of our past projects are located in LA, and we are very familiar with design standards and submission requirements. It is critical that all aspects of movable structure design provide for robust solution that is reliable, simple to operate, and easy to maintain.

M&M has extensive experience designing and maintaining movable spans of all types. Our structural engineers are intimately aware of the specific requirements that are applicable for movable structures. We are very familiar with the AASHTO Movable Specification and the LADOTD Bridge Design and Evaluation Manual, which will ensure that all movable specific design requirements will be included. For example, adequate lateral bracing must be provided for a bascule span, where it might not be required on a similar fixed bridge. Also, the bascule span end floorbeam must be designed for increased impact factor over a similar floorbeam on a fixed span.

Our mechanical and electrical engineers will work closely together with each other and the LADOTD for the selection of the machinery and electrical control systems. M&M will investigate machinery options, such as an operating drum and hoist system, electric linear actuators, and hydraulic actuators, and develop the system most desirable by LADOTD. In addition to the control, M&M electrical will design the power distribution and any backup power requirements decided by



**19. Workload:**

For all contracts where a firm on the team is a prime consultant or sub-consultant and where **a)** the consultant selection was made by DOTD, and **b)** a contract was executed by the consultant and the contracting entity by the date the advertisement for this proposal was posted, list all work meeting the following criteria:

- 1) one of the team's firms is responsible for the performance of the work;
- 2) authorization to perform the work has been provided, as provided in the contract between the consultant and the contracting entity;
- 3) the work has not yet been performed and invoiced; and
- 4) the work is not currently suspended for an indefinite period of time.

For indefinite delivery/indefinite quantity (IDIQ) contracts, list open Task Orders individually.

List only the portion of the fees attributable to firms on the team.

| Firm(s)<br>ALL FIRMS MUST BE<br>REPRESENTED IN<br>THIS TABLE | Past<br>Performance<br>Evaluation<br>Discipline(s) * | Contract Number and<br>State Project Number | Project Name  | Remaining<br>Unpaid<br>Balance** |
|--|--|---|---|----------------------------------|
|  |  | <b>S.P. 700-66-0486 /<br/>440000668</b>     | <b>Engineering Services for Bridge Preservation Retainer<br/>Statewide</b>                              |                                  |
| M&M  | Bridge   | H.009479                                    | West Larose Vertical Lift Bridge Rehabilitation - Supplement No. 2                                      | \$0                              |
| M&M  | Bridge   | JN 3144                                     | Expert witness services in bridge design, construction, repair and forensic analysis                    | \$273,414                        |
|  |  | <b>Retainer Contract<br/>4400002538</b>     | <b>Engineering Services for Bridge Preservation<br/>Statewide</b>                                       |                                  |
| M&M  | Bridge   | H.010882.5                                  | LA 18: 4th Street Bridge Rehabilitation (Supplement No. 2)<br>Construction Services<br>Jefferson Parish | \$0                              |
| M&M  | Bridge   | H.010882.6                                  | 4th Street Bridge Rehabilitation Paint (Supplement No. 3) Route LA 18                                   | \$3,000                          |
|  |  | <b>Retainer Contract<br/>4400005395</b>     | <b>Construction Engineering and Inspection with Painting<br/>Statewide</b>                              |                                  |
| M&M  | CE&I/OV  | H.011705.6                                  | US 11 Lake Pontchartrain Bridge Rehabilitation - Ph2, Sup1  | \$131,229                        |
| M&M  | CE&I/OV  | H.011494.6                                  | US 90 Atchafalaya River Bridge Rehabilitation   | \$0                              |
| M&M  |  | <b>Retainer Contract<br/>4400004921</b>     | <b>Complex Bridge Rating (on-system trusses and other complex<br/>bridges) Statewide</b>                |                                  |
| M&M  | Bridge   | H.009859.5                                  | Load Rating of 14 Complex Bridges   | \$257,576                        |
|  |  | <b>Retainer Contract<br/>4400005774</b>     | <b>Bridge Preservation<br/>Statewide</b>  |                                  |
| M&M  | Bridge   | H.001234.5                                  | Port Allen Canal Bridge   | \$64,231                         |
| M&M  | Other (Roadway<br>Lighting)                          | H.010601.6                                  | I-10: LA 328 to LA 347 - CRES   | \$44,879                         |

|     |                          |                                     |  |           |
|-----|--------------------------|-------------------------------------|--|-----------|
| M&M | Other (Roadway Lighting) | H.011137.5                          | I-12: LA 1077 to US 10 Roadway and Navigation Lighting                           | \$35,452  |
|     |                          | <b>IDIQ Contract<br/>4400012382</b> | <b>Bridge Preservation<br/>Statewide</b>   |           |
| M&M | Bridge                   | H.011705.6                          | US 11: Lake Pontchartrain Bridge Rehab Phase 2 (HBI) Sup1                        | \$0       |
| M&M | Bridge                   | H.013193.6                          | US 61: Thompson Creek Bridge - Construction Svcs. Rehabilitation and Replacement | \$804     |
| M&M | Bridge                   | H.003144.6-2                        | Luling Bridge Cable Stay Replacement Project                                     | \$331,253 |
| M&M | Other (Roadway Lighting) | H.011235                            | Subconsultant: I-49 South at Verot School Road - Lighting                        | \$32,989  |
| M&M | Other (Roadway Lighting) | H.004791                            | Subconsultant: Belle Chasse B7T Replacement P3 - Electrical and Structural       | \$22,870  |
|     |                          | <b>IDIQ Contract<br/>4400017263</b> | <b>Bridge Preservation<br/>Statewide</b>   |           |
| M&M | Bridge                   | H.010603.6                          | I-20 Mississippi River Bridge at Vicksburg - Monitoring                          | \$0       |
| M&M | Other (Roadway Lighting) | H.013866.6                          | I-12: LA 21 to US 190 Navigation Lighting & Roadway Lighting                     | \$59,280  |
| M&M | Other (Roadway Lighting) | H.003184.6                          | I-10: Texas State Line - E. of Coone Gully - CRES                                | \$53,971  |
| M&M | Bridge                   | H.011485.6                          | LA336-1: Bayou Teche Bridge Rehabilitation                                       | \$77,027  |
| M&M | Other (Roadway Lighting) | H.012889.5                          | I-20 Rehabilitation - Roadway Lighting (Pines Road to I-220)                     | \$103,858 |
| M&M | Bridge                   | H.000263.5                          | Chef Menteur Pass Bridge & Approach  | \$27,466  |
| M&M | Bridge                   | H.009859.5                          | Prien Lake Bridge Structural Rating  | \$18,259  |
| M&M | Bridge                   | H.004420.5                          | Barataria Preliminary Fender Design  | \$2,120   |
| M&M | Bridge                   | H.014280.5                          | Bayou Ramos Bridge Girder Study  | \$37,975  |
| M&M | Bridge                   | H.014673.5                          | I-49 US 165 Debonded PPC Girder Rehab  | \$0       |
| M&M | Bridge                   | H.014587                            | LA 302: Kerner Ferry Bridge Repairs PH 2 - Constr Support                        | \$68,714  |
| M&M | Bridge                   | H.013946.6                          | Sunshine Bridge Fender Construction - 2021                                       | \$28,038  |
| M&M | Bridge                   | H.009859.5-2                        | Load Rating of two existing bridges  | \$152,416 |
| M&M | Bridge                   | H.004420.5                          | Bayou Barataria Bridge at Jean Lafitte - Supp 1 and 2                            | \$0       |
| M&M | Bridge                   | H.014406.6                          | Houma Navigation Canal Swing Bridge - Electrical Repair CRED                     | \$24,606  |
| M&M | Bridge                   | H.014673.5-2                        | NSFRP Specification Review   | \$1,336   |
| M&M | Bridge                   | H.014465.5                          | Perry Bridge Rehabilitation - Final Design                                       | \$111,591 |
| M&M | Bridge                   | H.004647.6 (T.O. 1)                 | I-20 MS River Bridge at Vicksburg, - Monitoring                                  | \$119,313 |
| M&M | Bridge                   | H.015028.6                          | Bayou Barataria Bridge MB Replacement - Phase I                                  | \$152,630 |
| M&M | Bridge                   | H.001234.6                          | LA 1 Port Allen Bridge - Geotech Settlement Remediation                          | \$158,024 |
| M&M | Bridge                   | H.010882.6                          | LA18: 4th Street Bridge Rehabilitation Construction Support                      | \$55,115  |
| M&M | Bridge                   | H.009479.6                          | West Larose Lift Bridge Rehabilitation - Const Support                           | \$44,616  |
| M&M | Bridge                   | H.015217.5                          | I-10 Atchafalaya Basin Speed Enforcement PH2                                     | \$2,457   |
| M&M |                          | H.011705.6                          | US 11 Lake Pontchartrain Bridge Rehabilitation - Ph2                             | \$101,576 |

