



US 11 NORFOLK SOUTHERN RAILROAD OVERPASS (HBI)

CONTRACT NO. 4400032800
STATE PROJECT NO. H.000688.5




September 9, 2025



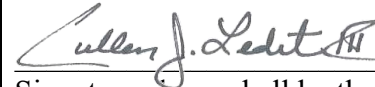
DOTD FORM: 24-102**PROPOSAL TO PROVIDE CONSULTANT SERVICES**

(Revised August 11, 2025)

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

1. Contract Name as shown in the advertisement	US 11 Norfolk Southern RR Overpass (HBI)
2. Contract Number(s) as shown in the advertisement	4400032800
3. State Project Number(s), if shown in the advertisement	H.000688.5
4. Prime consultant name (name must match <u>exactly</u> as registered with the Louisiana Secretary of State (SOS) where such registration is required by law; including punctuation; <u>include screenshot from SOS at the end of Section 20</u>)	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 Vice President 504-524-4344 CJLedet@modjeski.com
9. Name, title, phone number, and email address of the official with signing authority for this proposal	Cullen J. Ledet, PE Vice President 504-524-4344 CJLedet@modjeski.com

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



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

Date: September 9, 2025

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



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

Firm(s):

N/A

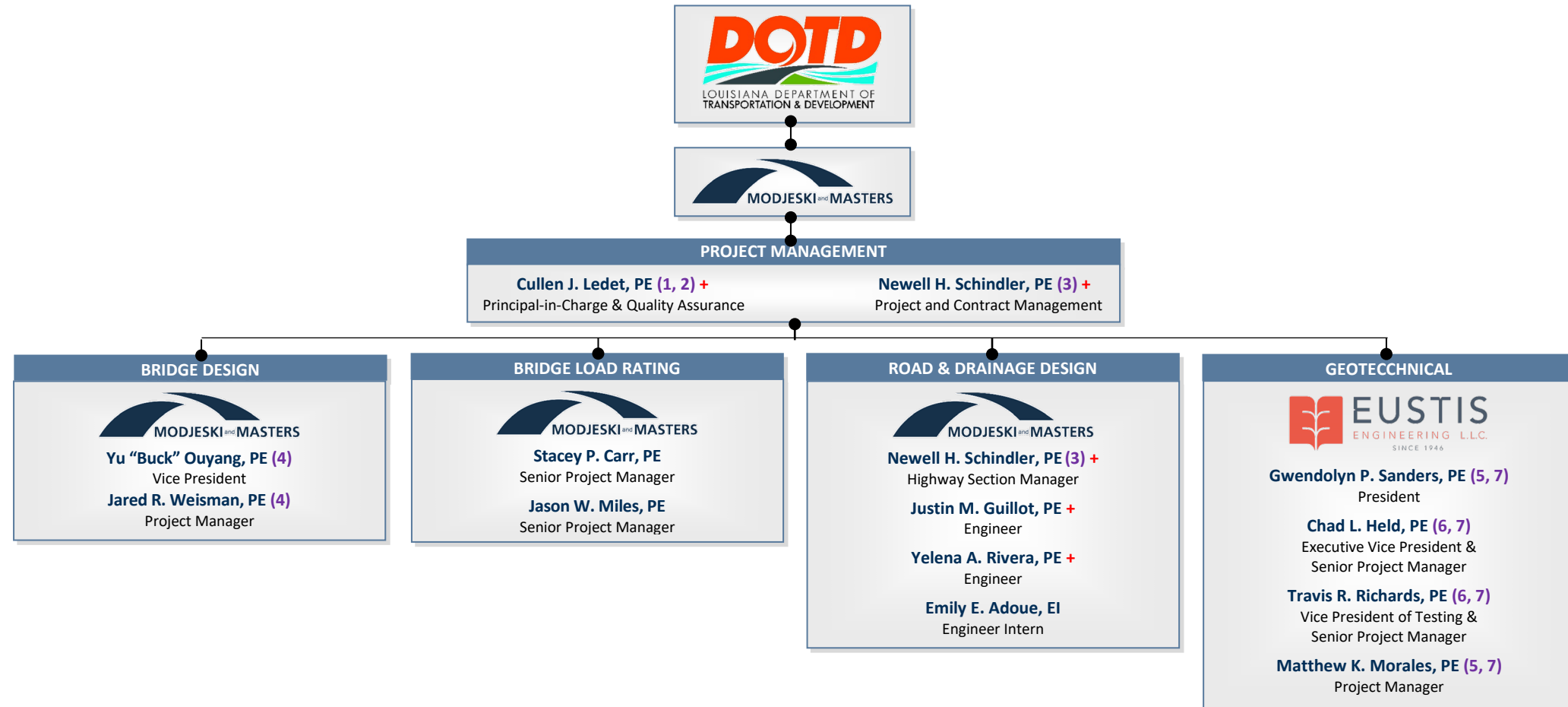
Firm(s)' %:

12. Discipline Table:				
Discipline(s)	% of Overall Contract	Modjeski and Masters, Inc. (Prime)	Eustis Engineering L.L.C.	Each Discipline must total to 100%
Bridge	45%	100%		100%
Road	35%	100%		100%
Geotech	20%		100%	100%
Identify the percentage of work for the overall contract to be performed by the prime consultant and each sub-consultant.				
Percent of Contract	100%	80%	20%	

13. Team Size:			
Firm name	DOTD Job Classification	Number of personnel committed to this contract *	Total number of personnel available in this DOTD Job Classification (if needed)
	Principal	2	10
	Supervisor - Eng	4	12
	Supervisor - Other	0	3
	Engineer	2	12
	Engineer - Other	0	13
	Engineer Intern	1	10
	Professional	0	2
	Senior Technician	0	2
	Technician	0	2
	CADD Technician	2	5
	CADD Operator	0	1
	Clerical	0	2
		Principal	2
Supervisor - Eng		2	11
Engineer		1	4
Engineer Intern		1	7
Engineering-Aide		2	6
CADD Technician		1	1
Clerical		3	13
Driller		1	6
Geologist		1	2
Inspector		6	15
Inspector - Certified		1	1
Supervisor - Other		2	8
Technician		3	6
Senior Technician		3	6

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.





LEGEND

(#) FULFILLS MPR

+ ATSSA CERTIFIED

15. Minimum Personnel Requirements:

MPR No. Do not insert wording from ad	Personnel being used to meet the MPR (Individual(s) may not satisfy more than one MPR unless specifically allowed by Attachment B of the advertisement)	Firm employed by	Type of license and discipline meeting MPR/ certification & number (Ex: PE # - Civil)	State of license	License / certification expiration date
1	Cullen J. Ledet, P.E.		PE #0033222 - Civil	LA	09/30/2027
2	Cullen J. Ledet, P.E.		PE #0033222 - Civil	LA	09/30/2027
3	Newell H. Schindler, P.E.		PE #0024130 - Civil	LA	03/31/2026
4	Yu Ouyang, P.E. Jared R. Weisman, P.E.		PE #0026117 - Civil PE #0043452 - Civil	LA	09/30/2027 09/30/2027
5	Gwendolyn P. Sanders, P.E. Matthew K. Morales, P.E.		PE #0027104 - Civil PE #0038211 - Civil	LA	09/30/2027 09/30/2027
6	Chad L. Held, P.E. Travis R. Richards, P.E.		PE #0030257 - Civil PE #0030992 - Civil	LA	09/30/2026 03/31/2027
7	Gwendolyn P. Sanders, P.E. Chad L. Held, P.E. Travis R. Richards, P.E. Matthew K. Morales, P.E.		PE #0027104 - Civil PE #0030257 - Civil PE #0030992 - Civil PE #0038211 - Civil	LA	09/30/2027 09/30/2026 03/31/2027 09/30/2027

16. Staff Experience:			
Firm employed by Modjeski and Masters, Inc.			
Name	Cullen J. Ledet, PE	Years of relevant experience with this employer	23
Title	Vice President	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		BS 2000 Civil Engineering	
Active registration number / state / expiration date		PE.0033222 LA 09/30/2027	
Year registered	2007	Discipline	Civil
<p>Mr. Ledet has been employed in the New Orleans office of Modjeski and Masters, Inc. since 2002, after having interned two summers with the firm. During this period he has been engaged in the design of both fixed and movable highway and railroad bridges. Mr. Ledet has prepared designs, plans, and specifications for a number of projects both for improvements as well as complex projects. Mr. Ledet fulfils MPR Nos. 1 and 2 and will serve as Principal-in-Charge and Quality Assurance Officer for this Contract. Mr. Ledet is Work Zone Training Compliant.</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).		
3/17 - ongoing	<p>LA 1 – Port Allen Bridge Replacement. Port Allen, LA LADOTD</p> <p>The ongoing project consists of replacing the existing northbound and southbound bridge structures on LA 1 over the Intracoastal Canal Waterway (ICWW). The proposed LA 1 SB Bridge will consist of 3 - 12’ travel lanes and 2 - 10’ shoulders and will be approximately 2,680’ long. The proposed LA 1 NB Bridge will consist of 2 - 12’ travel lanes and 2 - 10’ shoulders (LA 1 NB roadway), a permanent 2’ wide median barrier and 1 - 12’ travel lane with 2 - 6’ shoulders (I-10 EB Exit Ramp roadway). The Exit Ramp and LA 1 NB roadway will be separated by a permanent 2’ wide median barrier until the LA 1 NB Bridge will bifurcate where the LA 1 NB roadway and I-10 EB Exit Ramp roadway will be carried on separate bridge structures. The LA 1 NB Bridge and I-10 EB Exit Ramp Bridge will be approximately 2,700’ and 354’ long, respectively. Both LA 1 NB and LA 1 SB Bridges will consist of a 870’ long haunched three span continuous steel plate girder main span unit over the ICWW and prestressed concrete LG girder approach spans. Mr. Ledet serves as Deputy Project Manager for this project and is developing the General Plan and Elevation drawings while identifying any potential conflicts with utilities and existing structures.</p>		
12/20 – 03/22	<p>Cline Ave Bridge. East Chicago, Indiana United Bridge Partners</p> <p>Mr. Ledet served project manager 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&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>		