|   |                             |  |  |             |
|---|-----------------------------|--|--|-------------|
| M&M   | Bridge                      | H.004100                                     | Subconsultant: LA 415 to Essen Lane on I-10 and I-12<br>CMAR RCP Plans   | \$495,590   |
| M&M   | Bridge                      | H.001234.6                                   | LA 1: Port Allen Canal Bridge Replacement - Phase 1 CRES   | \$43,302    |
|   |                             | <b>IDIQ Contract<br/>4400020063</b>          | <b>Electrical Services<br/>Statewide</b>   |             |
| M&M   | Bridge                      | H.014212.6                                   | I-10 Atchafalaya Bridge Navigational Lights Repl   | \$53,247    |
| M&M   | Other (Roadway<br>Lighting) | H.014646                                     | I-20: US 165 to Garrett Road Lighting  | \$214,017   |
| M&M   | Other (Roadway<br>Lighting) | H.014555.5                                   | I-10 at LA109 Interchange Lighting (Toomey)  | \$157,679   |
| M&M   | Other (Roadway<br>Lighting) | H.015019.5                                   | I-10 at LA3063 Interchange Lighting (Vinton)   | \$159,747   |
| M&M   | Bridge                      | Contract 44-20156<br>H.011965.6              | Subconsultant: LA 47 IWGO Bridge Rehab CRES  | \$176,252   |
|   |                             | <b>IDIQ Contract<br/>4400014317</b>          | <b>Painting Inspection and Environmental Monitoring with<br/>Construction Engineering and Inspection - Statewide</b> |             |
| M&M   | CEI/OV                      | H.011487.6                                   | LA 182: Berwick Bay Bridge Rehabilitation  | \$2,765,766 |
|   |                             | <b>IDIQ Contract<br/>4400024187</b>          | <b>Bridge Preservation<br/>Statewide</b>   |             |
| M&M   | Other (Roadway<br>Lighting) | H.015504.5                                   | CCC Decorative Lighting  | \$311,772   |
| M&M   | Bridge                      | Contract 44-05673<br>H.011235.5              | I-49 South @ Verot School Road   | \$147,439   |
|   |                             | <b>IDIQ Contract<br/>4400021593</b>          | <b>Bridge Load Rating Services<br/>Statewide</b>   |             |
| M&M   | Bridge                      | H.009859.5                                   | Bridge Load Rating (Task Order 1)  | \$3,592,058 |
| Fugro USA Land,<br>Inc.                       | Geotech                     | H.002868                                     | I49S: Amb.Caffery/US 90 Interchange  | \$249,323   |
| Fugro USA Land,<br>Inc.                       | Geotech                     | H.004957                                     | I12 to Bush Corridor   | \$29,886    |
| Fugro USA Land,<br>Inc.                       | Geotech                     | Contract # 4400019015,<br>H.014235.5         | W Racca Road   | \$21,094    |
| Fugro USA Land,<br>Inc.                       | Geotech                     | Contract # 4400019015,<br>H.014337.5         | Acadian Hills Lane   | \$12,746    |
| Fugro USA Land,<br>Inc.                       | Geotech                     | Contract # 4400019015,<br>H.014226.5         | Aguillard Road   | \$25,636    |
| C. H. Fenstermaker<br>& Associates,<br>L.L.C. | Road                        | Contract No. 4400020291<br>S.P. No. H.012869 | LA 182 (Univ) @ LA 723 (Renaud) Roundabout<br>Lafayette Parish, LA   | \$189,213   |

|   |          |  |   |           |
|---|----------|--|---|-----------|
| C. H. Fenstermaker & Associates, L.L.C. | Road     | Contract No. 4400020019<br>S.P. No. H.011833.5 | St. Mary Street Sidewalks<br>Lafayette Parish, LA   | \$78,437  |
| C. H. Fenstermaker & Associates, L.L.C. | Planning | Contract No. 4400020960                        | IDIQ Contracts for Discovery NFIP CTP<br>Statewide Task Orders 1 & 2 from Halff, Associates, Inc. (prime) | \$2       |
| C. H. Fenstermaker & Associates, L.L.C. | Other    | Contract No. 4400025023<br>S.P. No. H.015335   | Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge<br>Program District 03                    | \$13      |
| Marrero, Couvillon & Associates, LLC    | Road     | H.015052                                       | I-20 Widening Overlay   | \$367,690 |

(Add rows as needed)

DO NOT SUM

\* 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 (please specify). If a firm has more than one past performance evaluation discipline for any single project, the firm can use multiple rows to express the remaining unpaid balance per evaluation discipline.

\*\* Round to the nearest dollar. **Do not** round to the nearest thousands. If there are no active contracts with a remaining unpaid balance, place N/A in the Remaining Unpaid Balance column. NOTE: ALL FIRMS MUST BE REPRESENTED IN THIS TABLE. LEAVING THE "REMAINING UNPAID BALANCE" COLUMN BLANK IS NOT ACCEPTABLE.



**20. Certifications/Licenses:**

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

**21. QA/QC Plan:**

If the advertisement requires submission of a QA/QC plan, include it here. **Otherwise, leave this section blank. If a QA/QC plan is included in this section and was not required by the advertisement, it will be redacted.**

**CONTRACT NO. 4400026585  
STATE PROJECT NO. H.006226.5  
F.A.P. NO. H006226  
POINTE-A-LA-HACHE FERRY LANDING REPLACEMENT  
PLAQUEMINES PARISH**

**QUALITY CONTROL / QUALITY ASSURANCE PLAN  
FOR BRIDGE DESIGN**

**Prepared For:**



**Prepared By:**



**May 17, 2023**

## **M&M QUALITY CONTROL / QUALITY ASSURANCE PLAN**

### **GENERAL**

#### **PROJECT**

#### **QC/QA POLICY**

#### **DEFINITIONS**

#### **ROLES AND RESPONSIBILITY**

#### **QC/QA PROCESS CONTROLS**

#### **SUB-CONSULTANTS**

#### **ELECTRONIC DELIVERABLES**

#### **IDENTIFYING NON-CONFORMING WORK**

#### **SCHEDULES / DELIVERY DATES / BUDGETS**

#### **ADMINISTRATIVE QUALITY MANGEMENT PROCEDURES**

#### **DOCUMENT CONTROL**

#### **TECHNICAL QUALITY MANAGEMENT PROCEDURES**

#### **INTERNAL QUALITY AUDITING**

#### **EXTERNAL AUDITS**

#### **QC/QA CERTIFICATION**

#### **ATTACHMENTS 1 - 11**

### **GENERAL**

Quality is obtained when design and/or rating calculations, plans, specifications and reports, correspondence, invoices and oral communication, related to a particular project, are delivered to the owner in an accurate, error-free, professional, and timely manner, and in a presentation consistent with the owner's requirements.

Modjeski and Masters Quality Management Plan relates to both the technical and administrative aspects of the full engineering service life cycle of a project, including proposal preparation, staffing, design activities, field activities, internal and external communication, project review, field operations, including inspection and construction observation, and document storage. The plan is applicable to all engineering services offered by the firm including: bridge design, bridge rating, highway design, bridge rehabilitation, bridge inspection, mechanical design, electrical design, instrumentation, geotechnical investigations/design, construction consultation, inspection of construction, research and code development. Checklists and forms are often developed to monitor special needs of the owner and/or a specific engineering activity.

## **PROJECT**

This project consists of surveying, designing and construction support to construct two (2) new ferry landings located in Plaquemines Parish, Louisiana (Pointe-A-La-Hache) – one on each side of the Mississippi River approximately ¼ mile upstream of the current ferry location.