12/15-02/17	<p>US 90 from Albertson Pkwy to Ambassador Caffrey Pkwy – BNSF Frontage Road Bridges. Lafayette Parish, LA LADOTD</p> <p>Mr. Ledet performed the review of the structural plans and details at every submittal milestone. M&M provided an independent QC review of the frontage road bridges over the BNSF Railroad. The bridges included construction of various continuous precast prestressed concrete girder spans supported on bent columns and pile footing foundations.</p>
6/12 –12/16	<p>S.P. H.009933: MacArthur Drive Interchange. Harvey, Louisiana LADOTD</p> <p>Mr. Ledet detailed the flared reinforced concrete columns and provided construction related engineering services for this project. The MacArthur Interchange Project consisted of the addition of two new ramps to the Westbank Expressway near MacArthur Drive, as well as the demolition of two existing ramps. M&M was responsible for the substructure design for Ramps 7 and 8 in a complex urban setting which included steel pile footings and reinforced concrete columns. M&M also provided construction related engineering support services. Mr. Ledet provided peer review services of the original design.</p>
01/14-06/15	<p>US 90 (Future I-49) from Albertsons Pkwy to Ambassador Caffrey Pkwy, Lafayette Parish, LA LADOTD</p> <p>Mr. Ledet performed the review of the structural plans and details at every submittal milestone. As a member of the Design-Build team with C.H. Fenstermaker & Associates, M&M provided an independent QC review of the structures over the BNSF Railroad and Albertsons Parkway. Both bridges included construction of various continuous precast prestressed concrete girder Spans supported on bent columns and pile footing foundations. The structures over the BNSF Railroad included a phased sequence of construction.</p>
09/08-02/11	<p>S. P. 701-65-1098 Replacement of LA3249 (Well Road) over I-20. Monroe, LA LADOTD</p> <p>Mr. Ledet was the point of contact for Modjeski and Masters, Inc. He designed and detailed deck drainage; calculated quantities and generated construction cost estimate; construction services. This Project was the replacement of the Well Road Overpass using accelerated construction methods to construct replacement spans within the interchange R/W and over a weekend remove existing spans and install new spans.</p>
06/01-08/14	<p>S.P. 700-18-0014 Huey P. Long Bridge Widening at New Orleans, LA LADOTD</p> <p>Mr. Ledet assisted in the design and detail of the main river pier widening; designed and detailed plans and generated specifications for various components of the superstructure and substructure of the approaches, including steel and prestressed concrete girders; provided construction engineering support services for approaches contract. This Project widens the existing bridge roadways through the widening of river piers using conventional and post-tension concrete, two new truss lines and 43' roadways to replace existing 18' roadways. The Project construction cost is \$1.2B. This Project was a major complex design involving adding truss lines while maintaining existing traffic.</p>
2007; 6/10 – 11/11	<p>White River Bridge Replacement. Clarendon, Arkansas Arkansas Highway and Transportation Department</p> <p>Mr. Ledet detailed various substructure components (r.c. columns and footings) for this project. The White River Bridge consists of a 9,500', two-lane vehicular bridge crossing the White River, a 2,500' trestle bridge over Roc Roe Bayou and a 1,550' relief structure over the White River floodplain, with the main river crossing consisting of a four-span continuous steel I-girder unit with a 350' maximum span. Total project length is 5.1 miles. Project also consisted of geometric study and subsequent design for the 3- steel girder spans (114'-158'-114') for the UPRR ramp overpass. M&M was engaged to perform vessel collision analysis, develop hydrograph and boring logs, and develop project survey controls. Additional aspects of the project include design and detail of horizontal and vertical project geometry, typical sections, superelevation, intersection design, and the bridge layout plan and profiles for two alternates. M&M provided preliminary and final bridge design and preliminary roadway design services for this project.</p>

16. Staff Experience:Firm employed by **Modjeski and Masters, Inc.**

Name	Newell H. Schindler, Jr., PE	Years of relevant experience with this employer	5
Title	Project Manager – Highway Section Manager	Years of relevant experience with other employer(s)	38
Degree(s) / Years / Specialization		BS 1982 Civil Engineering	
Active registration number / state / expiration date		PE.0024130 LA 03/31/2026	
Year registered	1988	Discipline	Civil



Mr. Schindler has 43 years of experience in the management and design of infrastructure projects, 13 years of experience in the Road Design Section of LADOTD, and 30 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 LADOTD 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 3 for this contract.** Mr. Schindler is Work Zone Training Compliant and has also certified in Traffic Engineering Analysis Process and Report Training.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
11/23–01/25	SH 22 at Richland Creek. Hill County, TX TXDOT Mr. Schindler served as Project Manager and Engineer of Record for all associated road design tasks, including but not limited to geometric design, typical sections, 3D corridor modeling using Bentley OpenRoads Designer, cross sections, signage and striping, temporary erosion control, temporary traffic control phasing, calculation of quantities, and all plan production. This project involved the preparation of plans, specifications and estimates for the on-system bridge replacement on State Highway 22 at Richland Creek. The proposed bridge is 53’ x 315’ with 2-12’ lanes, a 10’ shoulder, and a 17’ shoulder. The wider 17’ shoulder will allow for maintaining traffic through 2 phases of construction and will also accommodate a future “Super 2” Highway configuration (which adds periodic passing lanes on a two-lane highway).
01/24-Ongoing	Bobby Hopper Tunnel Inspection and Rehabilitation. Washington County, AR ARDOT Mr. Schindler is serving as Project Manager which includes four (4) Disciplines (Road Design, Structural Design, Mechanical Systems Design and Electrical Systems Design) and Engineer of Record for all Road Design related design tasks. This project involves the inspection and design for rehabilitation of the Bobby Hopper Tunnel (both NB and SB bores) on I-49 near Winslow, AR, along with associated roadway design services which include the design of permanent diversion crossovers for both the northern and southern roadway approaches to the tunnel. These crossovers will be utilized during the rehabilitation of each of the tunnel bores and during future inspections/maintenance as well as for emergency incident management. The road design services are divided into two tasks: the Feasibility Study Phase and the Design Phase. I-49 posted speed is 75 MPH and horizontal and vertical geometry were evaluated for several alternative design speeds for the proposed crossovers during the Feasibility Study Phase. The Feasibility Study Phase is 100% complete and is currently in the Design Phase.
12/20-03/22	Cline Ave Bridge. East Chicago, Indiana United Bridge Partners 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&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

	<p>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. Feasibility study included Line and Grade analysis to ensure vertical clearance compliance for the exit and entrance ramps over the adjacent railroads.</p>
05/12-08/16	<p>Baker Canal Bridge Replacement (S.P. No. H000698). Baker, LA LADOTD</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&H analyses in accordance with LA DOTD Hydraulics manual for drainage improvements (open ditch & 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>
09/95-12/99	<p>Golden Meadow - Larose; LA 3235 (a.k.a. LA 1 Relocated) & Extension of LA 657 (S. P. Nos. 829-11-0008 & 829-26-0007). Lafourche Parish, LA LA DOTD</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>
01/99 – 10/01	<p>Clayton - Greenville; LA 15 (S.P. Nos. 26-03-0024 & 26-04-0025), Catahoula & Concordia Parishes, LA LA DOTD (1999-2001)</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>

16. Staff Experience:			
Firm employed by Modjeski and Masters, Inc.			
Name	Justin M. Guillot, PE	Years of relevant experience with this employer	5
Title	Engineer – Highway Section	Years of relevant experience with other employer(s)	3
Degree(s) / Years / Specialization		BS 2017 Civil and Environmental Engineering	
Active registration number / state / expiration date		PE.0047592 LA 03/31/2026	
Year registered	2021	Discipline	Civil
<p>Mr. Guillot has over 8 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 & 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. Mr. Guillot is Work Zone Training Compliant and has also certified in Traffic Engineering Analysis Process and Report Training.</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).		
01/24 – 01/25	<p>SH 22 at Richland Creek. Hill County, TX TXDOT</p> <p>Mr. Guillot is serving as design engineer in performing all associated road design tasks, including but not limited to geometric design, typical sections, 3D corridor modeling using Bentley OpenRoads Designer, cross sections, signage and striping, temporary erosion control, temporary traffic control phasing, calculation of quantities, and all plan production. This project involves the preparation of plans, specifications and estimates for the on-system bridge replacement on State Highway 22 at Richland Creek. The proposed bridge is 53' x 315' with 2-12' lanes, a 10' shoulder, and a 17' shoulder. The wider 17' shoulder will allow for maintaining traffic through 2 phases of construction and will also accommodate a future “Super 2” Highway configuration (which adds periodic passing lanes on a two-lane highway).</p>		
01/24 - Ongoing	<p>Bobby Hopper Tunnel Inspection and Rehabilitation. Washington County, AR ARDOT</p> <p>Mr. Guillot is serving as a design engineer in evaluating potential crossover alternatives which include various locations, geometries, design speeds, and median barriers. This project involves the inspection and rehabilitation of the Bobby Hopper Tunnel (both NB and SB bores) on I-49 near Winslow, AR, along with associated roadway design services which include the design of permanent diversion crossovers for both the northern and southern roadway approaches to the tunnel. These crossovers will be utilized during the rehabilitation of each of the tunnel bores and during future inspections/maintenance as well as for emergency incident management. The road design services are broken up into two tasks: the Feasibility Study Phase and the Design Phase. The Feasibility Study Phase is currently underway and is 95% complete.</p>		
12/21 – 3/22 5/23-8/24 1/25-3/25	<p>LA 1 – Port Allen Bridge Replacement. Port Allen, LA LADOTD</p> <p>Mr. Guillot assisted with plan development and detailing for this project. The ongoing project consists of replacing the existing northbound and southbound bridge structures on LA 1 over the Intracoastal Canal Waterway (ICWW). The proposed LA 1 SB Bridge will consist of 3 - 12' travel lanes and 2 - 10' shoulders and will be approximately 2,680' long. The proposed LA 1 NB Bridge will consist of 2 - 12' travel lanes and 2 - 10' shoulders (LA 1 NB roadway), a permanent 2' wide median barrier and 1 - 12' travel lane with 2 - 6' shoulders (I-10 EB Exit Ramp roadway). The Exit Ramp and LA 1 NB roadway will be separated by a permanent 2' wide median barrier until the LA 1 NB Bridge will bifurcate where the LA 1 NB roadway and I-10 EB Exit Ramp roadway will be carried on separate bridge structures. The LA 1 NB Bridge and I-10 EB Exit Ramp Bridge will be approximately 2,700' and 354' long, respectively. Both LA 1 NB</p>		