## **QC/QA POLICY**

Modjeski and Masters' Team QC/QA policy is to meet or exceed the QC/QA requirements of the following documents, in addition to those described in this document.

1. AASHTO Standards – The American Association of State Highway Transportation Officials
2. AASHTO – A Policy on Geometric Design of Highways and Streets –
3. ASTM Standards – <https://www.astm.org/BOOKSTORE/BOS/index.html>
4. CyberSecurity Training
5. DOTD – Bridge Design and Evaluation Manual (BDEM)
6. DOTD – Complete Streets –
7. DOTD – Construction Contract Administration Manual
8. DOTD – Consultant Contract Services Manual
9. DOTD – Hydraulics Manual
10. DOTD – Location and Survey Manual
11. DOTD – Addendum “A” to the Location & Survey Manual
12. DOTD – Louisiana Standard Specifications for Roads and Bridges
13. DOTD – Materials Sampling Manual
14. DOTD – Minimum Design Guidelines
15. DOTD – Off-System Highway Bridge Program Guidelines
16. DOTD – Roadway Design Procedures and Details Manual
17. DOTD – Stage 1 Planning/Environmental Manual of Standard Practice
18. DOTD – Testing Procedures Manual
19. DOTD – Traffic Engineering Manual
20. DOTD – Traffic Engineering Process and Report
21. DOTD – Traffic Signal Manual
22. e-CFR – Electronic Code of Federal Regulations (all applicable)
23. FHWA – Bridge Inspector’s Reference Manual (BIRM)
24. FHWA – Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) –
25. National Electrical Safety Code (NESC)
26. NFPA 70 – National Electrical Code (NEC)
27. NEPA – National Environmental Policy Act

## DEFINITIONS

Quality Control (QC): A process of applying systematic procedures to ensure accuracy and consistency during electrical design calculation, electrical inspections, analyses and ratings and their documentations. It includes procedures for checking the accuracy of the calculations and consistency of design drawings, detecting and correcting design omissions and errors before the drawings are finalized, and verifying the design criteria have adequately been applied, and any past changes to the electrical system have been considered. QC is to be applied to all stages of the electrical analysis, design, including plan and document reviews related inspections and instrumentations. QC is to be applied also to verifying the specifications for the electrical service equipment are adequate for the service and operations loads.

Quality Assurance (QA): A systematic process aimed to ensure that the quality control process was followed during the development of electrical design plans, specifications, inspection and instrumentation reports. It includes procedures of reviewing the work to ensure that quality control is in place and effective in preventing mistakes and providing consistency in the development of electrical design plans, specifications and reports.

Supervisor or Team Leader: Project Manager or task assignee, responsible for overseeing the project and the personnel assigned to the project.

Design Engineer: Engineer, licensed by the State of Louisiana as a professional engineer or certified as an engineering intern, directly responsible for the development of design calculations, reports, drawings and other related documents with a level of technical skills and experience commensurate with the complexity of the subject structure.

Detailer: Engineer or technician directly responsible for the creation and development of CAD drawings.

Design Checker: Engineer responsible for performing a full technical review of the electrical analyses, design calculations, reports, drawings, specifications and cost estimate with a level of technical skills and experience commensurate with the complexity of the subject structure. If the information being checked was developed by an engineering intern, the design checker shall be an engineer licenses by the State of Louisiana as a professional engineer.

Detail Checker: Engineer or technician responsible for performing a full review of the CAD drawings ensuring that the drawings are in accordance with the design information and CAD standards.

Reviewer: Engineer, licensed by the State of Louisiana as a professional engineer, responsible for performing QA procedures for assuring that QA procedures have been performed as outlined in this policy and in accordance with LADOTD Bridge Design practices, policies and

procedures. The Reviewer must have substantial technical skills and experience in the design of similar electrical systems and be independent of production.

Engineer of Record: The Engineer of Record, licensed by the State of Louisiana as a professional engineer, is responsible for the design shown on the plans and/or other deliverables and whose seal appears on the title sheet of the plans and/or deliverables. He typically ensures that the QC/QA certifications are signed by all parties, all design calculations and reports are included, and the names of all personnel are correctly shown.

Independent Technical Reviewer: Engineer who completes an independent review of the design calculations and is part of the consultant team. Independent Technical Reviewer must have experience reviewing tasks that meet or exceed those of the designer and or checker.

Peer Review: Engineering group with no prior involvement in the project, performing an independent check of the design calculations and results. Peer reviewers may not be employed by the same consultant.

## **RESPONSIBILITY AND AUTHORITY**

Modjeski and Masters (M&M), as the Prime Consultant, will be fully responsible for QC/QA of their work as well as the work of all Sub-consultants. All project submittals will include a QC/QA certification that the submittals meet the requirements of the QC/QA plan document. The LADOTD shall not perform QC/QA of the consultant's work and the responsibilities of the LADOTD for consultant projects shall be limited to those listed in the LADOTD Bridge Design and Evaluation Manual.

The Principal-In-Charge (PIC) and Project Manager (PM) assigned to the Retainer will be responsible to ensure that the requirements of this QC/QA Plan are met by all members of the M&M Team. M&M will be assisted by four (4) Sub-consultants for this work:

| <b>Sub-Consultant</b>                | <b>Services Provided</b>                     |
|--------------------------------------|--|
| Fugro USA Land, Inc.                 | Geotechnical Exploration, Testing and Design |
| C. H. Fenstermaker & Associates, LLC | Topographic and Hydrographic Surveying       |
| Marrero Couvillon & Associates, LLC  | Architectural Design                         |

Principal-In-Charge (PIC) in consultation with the Project Manager (PM) will assign a Supervisor/Team Leader, Design Engineer, Detailer, Design Checker, Detail Checker and Reviewer to each task order, with a level of technical skills and experience commensurate with the complexity of the structures included.

A specific organizational structure will be developed for each task order outlining responsibilities for every role of the project. See Attachment 1 for the overall organization structure.

Sub-consultants are required to follow the same QC/QA Plan. Modjeski and Masters will assist the Sub-consultants with their QC/QA activities by:

- Meeting with each Sub-consultant to go over this QC/QA Plan and its implementation
- Conducting technical meetings
- Providing and coordinating technical assistance
- Providing training materials
- Developing checklists and standard forms specific to each task order
- Performing quality audits

## **QC/QA PROCESS CONTROLS**

### *a. Project Initiation*

During the initial identification and proposal phase of each task order the Principal-in-Charge (PIC) and Project Manager (PM) determine the personnel that will be assigned to the project and their responsibilities. When possible, these individuals will participate in the initial conceptualization of the project and manpower estimating, as these initial activities identify the path to project completion. Design tasks shall be assigned to engineers qualified by virtue of education and/or experience commensurate with the complexity of the subject project.

At the immediate initiation of the project, the PM will prepare a project schedule indicating the major milestone dates and deliverable dates on the project and, if required, submit it to the LADOTD for approval.

The staff assigned to the project will include an appropriate Supervisor/Team Leader, Design Engineer, Detailer, Design Checker, Detail Checker and Reviewer. Additional senior staff with experience related to the project will be assigned where appropriate. As additional staff joins the project, they will have a designated mentor among the senior staff to act as the first source for advice and counsel on technical and administrative matters. The technical scope of work contained in the Agreement will be made available to all individuals working on the project.



*b. Project Design Criteria*

Design criteria specific for each project will be developed by the PM prior to initiating the design process and will be submitted to the LADOTD for review and approval. Any design assumptions made or design exceptions obtained will be listed in the design criteria and referenced in the design calculations and drawings as appropriate. A design criteria checklist as developed by the LADOTD is included in Attachment 7.

*c. Development of Designs and Plan Details*

During the design phase, the design engineer will follow the design criteria established for the project. Electrical/Photometric analyses and preliminary plans will be developed first and approved by the PM prior to proceeding with the design of structural components. The design calculations will be organized and maintained in a standard calculation book format. The calculation book checklist as developed by the LADOTD is included in Attachment 8. The design engineer will communicate and coordinate with the detailer and supervise the detailing work to ensure that the drawings adequately and accurately present the design information.