	and LA 1 SB Bridges will consist of a 870' long haunched three span continuous steel plate girder main span unit over the ICWW and prestressed concrete LG girder approach spans.
07/23 - 08/23	<p>Memorial Park Drive Tunnel Inspections. Houston, TX Srinteg Corporation</p> <p>Mr. Guillot served as a design engineer in developing custom TTC layouts for each Tunnel closure and led the plan production effort. These layouts, which would be used to convert the existing 6-lane divided highway into a single 2-lane, 2-way facility, required careful planning and consideration because of the complex nature of the roadways in the area. This project involved the design of Temporary Traffic Control (TTC) Plans for complete separate eastbound and westbound tunnel bore closures of the newly constructed land bridge Tunnels along Memorial Drive in Houston, Texas.</p>
02/21 - 03/22	<p>Cline Ave Bridge. East Chicago, Indiana United Bridge Partners</p> <p>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. 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>Central City Group A (FRC) (DPW P. No. 2017-RR021). New Orleans, LA City of New Orleans – DPW</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 LA DOTD Hydraulics Manual, 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>Rossignol Road Bridge Replacement. Calcasieu Parish, LA Calcasieu Parish Police Jury (CPPJ)</p> <p>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 LA DOTD standards. He calculated final construction quantities and compiled an OPCC. He also assisted in the development of final construction plans and specifications.</p>

16. Staff Experience:Firm employed by **Modjeski and Masters, Inc.**

Name	Yelena A. Rivera, PE	Years of relevant experience with this employer	3
Title	Engineer – Highway Section	Years of relevant experience with other employer(s)	13
Degree(s) / Years / Specialization		BS 2009 Civil and Environmental Engineering	
Active registration number / state / expiration date		PE.0040502 LA 09/30/2026	
Year registered	2016	Discipline	Civil



Ms. Rivera has over 16 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 & 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:


- AT TSA - Traffic Control Technician Supervisor, LADOTD specific
- LADOTD/LTAP – Bridge Load Rating in Louisiana
- ADOTD/ RPC – Design Streets for Pedestrians and Bicycles
- LADOTD/LTAP – Local Public Agency Core Training
- LADOTD/LTAP – Local Public Agency Project Planning, Feasibility & Application
- LADOTD/LTAP – Local Public Agency Construction Engineering and Inspection Training

Ms. Rivera will serve as an engineer for Road and Drainage 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).
11/23-Ongoing	LA 24 at Intracoastal Waterway. Houma, LA LADOTD LA 24 over the Intracoastal Waterway contains a main, 3-span continuous steel girder unit with high clearance. A vessel traveling under the bridge lacked enough clearance and struck the exterior girder, severely twisting the girder out of plane and damaging the connected cross frames. LADOTD has contracted MM to perform a post-collision damage inspection, prepare a report that compares repair alternatives, make recommendations, and then to develop repair plans based on the selected alternative. Heat straightening of the steel girder will be primary alternative investigated, with girder section replacement as a back up. Ms. Rivera coordinated and attended the post-collision damage inspection with LADOTD and the Louisiana Coast guard, prepared a damage inspection report, and analyzed various repair alternatives. Upon the selection of the repair alternative, Ms. Rivera prepared repair plans and corresponding opinion of possible construction cost. Ms. Rivera will also assist in Construction Related Engineering Services for this project
2/17 – 7/20	Central City Group A (FRC) (DPW P. No. 2017-RR021). New Orleans, LA City of New Orleans - DPW 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.