*d. Quality Control of Designs and Plan Details*

All work will be checked in order to minimize errors. If the design engineer is an engineer intern, the design checker will be a professional engineer registered in the State of Louisiana. The design checker will verify the accuracy of the designer's calculations, pay items, quantities, special provisions including Non-Standard Items, and cost estimate and will also ensure that the drawings adequately and accurately present the design information. The designer's calculations are considered the calculations of record and will be updated to correct any errors or omissions discovered by the design checker.

The detail checker will ensure that the drawings are in accordance with the design information and CAD standards. In addition, all dimensions and quantity calculations will be verified.

After the completion of the design and detail check (which shall be completed no later than the 95% Final Plans stage), the designer will prepare and provide to the Reviewer a QA information package which includes the following:

- QA information package check list (see Attachment 9)
- Calculation Book(s)
- Plans
- Special provisions including Non-Standard Items
- Cost Estimate
- Any other relevant documents (checklists, review comments, etc.)

*e. Quality Assurance of Designs and Plan Details by the Reviewer*

The Reviewer for M&M will perform a cursory review of all documents in the QA information package focusing on the following items:

- Constructability of the Plan Details
- Areas of Critical Importance
- Areas where mistakes are typically found
- Areas that are new to the design practice

After all issues discovered during the QA process are rectified, the design calculations, plan details, special provisions and cost estimate shall be considered as final and the QC/QA certification (see Attachment 5) shall be signed by the designer, design checker, detailer, detail checker, and reviewer.

*f. Peer Review*

When requested by the LADOTD Bridge Design Engineer Administrator, M&M will conduct peer reviews by team members or engage the services of a Sub-consultant licensed by the State of Louisiana as a professional engineer to perform a peer review. The Sub-consultant chosen for the peer review will have no prior involvement in the project but will have substantial experience in the design of similar structures. All peer review comments will be submitted to the LADOTD and the design team for evaluation and resolution. All resolutions agreed upon by the designer, peer reviewer and the LADOTD will be incorporated into the final design. A Peer Review Resolution agreement (see Attachment 10) will be signed by the peer reviewer, the PM and an LADOTD representative.

*g. Sealing of Design Calculation Book and Plans by the Engineer of Record (EOR)*

In addition to the previously defined requirements for the Engineer of Record, the Engineer of Record shall be responsible for the following tasks:

- Ensure the QC/QA certification is signed by all responsible parties.
- Ensure the geotechnical design information shown on the plans is co-stamped by a Geotechnical Engineer and the hydraulic information shown on bridge plans is co-stamped by a Hydraulic Engineer. When more than one engineering stamp is required on a sheet, the responsibilities for each engineering stamp shall be clearly defined.
- Assemble design calculations from all designers including the final geotechnical analysis report and the hydraulic report from the geotechnical engineer and the hydraulic engineer, finalize the calculation book, and seal the cover sheet of the calculation book.
- Ensure the names of the designer, design checker, detailer, detail checker, and reviewer are correctly shown on the title block of each plan sheet.
- Stamp all plan sheets or designate a designer, design checker, or reviewer who shall be licensed by the State of Louisiana as a professional engineer to stamp the

sheets developed under their supervision.

- The EOR must stamp the general notes sheets.
- Ensure all special provisions are accurately shown on the construction proposal. The special provisions are typically stamped by the Specification Engineer as part of the construction proposal; however, if the Specification Engineer is not qualified or not willing to stamp the special provisions, the EOR will stamp these provisions.
- Archiving all bridge design files including calculation books, plans, special provisions, cost estimate and other pertinent documents in accordance with the LADOTD Bridge Design Section records retention policy.

*i. QC/QA for Design Activities after Final Plans are Signed by the Chief Engineer*

The same QC/QA process above shall be applied to all design activities such as plan revisions, change orders, etc. occurring after the final plans are signed by the Chief Engineer.

*j. Archiving Electrical Design Files*

The PM will deliver all electrical design files to the LADOTD Bridge Task Manger no later than 30 calendar days after the stamped final plans are delivered. Any revisions made to these documents due to plan revisions and change orders will be delivered with the signed plan revisions or change order sheets. The final calculation book and other final design documents for all projects including in-house and consultant projects will be uploaded to the archiving location designated in the record retention policy within 30 calendar days after the stamped final plans are delivered.

*k. Project Monitoring and Coordination*

The PM will monitor the state of the project's progress, any unique technical issues that need to be resolved, and anticipated needs for increased or decreased staffing and report to the PIC.

The PM will be responsible to see that M&M internal minutes are kept at meetings with the LADOTD, Sub-consultants, and in-house project meetings. All the technical information in the minutes will be made available to all individuals working on the project. Where action is required, an individual will be identified as having been assigned that responsibility and a place shall be provided for the PM to indicate when that action has been completed.

All telephone contacts with the LADOTD, fellow design team members or Sub-consultants which lead to decisions or assignments will be recorded on a telephone log sheet. The telephone log sheet will be circulated to all individuals involved, and will become part of the correspondence file for the project (See Attachment 2 for an example telephone log). The log's project title and task order number will be edited as required for each project.

The PM will be responsible for establishing and maintaining a task list, which will identify the anticipated tasks, the team leaders, design engineers, detailers, design checkers, detail checkers and reviewers.

The PIC and the PM are responsible for being current with the project as it develops and for resolving all comments made by the LADOTD and document the resolution.

The PM, or his/her discipline reviewer designee, is responsible for overall quality assurance of the project deliverables.

All calculations and reports, which become superseded during the course of the project, will be clearly identified as being superseded and will be filed separately from the current work. Superseded work will not be discarded until the end of the project.

State-of-the-art computer hardware and software will be used to monitor and track the project development process. The software packages to be used are Microsoft Excel and Deltek Vision.

#### *l. Communication Plan*

All project team communication will flow through the PM or his/her team leader designee. This includes all communication with the LADOTD and Sub-consultants.

The methods of communication to be used, listed in order of decreasing preference, include: face to face (not feasible in many cases), telephone, e-mail, express mail and regular mail.

#### *m. Electrical Related Inspections and Instrumentations*

All field activities will be conducted by certified inspectors and will be supervised by a Registered Professional Engineer. The PM will identify one member of a field party to serve as a Safety Officer. It will be the Safety Officer's responsibility to:

- Identify local emergency services prior to the start of field work
- Review inspection and field safety requirements of the client, OSHA and Modjeski and Masters, Inc. with the field crew prior to the start of work,
- Verify that safety equipment is being properly used, and
- Supervise any accident reporting that may be necessary.

All field activities will be summarized in a report. Depending on the type of project, this report may be a memorandum to the files or a formal report to be submitted to a client. All reports will contain sufficient descriptions, measurements, sketches, or photographs to document conditions found and will undergo QC/QA reviews.

*n. Construction Support Phase*

All design activities in the construction support phase will also adhere to the requirements and policies described in this document. These activities include but are not limited to the following:

- Providing responses to Requests for Information (RFI)
- Reviewing Shop Drawings
- Development of Plan Changes/Change Orders

M&M will ensure timely responses to RFIs submitted by the Contractor and/or the LADOTD. M&M will also ensure that the design engineers and/or design checkers from the design phase will participate in the RFI response process.

M&M will ensure that the design engineers and/or design checkers from the design phase will participate in the shop drawing review process. Shop drawings will be reviewed to ensure compliance with design details and project requirements included in the plan drawings. M&M will also review the submitted shop drawings for compliance with the requirements set forth in the Louisiana Standard Specifications for Roads and Bridges. All comments will be returned to the Contractor for agreement, resolution and drawing revisions. Stamps to be applied to shop drawings during the intermediate and final review will adhere to the policies set forth in Bridge Design Technical Memorandum No. 75 and the Louisiana Standard Specifications for Roads and Bridges, Latest Edition.

M&M will also distribute the final shop drawings according to the distribution list provided by the LADOTD Project Manager or LADOTD Bridge Task Manager. Shop drawing distribution letters as provided in BDTM.75 will be used for each distribution.

Plan changes will adhere to all requirements and policies set forth in this document including the CAD Standards and Electronic Deliverables Policy.

## **SUB-CONSULTANTS**

The Sub-consultants for a given task order and their general responsibilities under the contract are to be listed in Attachment 4 of this document.

Upon receipt of Notice-To-Proceed from the LADOTD, the PM will provide and confirm with each Sub-consultant, the scope of services and upper budget limit for the work. Invoicing procedures will be provided to expedite the billing process.

Each Sub-consultant will be asked to provide monthly status reports, which will include a summary of the progress to-date, and which will identify any issues encountered with its work

during the period, any decisions or information from M&M that is delaying completion of its work, and the anticipated work for the next reporting period. Each Sub-consultant will be asked to provide interim results of their work, so that M&M can assess the information completed to-date, and either confirm that the task is being completed as scoped, or make the necessary adjustments to ensure that the work is being performed as scoped. All results provided by the Sub-consultants will be reviewed by the appropriate M&M staff prior to the information being used for preparation of deliverables to the LADOTD.

Internal team meetings will be held on a routine basis, and may or may not include all Team members, depending on the major tasks underway at that point in the schedule. Meeting minutes will be recorded and distributed by M&M to the Sub-consultants as deemed appropriate.

Information provided by the LADOTD will be assessed by M&M, and forwarded to the Sub-consultant as necessary for information and action.

## **ELECTRONIC DELIVERABLES**

M&M will produce all electronic deliverables in conformance with the DOTD Software and Deliverables Standards for Electronic Plans document (see Attachment 11). In addition, M&M will ensure that all Sub-consultants submit their electronic deliverables in conformance with the same standards.

M&M and all Sub-consultants will upload or check-in electronic deliverables directly into the LADOTD ProjectWise repository at each plan delivery milestone. In addition, M&M will perform the following operations at each milestone:

- Upload or check in CAD plan deliverables to the discipline “Plans” folder
- Apply and maintain indexing attributes to CAD plans (and other deliverables as needed)
- Publish to PDF format plan submittals in ProjectWise using automated publishing tools
- Digitally sign PDF format plan submittals in ProjectWise according to LADOTD standards and procedures. Signatures will be applied in the appropriate signature blocks with electronic seals and Title Sheets.
- Provide ControlCAD reports in ProjectWise and utilize these reports to correct indexing attributes and CAD standards of all electronic .DGN files.

M&M will apply patches to CAD Standard Resources and install updates to software as needed. In addition, M&M will install major updates to software versions and CAD Standard Resources in a timely manner or as directed by the LADOTD.

## **IDENTIFYING NON-CONFORMING WORK**

The Project Manager or his/her designee will monitor day-to-day activities of the Design Team to confirm that the work is being performed as described in the scope of services and maintains the quality level expectations for the project, and it is within the established budget constraints. Discipline team leaders and reviewers will conduct quality control reviews at regularly scheduled intervals between and up to major milestone submissions throughout the course of the project. The schedule for these reviews will be established at the beginning of each major phase of the project by the Project Manager and the quality assurance reviewers based upon the agreed upon task schedule. Regular staff meetings will be held to discuss interim results, and to quickly identify work that may be considered non-conforming to the requirements of the project. Meeting minutes will indicate the extent of the non-conforming work, and action taken to correct the work and prevent re-occurrence for the remainder of the project. The impact of any non-conforming work on external parties will be assessed, and affected parties will be notified as required. Corrected information will be provided to the affected parties as soon as practical. The results of non-conforming work will be sent to a "dead" file, and disposed of at the completion of the project. With day-to-day monitoring of activities, and regular staff meetings, the potential for, and associated costs of, non-conforming work will be minimized.

M&M's Sub-consultants will also be asked to monitor their activities for non-conforming work in a similar fashion, either identified internally, or through reviews of their work by M&M.

## **SCHEDULES / DELIVERY DATES / BUDGETS**

The Project Manager will establish accounting phase codes for the project that follow the task designations included in the technical and price proposal. The associated budget for each phase based on negotiated man-hours will also be developed. Task codes will be established for each subtask within a particular designated proposal task. This information is then provided to the Accounting Department in order to track project man-hours used and job costs.

In addition, when deemed expedient by the Project Manager, project specific progress spreadsheets will be used to monitor efforts, and provide a second weekly means to track progress and project percent complete.

Quality assurance reviews will be conducted at regular intervals within each major phase of the project. Milestone submission dates will be used to develop the quality assurance review schedule to provide quality deliverables, and to ensure that sufficient time is included to perform the review, as well as permit the design team to respond and/or correct non-conforming work without compromising the overall submission schedule.

M&M will provide a project schedule to the LADOTD for record that identifies key deliverables and their milestone dates. This schedule will conform to the milestone dates established by the LADOTD at the project's start unless a revised schedule has been agreed upon by the LADOTD subsequent to the project start date. The schedule will be updated on a monthly basis to confirm that the project is proceeding as originally anticipated.

In the event a task order falls behind the projected schedule, an assessment will be made by the Project Manager or his designee on how to correct the issue. Potential corrective actions will include more staff added to the task, re-assignment of more specialized staff to the task, or perhaps a re-assessment of the schedule to determine if adjustments can be made to accommodate the delay in the task under concern, without impacting future project milestones.

### **ADMINISTRATIVE QUALITY MANGEMENT PROCEDURES**

The PIC and PM are responsible for the preparation of the technical and price proposals for the project, including both the original agreement and subsequent supplements/work orders. The PIC will review all proposals prior to submission to the LADOTD. A copy of the executed agreement(s) is kept on file in the Accounting Department. This file is readily available to management staff.

Estimation of percent completion and invoice costs will be performed by the PM, with assistance from the discipline team leaders. Using project specific progress tracking spreadsheets, and input from senior staff on completion of work for the various tasks performed for the period under consideration, a project percent complete will be established. This information will be compared against the projected percent compete per the design schedule at that time to determine if the project is on or ahead of schedule, or what corrective actions are necessary to get back on schedule.

### **DOCUMENT CONTROL**

#### *a. Input*

Project specific files are to be established at the beginning of the project. Information is to be filed using the project number as the primary element followed by numerals set up for the project (for example 3000-1 with 3000 being the job number and the numeral 1 being general correspondence and so on) or in accordance with a file numbering system established by the LADOTD.



Information received by the PM is assessed and a copy forwarded to appropriate staff primarily responsible for the task. All senior staff will be provided with the file copy for review and information purposes, in order to keep them aware of associated tasks being performed in conjunction with their work. Electronic documents, including e-mail, are kept on our secure server that all staff can access using the same file naming convention.

All staff will be provided access to current design codes, and addendums which are provided by the Firm when available. Staff will be notified of project specific design criteria and standards, either at staff meetings, or by receipt of memorandum, or by e-mail.

Comments received from the LADOTD or Sub-consultants are reviewed by the PM or his designee, and the appropriate staff made aware of the comments for their response. If a date of response is not included with the comment document, the Project Manager will establish a date, and follow-up with the appropriate staff to make certain that resolution is occurring in a timely manner. The PM will provide M&M's response to the LADOTD and await a follow-up reply.

*b. Output*

The PM or his designee will confirm that the design staff have been supplied and are using the most current project information, project specific design criteria, design specifications and standards during the course of the project. Staff will be notified either through face-to-face meetings, inter-office mail or electronic mail of updates to information/specifications/criteria that will impact their work.

Quality assurance reviews will be conducted to confirm that the assigned project staff is using the correct project information, design criteria, specifications and standards for completion of their work.

## **TECHNICAL QUALITY MANAGEMENT PROCEDURES**

Specific design procedures for this QC/QA Plan include the following:

- The PM or his team leader designee will identify the design criteria established for each task order, and ensure that the staff is kept updated on any changes or additions to the criteria as the project progresses. Project specific exceptions to standard design specifications discussed with the LADOTD will be documented. Reports and technical documents will be reviewed by the PM or his team leader designee to confirm that the results and/or recommendations utilize the current criteria. Reports and documents will be provided to the quality assurance reviewer to assess the results and recommendations of the design team.