1/19 – 7/20	<p>Lower Ninth Ward Northeast Group C (FRC) (DPW P. No. 2019-RR105). New Orleans, LA City of New Orleans - DPW</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 storm in accordance with the LA DOTD Hydraulics Manual, along with design of the replacement of existing water and sanitary sewer systems.</p>
12/09 – 8/16	<p>Baker Canal Bridge Replacement (S.P. No. H000698). Baker, LA LADOTD</p> <p>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.</p>
8/13 – 8/14	<p>Judge Edward Dufresne Parkway Extension Stage 0 Feasibility Study and Safety Study. St. Charles Parish, LA New Orleans Regional Planning Commission</p> <p>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. 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.</p>
1/10 – 1/15	<p>I-12 to Bush Environmental Impact Statement, LA LADOTD</p> <p>Ms. Rivera performed a Line and Grade study of several alternatives to assist in the selection of an alternative. Project consisted of performing a third-party Environmental Impact Study (EIS) for a proposed 4-lane highway from Bush, Louisiana to Interstate 12. Initiated by LADOTD, this corridor improvement project was part of the Louisiana Transportation Infrastructure Model for Economic Development (TIMED) Program. The EIS was prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) to obtain permits pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act from the U.S. Army Corps of Engineers (USACE). The study included developing the most suitable horizontal and vertical alignments for various alternatives using MicroStation and Inroads software, creating typical section templates and determining cut and fill quantities.</p>
8/10 – 5/11	<p>Airline Highway Bus Rapid Transit Stage 0 Feasibility Study. Jefferson Parish, LA LADOTD</p> <p>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 LA DOTD 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. 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.</p>

16. Staff Experience:

Firm employed by Modjeski and Masters, Inc.					
Name	Emily E. Adoue, EI		Years of relevant experience with this employer		4
Title	Engineer Intern– Structures Section		Years of relevant experience with other employer(s)		1
Degree(s) / Years / Specialization		MS 2020 Civil and Environmental Engineering BS 2017 Biological Engineering			
Active registration number / state / expiration date		EI.0034558 LA 03/31/2027			
Year registered	2020	Discipline	Civil		
<p>Ms. Adoue is a Civil Engineer Intern with Modjeski and Master’s New Orleans office. She has experience in providing engineering and CAD support for the development of roadway and bridge plans and specifications, inspections, and construction oversight. She has a broad knowledge of current Louisiana Department of Transportation and Development (LA DOTD), the American Association of State Highway & Transportation Officials’(AASHTO), and American Railway Engineering and Maintenance-of-Way Association’s (AREMA) policies and design procedures. She is proficient in utilizing MicroStation, InRoads, AutoCAD, Inventor, and HYDRWIN. Ms. Adoue will serve as an Engineer Intern 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).				
5/2024-7/2024; 4/2025	<p>LA 1 – Port Allen Bridge Replacement. Port Allen, LA LADOTD For LA 1 NB and NB Exit Ramp, Ms. Adoue assisted with the as-built rating of superstructure elements for P.P.C. girder spans, and performed the as-built rating of substructure elements including concrete bent caps. She also compiled the as-built rating report. For LA 1 SB, Ms. Adoue performed the as-built rating of superstructure elements for P.P.C. girder spans and substructure elements including concrete bent caps, and compiled the as-built rating report. This ongoing project consists of replacing the existing northbound and southbound bridge structures on LA 1 over the Intracoastal Canal Waterway (ICWW). The proposed LA 1 SB Bridge will consist of 3 - 12’ travel lanes and 2 - 10’ shoulders and will be approximately 2,680’ long. The proposed LA 1 NB Bridge will consist of 2 - 12’ travel lanes and 2 - 10’ shoulders (LA 1 NB roadway), a permanent 2’ wide median barrier and 1 - 12’ travel lane with 2 - 6’ shoulders (I-10 EB Exit Ramp roadway). The Exit Ramp and LA 1 NB roadway will be separated by a permanent 2’ wide median barrier until the LA 1 NB Bridge will bifurcate where the LA 1 NB roadway and I-10 EB Exit Ramp roadway will be carried on separate bridge structures. The LA 1 NB Bridge and I-10 EB Exit Ramp Bridge will be approximately 2,700’ and 354’ long, respectively. Both LA 1 NB and LA 1 SB Bridges will consist of a 870’ long haunched three span continuous steel plate girder main span unit over the ICWW and prestressed concrete LG girder approach spans.</p>				
12/19 – 12/20	<p>LA 37 (Sullivan Rd. – Liberty Rd.) Stage 0 Feasibility Study (S.P. No. H.00297.1). Baton Rouge, LA LADOTD Ms. Adoue provided general Engineering support 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 section of LA 37, broken down into 3 segments. In Phase 1, Ms. Adoue performed initial project research, data collection, and site investigations to document and observe existing conditions. She assisted with the development of the Preliminary Purpose and Need Statement and contributed to the compilation of the Phase 1 report, which indicated significant safety and capacity deficiencies throughout the project area and thus justified moving to Phase 2.</p>				
12/19 – 12/20	<p>Central City Group A (FRC) (DPW P. No. 2017-RR021). New Orleans, LA City of New Orleans - DPW Ms. Adoue provided general Engineering support during the final design and construction phases for the full depth street repair project in the Central City Neighborhood of New Orleans. The project was a complex urban design due to the number of underground utilities and</p>				