- Continuing training is part of M&M's culture. M&M Design Engineers are constantly being trained by the more senior staff and by attending relevant courses and conferences, and these efforts shall continue. The training materials and references collected are readily available in the office, and will also be made available to the Sub-consultants.
- Design Engineers shall perform self-checking as the work progresses using in-house developed self-checking guidelines. They shall also perform cross checking as needed as the work progresses, when any team member is unsure of the results.
- Design engineers shall provide calculations for formal checking that include assumptions, design criteria and all reference material used to develop the calculations. Calculations shall be in a neat and orderly format. Individual sheet (or sheets) considered as trial designs, or no longer valid, shall be marked to prevent checking of preliminary or superseded work. All formal design calculation sheets will be checked, initialed and dated by the originator and the checker. The quality assurance reviewer will confirm that the established checking procedures and Quality Review Color Codes contained in Attachment 6 have been followed, and that the calculations are complete.
- Any and all LADOTD approved computer programs to be used for a project will have been checked independently by M&M as part of the approval process. Program input is checked to confirm that the appropriate geometry, section properties and material properties have been used, and the output assessed to make certain that the results are trending in the right direction, based on both the current project, as well as past experience, prior to the results being used to complete the design. It is of utmost importance that the designer understands when computer results are reasonable. Checks are made using hand calculations or different computer programs used in parallel. Two engineers working in parallel may be needed when using software that requires a high degree of accuracy and detail. Spreadsheets are checked to confirm that the appropriate design criteria and specifications are being utilized, and that the results of the analysis programs are being transferred correctly and appropriate load factors are being applied.
- Drawings for the design will be developed by qualified technicians and reviewed and checked by engineers or qualified technicians and will meet the requirements of the LADOTD. Drawings will be initialed and/or signed, as applicable, by the originator and the checker. Drawings marked up with changes and/or corrections resulting from the review process are returned to the designer for action. Upon completion of the revisions, the team leader will compare the revised drawings with the marked up review drawings to ensure that all comments have been incorporated into the plans. The completed drawings and mark up's will be provided to the quality assurance reviewer to confirm that the necessary corrections have been completed, the Quality Review Color Codes contained in Attachment 6 have been followed, as well as assess the drawings for overall completeness and clarity.

- Special provisions for non-standard items will be reviewed by the PM or discipline lead for clarity, as well as consistency with the contract plans. Conformance to the LADOTD's standard specifications (content and format) will also be checked. The quality assurance reviewer will assess the special provisions for completeness and compatibility with contract plans.
- Construction cost estimates will be developed based on estimated quantities for the various pay items associated with the design and in accordance with the LADOTD's requirements. An in-house cost estimate will be determined based on M&M plan details. In addition, industry experts (suppliers, fabricators and contractors) may be consulted in development of the estimates. Current bid price (averages) and similar recently bid and/or completed projects will also be reviewed to confirm that the estimate is reasonable. The PM will review the information used to create the cost estimate. The completed cost estimate will be provided to the quality assurance reviewer to assess if the costs appear reasonable for the work included in the contract plans and specifications.
- The PM or a qualified reviewer designee will review all calculations, drawings and specifications to determine that work is being completed in accordance with applicable specifications and the requirements of the LADOTD. This is not to be a number-by-number, line-by-line review, but is to be sufficiently in-depth to identify significant shortcomings in content or presentation, and to determine that the intent of design specifications is being met. This review also includes checking the constructability of the project.
- Completed LADOTD quality assurance certification forms will be submitted for the project. A copy of the certification forms are attached (see Attachments 3 and 5.)
- The PM will be responsible to determine that the project is successfully and completely finalized. This will include:
  - the filing and indexing of design calculations and record copies of drawings,
  - confirmation that the correspondence file and accounting files are in their proper locations,
  - confirmation of the delivery of all required drawings, calculations, reports, correspondence and other documentation to the LADOTD., and
  - confirmation that quality assurance records and certification forms have been filed.
- Records will include the following items:
  - non-conformance and corrective action reports
  - drawings, procedures and the QA/QC plan
  - design input, output and verification
  - certification records
- All files, storage boxes or other containers shall be clearly identified with the proper name of the project, the colloquial name, if applicable, the year completed, the LADOTD's project

identification number and M&M's project number. These will be transmitted to the LADOTD if required. The accounting office will be notified that the project is complete and that final invoicing may take place.

## **INTERNAL QUALITY AUDITING**

An internal QA audit schedule for each project will be developed. The schedule will be a function of the length of the Task order; shorter task orders will require more frequent audits versus longer projects. Individuals named by the PIC will be performing quality assurance reviews, and will be primarily responsible for confirming that the QC/QA plan is being implemented by the PM on the project. The results of these quality assurance audits will be provided to the PM. If any deficiencies are noted, the PM will be responsible for taking corrective action, follow-up and providing documentation of the actions taken.

Frequency of review meetings for the following items is anticipated to be as follows:

- Schedules – monthly
- Scope – monthly
- Budget – monthly
- Team organization adjustments – bi-weekly (max), or as needed by the project schedule
- Approvals – as needed
- Coordination – at the discretion of the Design Team

During the course of the project, periodic reviews of the policies and procedures in QC/QA Plan will be reviewed by the PM and the quality assurance reviewers to ensure usability and compatibility with interfacing procedures.

Assigned project staff and new staff as they are assigned to the project will be made aware of the specific QA/QC controls established for the project by the PM or his designee. Senior staff will mentor new staff on policies and procedures used to ensure a quality deliverable. The quality assurance reviewers will also monitor the staff to confirm that the quality management plan has been properly communicated to the assigned staff, and that modifications to the plan are communicated to all staff throughout the course of the project.

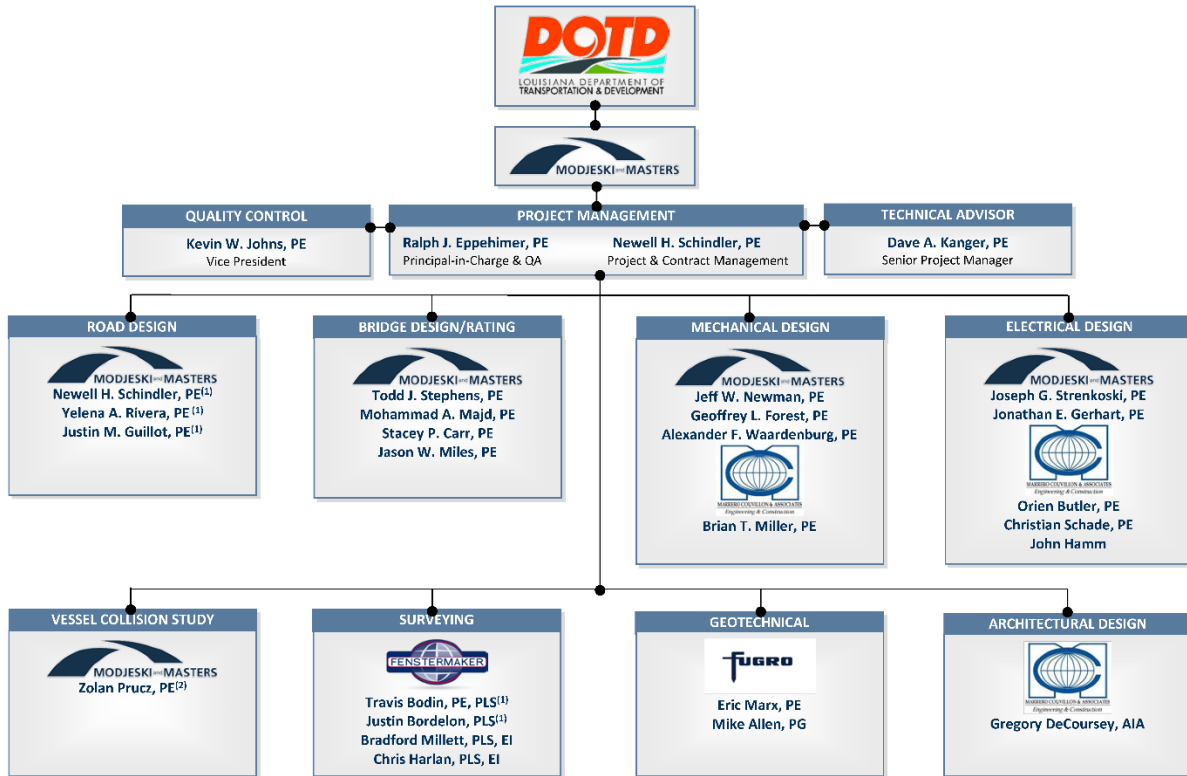
## **EXTERNAL AUDITS**

M&M will accommodate and facilitate LADOTD audits at various times throughout the duration of the project if required.

## **QC/QA CERTIFICATION**

At the end of each project the Department's QC/QA Certification Form (LADOTD BDEM Chapter 3, Appendix D) will be completed and submitted along with the Certification Form (LADOTD BDEM Chapter 3, Appendix I). See Attachments 5 and 3 respectively.

# ATTACHMENT 1 - QUALITY CONTROL / QUALITY ASSURANCE PLAN ORGANIZATION CHART



(1) Work Zone Training

(2) Part-Time (Available As-needed)

**ATTACHMENT 2 – TELEPHONE LOG**



**TELEPHONE LOG**

|  |       |                          |                     |                          |                     |
|--|-------|--------------------------|---------------------|--------------------------|---------------------|
| DATE:  | TIME: | <input type="checkbox"/> | URGENT              | <input type="checkbox"/> | OUTGOING CALL       |
|  |       | <input type="checkbox"/> | INCOMING CALL       | <input type="checkbox"/> | RETURNING YOUR CALL |
| YOUR NAME:   |       |                          |                     |                          |                     |
| CALLER/PERSON CALLED:                                      |       |                          |                     |                          |                     |
| PHONE NO:  |       |                          |                     |                          |                     |
| PN: <b>XXXX</b>  |       |                          |                     |                          |                     |
| PROJECT: <b>XXXXX</b> <b>Bridge Task Order #: XXXXXXXX</b> |       |                          |                     |                          |                     |
| SUBJECT DISCUSSED  |       |                          | ACTIONS TO BE TAKEN |                          |                     |
|  |       |                          |                     |                          |                     |

**ATTACHMENT 3 – CERTIFICATION FORM**

**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



**ATTACHMENT 4 – LIST OF SUB-CONSULTANTS AND FUNCTION**

| <b>Sub-Consultant</b>                | <b>Services Provided</b>                     |
|--------------------------------------|--|
| Fugro USA Land, Inc.                 | Geotechnical Exploration, Testing and Design |
| C. H. Fenstermaker & Associates, LLC | Topographic and Hydrographic Surveying       |
| Marrero Couvillon & Associates, LLC  | Architectural Design                         |

## ATTACHMENT 5 – QC-QA CERTIFICATION

### Appendix D QC/QA Certification

Project No.:  
Project Name:

We, the undersigned designers, raters, 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                   |      |                     |                         |                                |                            |           |

## ATTACHMENT 6 – QUALITY REVIEW COLOR CODE

The originator will generate printed or copied reports, calculations, drawings, or other similar originals.

---

The checker will:

Highlight in **YELLOW** everything that is correct.

Strike in **RED** everything that is ~~incorrect~~ <sup>incorrect</sup> or needs to be deleted.

Write all additions and corrections in **GREEN**.

---

The originator will then:

Back-check in **BLUE**.

All comments that do not require edits are to be made in **BLACK** ink or pencil.

## **ATTACHMENT 7 – EXAMPLE OF DESIGN CRITERIA CHECKLIST**

(This is an illustrative example as provided by the LADOTD. Specific checklists and forms will be developed for each bridge type and task order)

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  $\eta_D$ , redundancy factor  $\eta_R$ , and operational importance factor  $\eta_I$  shall be listed in this section.

— **Design Loads**

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

— **Limit States**

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

— **Bridge Barrier**

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

— **Guardrail**

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

— **Approach Slab**

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

— **Deck and Deck Drainage**

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

— **Bearing**

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

— **Joint**

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

— **Superstructure**

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

— **Substructure**

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

— **Piles and Drilled Shafts**

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

— **Geotechnical Design**

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

— **Mechanical Design**

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

— **Electrical/Lighting Design**

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

— **As-Designed Bridge Rating Criteria**

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

— **Software**

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

## **ATTACHMENT 8 – 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**
- **Photometric Analysis Report**
- **Final Hydraulic Analysis Report from Hydraulic Engineer**
- **Final Geotechnical Analysis Report from Geotechnical Engineer**
- **Electrical Design Calculations**
- **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.

**ATTACHMENT 9 – QUALITY ASSURANCE INFORMATION PACKAGE CHECKLIST**

Project No.:

Project Description:

- Calculation Book
- Plans
- Special Provisions
- Cost Estimate
- Other Documents \_\_\_\_\_



## **ATTACHMENT 10 – 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.

| <b>Team Members</b>       | <b>Name</b> | <b>Signature</b> |
|---------------------------|-------------|------------------|
| Peer Reviewer             |             |                  |
| Supervisor or Team Leader |             |                  |
| LADOTD Representative     |             |                  |