	<p>limited Right-of-Way. Ms. Adoue assisted with the development of the final construction plans and specifications, including typical sections, special details, plan/profile sheets, geometric details, joint layouts, and cross sections. Ms. Adoue contributed to the calculated quantities for construction bid items and compilation of an Opinion of Probable Construction Cost (OPCC) which was ultimately within 1.1% of the winning contractor's bid. She also prepared final bid tabulations. Upon the start of construction, Ms. Adoue reviewed contractor material submittals and shop drawings for compliance with the plans and specifications.</p>
12/19 – 12/20	<p>Lower Ninth Ward Northeast Group C (FRC) (DPW P. No. 2019-RR105). New Orleans, LA City of New Orleans - DPW (2019-2020)</p> <p>Ms. Adoue provided general Engineering support during the preliminary design phase for full reconstruction of 12 city blocks in the urbanized Lower Ninth Ward Neighborhood. The project was a complex urban design due to the number of underground utilities and limited Right-of-Way. Ms. Adoue performed 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. She developed preliminary plans and specifications, including typical sections, plan/profile sheets, and geometric details. Ms. Adoue also contributed to the calculated quantities for construction bid items and the preliminary OPCC.</p>
1/10 – 3/12	<p>Filmore South Group D (FRC) (DPW P. No. 2020-RR045). New Orleans, LA City of New Orleans - DPW</p> <p>Ms. Adoue provided general Engineering support during the preliminary design phase. She performed geometric design in accordance with AASHTO design criteria and ensured compliance with the ADA for full reconstruction of 4 streets (approx. 3800 linear feet) in the urbanized Filmore Neighborhood. The project was a complex urban design due to the number of underground utilities and limited Right-of-Way. Ms. Adoue performed 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. She developed preliminary plans and specifications, including typical sections, plan/profile sheets, and geometric details. Ms. Adoue also contributed to calculated quantities for construction bid items and the preliminary OPCC.</p>
01/21 – 09/21	<p>Almonaster Avenue Railroad Bridge Over the Industrial Canal. New Orleans, LA Port of New Orleans</p> <p>Ms. Adoue provided general Engineering and CAD support for the bridge assessment and complete rehabilitative engineering design for the rehabilitation of the Almonaster Avenue Railroad Bridge. This project involves the partial replacement of the Almonaster Avenue Railroad Bridge, a movable Strauss-heel trunnion bridge. A 2019 assessment of the circa-1920 bridge revealed that improvements to the electrical and mechanical systems, superstructure, and counterweight were required to return this bridge to its full operating capability. Although the existing substructure could remain, modifications were deemed necessary to accommodate the rehabilitated superstructure. The necessary design plans were developed to replace the span drive and span lock machinery, operating strut, guide assembly, live load bearings, counterweight trunnion pin, and bushing. The main trunnion bearings were rehabilitated and repositioned.</p>

16. Staff Experience:Firm employed by **Modjeski and Masters, Inc.**

Name	Jason W. Miles, PE		Years of relevant experience with this employer	17
Title	Project Manager - 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	09/30/2027	
Year registered	2013	Discipline	Civil	