**ATTACHMENT 11 – LADOTD SOFTWARE AND DELIVERABLES STANDARDS FOR  
ELECTRONIC PLANS**

| LaDOTD Software and Deliverable Standards for Electronic Plans   |  |  |   |   |
|--|--|--|---|---|
| Revised May 2018   |  |  |   |   |
| Function   | LaDOTD Software Standards  | Consultant Software Standards  | Deliverables  | Comments  |
| CAD Drafting   | Bentley MicroStation V8i<br>V8.11.07.443 (SS2) or V8.11.09.832 (SS4)           | Bentley MicroStation V8i<br>V8.11.07.443 (SS2) or V8.11.09.832 (SS4)           | MicroStation DGN  | <ul style="list-style-type: none"> <li>Consultants must upload MicroStation plan submittals directly into the ProjectWise discipline "Plans" folder.</li> </ul>   |
| CAD Standards Management   | Altra CADconform V8.00.70 (MicroStation)                                       | Altra CADconform V8.00.70 (MicroStation)                                       | MicroStation DGN (with valid CADconform certification stamp)      | <ul style="list-style-type: none"> <li>Certify the DGN files as DOTD CAD Standard Compliant (indicated by valid compliance stamp) using CADconform running on MicroStation.</li> </ul>  |
| CAD Standards Quality Authentication   | Altra DMSconform "Check CAD Standards" (Administered by LaDOTD in ProjectWise) | Altra DMSconform "Check CAD Standards" (Administered by LaDOTD in ProjectWise) | Approved ControlCAD Microsoft Excel report                        | <ul style="list-style-type: none"> <li>DOTD reviewers use the DMSconform "Check CAD Standards" function to check for valid CADconform certification stamps and for several other compliance factors.</li> <li>Status reports must reflect 100% compliance by 60% Final Plans (or sooner if specified by the Project Manager). Substandard deliverables must be approved and documented (as to reason) by the Project Manager.</li> </ul>  |
| CAD Attributes Quality Authentication  | Altra DMSconform "Check Attributes" (Administered by LaDOTD in ProjectWise)    | DMSconform "Check Attributes" (Administered by LaDOTD in ProjectWise)          | Approved ControlCAD Microsoft Excel report                        | <ul style="list-style-type: none"> <li>DOTD reviewers use the DMSconform "Check Attributes" function to check for completed indexing attribute values.</li> <li>Status reports must reflect 100% compliance by 60% Final Plans (or sooner if specified by the Project Manager). Substandard deliverables must be approved and documented (as to reason) by the Project Manager.</li> </ul>  |
| CAD Plotting   | Bentley ProjectWise InterPlot Organizer V8i<br>V8.11.11.XXX (SS4)              | Bentley ProjectWise InterPlot Organizer V8i<br>V8.11.11.XXX (SS4)              | Paper format drawings (InterPlot can also be used to create PDFs) | <ul style="list-style-type: none"> <li><b>Full Size Submittals:</b> Full size submittal sheets shall have an outside edge measuring 22" X 34". Provide a 0.50" margin on the top, bottom and right hand side of the sheet and a 2" margin on the left hand side of the sheet.</li> <li><b>Half Size Submittals:</b> Half size submittal sheets shall have an outside edge measuring 11" X 17". Drawings shall be an exact 50% reduction of the full size scale drawing. Provide a 0.25" margin on the top, bottom and right hand side of the sheet and a 1" margin on the left hand side of the sheet.</li> <li><b>Letter Size Submittals:</b> Letter size submittal sheets shall have an outside edge measuring 8.5" X 11".</li> </ul> |
| Electronic Plans Publishing  | Bentley Publish to PDF (Integrated with ProjectWise)                           | Bentley Publish to PDF (Integrated with ProjectWise)                           | PDF drawings in ProjectWise                                       | <ul style="list-style-type: none"> <li>PDF format drawings are the formal electronic deliverable.</li> <li>Consultants must import (managed refresh) MicroStation form at drawings into the appropriate ProjectWise discipline "Plans" folder (for each plan delivery milestone) in order to be able to publish PDF plan submittals.</li> <li>A .MSI install file is needed to use the Publish to PDF tool. <a href="#">Bentley ProjectWise External PDF Publishing Downloads For Consultants</a></li> </ul>  |
| Road Design  | Bentley InRoads V8i<br>V8.11.07.615 (SS2)                                      | Bentley InRoads V8i<br>V8.11.07.615 (SS2)                                      | InRoads DGN graphics, ALG, DTM                                    | <ul style="list-style-type: none"> <li>DOTD only allows InRoads that runs on the MicroStation platform.</li> <li>InRoads SS4 and OpenRoads Designer are not supported at this time.</li> </ul>  |
| Hydraulic Design Drafting (Optional)   | Bentley InRoads Storm & Sanitary V8i<br>V8.11.07.615 (SS2)                     | Bentley InRoads Storm & Sanitary V8i<br>V8.11.07.615 (SS2)                     | Hydraulics DGN Graphics   | <ul style="list-style-type: none"> <li>Bentley Storm and Sanitary is recommended for generating graphics only.</li> <li>DOTD only allows InRoads Storm &amp; Sanitary that runs on the MicroStation platform.</li> <li>The current design standard is H-YOR, which is used to check hydraulic designs.</li> </ul>   |
| Electronic Survey  | Bentley InRoads Survey V8i<br>V8.11.07.615 (SS2)                               | Bentley InRoads Survey V8i<br>V8.11.07.615 (SS2)                               | Survey DGN Graphics, PWD, DTM, ALG, TXT                           | <ul style="list-style-type: none"> <li>Any data collection tool and method that produces the required deliverable content and accuracy are acceptable.</li> <li>DOTD feature codes must be used during data collection to enable outputs of CAD survey graphics and associated Tag Data.</li> <li>DOTD only allows InRoads Survey that runs on the MicroStation platform.</li> </ul>  |
| PDF Plan Reader  | Adobe Acrobat Reader   | Adobe Acrobat Reader   | N/A   |   |
| Digital Signatures   | N/A<br>(Now Process In Development)  | N/A<br>(Now Process In Development)  | N/A<br>(Now Process In Development)                               | N/A<br>(Now Process In Development)   |
| Collaboration Platform   | Bentley ProjectWise Explorer V8i<br>V8.11.11.XXX (SS4)                         | Bentley ProjectWise Explorer V8i<br>V8.11.11.XXX (SS4)                         | Project plans and associated documents                            | <ul style="list-style-type: none"> <li>Consultants are required to manage their plan submittals within DOTD's ProjectWise system.</li> <li>Use the managed Export-Export (.lock File) and managed Import functions to manage CAD development between PDF submittals. This prevents unauthorized changes and loss of attribute indexing.</li> <li>The ProjectWise Explorer application is provided free of charge for consultants working on LA DOTD projects. The Bentley Passport License requirement for ProjectWise will be the Consultant's responsibility to purchase.</li> </ul>  |
| Software versions posted herein are the latest supported version as of this document publishing. We will seek to keep this document as up to date as possible as we move forward.  |  |  |   |   |
| Contact Ryan Felder at ryan.felder@la.gov (225-379-1366) for general information and assistance regarding LaDOTD electronic standards, ProjectWise workflow and electronic plan delivery, authentication and publishing. |  |  |   |   |
| Contact David Ringuette at david.ringuette@la.gov (or call 225-379-1880) for general information and assistance regarding ProjectWise PDF publishing setup.  |  |  |   |   |
| Browse to <a href="http://www.dotd.la.gov">http://www.dotd.la.gov</a> and then select Doing Business with LaDOTD > Electronic Standards for Plans for links to all DOTD electronic standards and software downloads.     |  |  |   |   |
| Browse to <a href="http://www.altivasoft.com/downloads/CADconform">http://www.altivasoft.com/downloads/CADconform</a> for the latest CADconform software downloads and related CADOS platform compatibility information. |  |  |   |   |
| Contact support@altivasoft.com (or call 281-265-2254) for information and assistance regarding installation of LaDOTD CAD Resources and Altra CADconform software.   |  |  |   |   |
| Contact Altra Software to purchase CADconform. Contact Bentley Systems to purchase MicroStation, ProjectWise InterPlot Organizer and InRoads products.   |  |  |   |   |

**Louisiana Department of Transportation and Development**  
**Bridge Design Section**  
**Pre-Approved Software List**  
**Updated: March 10, 2021**

| Developer                      | Software Name             |
|--------------------------------|---------------------------|
| AASHTO, Inc.                   | AASHTOWare Bridge Design  |
| AASHTO, Inc.                   | AASHTOWare Bridge Rating  |
| AASHTO, Inc.                   | AASHTOWare PS Design Tool |
| Acuity Brands Lighting, Inc.   | Visual                    |
| Bentley Systems, Inc.          | CONBOX                    |
| Bentley Systems, Inc.          | CONSPAN                   |
| Bentley Systems, Inc.          | CONSPLICE                 |
| Bentley Systems, Inc.          | GEOMATH                   |
| Bentley Systems, Inc.          | Microstation              |
| Bentley Systems, Inc.          | OPEN Bridge Modeler       |
| Bentley Systems, Inc.          | RCPier                    |
| Bentley Systems, Inc.          | RM Bridge                 |
| Bentley Systems, Inc.          | STAAD                     |
| Bentley Systems, Inc.          | STAAD Beava               |
| Bentley Systems, Inc.          | STAAD Section Wizard      |
| Bridge Software Institute      | FB-Pier                   |
| Computers and Structures, Inc. | CSiBridge                 |
| Computers and Structures, Inc. | CSiCOL                    |
| Computers and Structures, Inc. | SAP 2000                  |
| CSI, Ltd.                      | DDM                       |
| DOTD In-House                  | COMPSTIL                  |
| DOTD In-House                  | TimberC                   |
| Drive Systems Technology, Inc. | Power Gear                |
| Elite Software                 | CHVAC 8                   |
| Ensoft, Inc.                   | L-Pile                    |
| Finite Element Analysis, Ltd.  | LUSAS                     |
| LARSA, Inc.                    | LARSA 4D Bridge Plus      |
| Lighting Analysts, Inc.        | AGI32                     |
| MDX Software, Inc.             | MDX                       |
| MIDASoft                       | Midas Civil               |
| Operating Technology, Inc.     | ETAP                      |

|                         |                     |
|-------------------------|---------------------|
| PTC, Inc.               | MathCAD             |
| Smart Bridge Technology | Smart Bridge Suites |
| SolidWorks Corporation  | SOLIDWORKS          |
| Structure Point, LLC    | spColumn            |
| University of Maryland  | Sabre               |
| Vista Data Vision       | VDV                 |
| Wyoming DOT             | BRASS-Culvert       |

Notes:

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

**22. Sub-consultant information:**

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

| <b>Firm Name<br/>(Name must match as registered with<br/>Louisiana's Secretary of State)</b> | <b>Address</b>  | <b>Point of Contact and email address</b>   | <b>Phone Number</b> |
|--|---|---|---------------------|
| Fugro USA Land, Inc.   | 4233 Rhoda Drive<br>Baton Rouge, LA 70816                             | Eric Marx, PE;<br><a href="mailto:emarx@fugro.com">emarx@fugro.com</a>                              | 225-800-5400        |
| C. H. Fenstermaker & Associates, LLC   | 135 Regency Square<br>Lafayette, LA 70508                             | Travis Bodin, MBA, PLS, PMP<br><a href="mailto:travis@fenstermaker.com">travis@fenstermaker.com</a> | 337-237-2200        |
| Marrero, Couvillon & Associates, LLC.  | 4354 S. Sherwood Forest Blvd.,<br>Suite D200<br>Baton Rouge, LA 70816 | Greg DeCoursey, AIA<br><a href="mailto:gdecoursey@mca-llc.com">gdecoursey@mca-llc.com</a>           | 504-834-3448        |

**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. Any information included in this section will be redacted if not required by the advertisement.**