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, steel member shop drawing review, assessment of steel fabricator quality control reports, and in performing finite element analysis using both the LUSAS and Florida Pier programs. Mr. Miles attended the AASHTOWare Bridge Rate (BrR) meeting titled “AASHTOWare Bridge Design and Rating Software User Group Meeting” in August 2014 and 2016. 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.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
02/23 – Ongoing	H.009859.5 Load Rating of 160 Bridges. Statewide, LA LADOTD Mr. Miles provides technical guidance to bridge raters involved in a variety of bridge types, including steel trusses and movable spans. Ratings are being performed using AASHTOWare BrR with refinements done in Excel when needed. Mr. Miles is also performing general QA/QC and rating report review. Modjeski and Masters, Inc. is performing 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 are being rated. Bridge inspections focus on gusset plates and existing member conditions for rating. AASHTOWare BrR is being 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.
06/20 - Ongoing	H.010603.6 I-20 Mississippi River Bridge at Vicksburg Monitoring LADOTD Mr. Miles serves as the project manager and will be analyzing and monitoring data to provide advance warning of pier and bridge longitudinal movement and pier tilt. Piers E-2 and E-1 of the I-20 Bridge in Vicksburg have been experiencing movements and have been under a monitoring program since 2002. The objective of this project is to capture both longitudinal and transverse displacements and tilts of the piers and provide system redundancy through the installation of jointmeter/tiltmeters and GPS instrumentation systems. Replacement vibrating wire jointmeters will be installed at five locations to determine the magnitudes of displacement over time. Replacement biaxial tiltmeters will be installed at four locations to determine the changes in tilt occurring over time at the bridge piers. All measurements will be reported wirelessly to a data logger connected to a cellular modem.
03/21 - 10/21	H.009859.5 I-210 Bridge over Prien Lake Structural Rating, Calcasieu Parish, LA LADOTD Mr. Miles provided QA/QC, including calculation checking and report review. 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.
11/19 – 05/21	H.009859.5: Load Rating of Fourteen Complex Bridges. Statewide, LA LADOTD Mr. Miles provided QA/QC, including calculation checking and report review. 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 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. For the complex bridges, a three-dimensional structural model is needed. M&M is also developing influence lines and COMPSTIL2 input files for complex substructures including hammerheads and inverted-T pier caps. All load rating analysis will follow 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.
07/19 – 05/21	H.000303.6: Danziger Bridge Repair and Rating. Statewide, LA LADOTD 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. Modjeski and Masters, Inc. 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 current AASHTO Manual for Bridge Evaluation, LADOTD Bridge Design and Evaluation Manual and AASHTO LRFD Bridge Design Specifications.
07/19 – 04/21	H.012485.1: Load Rating of 354 Off System Bridges. Statewide, LA LADOTD 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. 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&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. All load rating analysis followed current AASHTO Manual for Bridge Evaluation, LADOTD Bridge Design and Evaluation Manual and AASHTO LRFD Bridge Design Specifications.
02/17-08/18	H.009859.5: Nineteen Complex Bridge Load Rating and Evaluation. Statewide, LA LADOTD Mr. Miles participated in the load rating analysis and reporting for this project. 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.
03/16-10/17	H.009859.5: Ten Truss Bridges Load Rating and Evaluation. Statewide, LA LADOTD Mr. Miles participated in the load rating analysis and reporting for this project. 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 followed the AASHTO Manual for Bridge Evaluation, the LADOTD Policies and Guidelines for Bridge Rating and Evaluation, and LADOTD Bridge Design and Evaluation Manual.

16. Staff Experience:				
Firm employed by Modjeski and Masters, Inc.				
Name	Stacey P. Carr, PE		Years of relevant experience with this employer	34
Title	Project Manager - 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	9/30/2026
Year registered	1996	Discipline	Civil	
<p>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.</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).			
02/23 – Ongoing	<p>H.009859.5 Load Rating of 160 Bridges. Statewide, LA LADOTD</p> <p>Ms. Carr is the Project Manager who oversees and performs primary QA/QC for the load rating of the bridges. Modjeski and Masters, Inc. is performing 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 are being rated. Bridge inspections focus on gusset plates and existing member conditions for rating. AASHTOWare BrR is being 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.</p>			
11/19 – 06/21	<p>H.009859.5: Load Rating of Fourteen Complex Bridges LADOTD</p> <p>Ms. Carr was the Project Manager who oversaw and performed primary QA/QC for the load rating of the bridges. 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 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 current AASHTO Manual for Bridge Evaluation, LADOTD Bridge Design and Evaluation Manual and AASHTO LRFD Bridge Design Specifications.</p>			
03/21 – 09/21	<p>H.009859.5 Two Bridges Load Rating. Caddo and St. Tammany Parishes, Louisiana LADOTD</p> <p>Ms. Carr was the Project Manager who oversaw and performs primary QA/QC for the load rating of the bridges. Modjeski and Masters, Inc. performed plan and document retrieval, bridge analysis, and load and resistance factor rating of two bridge structures. 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.</p>			
07/19 – 05/21	<p>H.012485.1: Load Rating of 354 Off System Bridges LADOTD</p> <p>Ms. Carr was the Project Manager who oversaw and performed primary QA/QC for the load rating of the bridges. 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&M generated a system structural model and performing an analysis</p>			



	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.
07/19 – 06/21	H.000303.6: Danziger Bridge Repair and Rating LADOTD Ms. Carr was the Project Manager who oversaw and performed primary QA/QC for the load rating. Modjeski and Masters, Inc. 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 current AASHTO Manual for Bridge Evaluation, LADOTD Bridge Design and Evaluation Manual and AASHTO LRFD Bridge Design Specifications.
1/17 - 08/18	H.009859.5: Nineteen Complex Bridge Load Rating and Evaluation. Louisiana LADOTD Ms. Carr was the Project Manager who oversees and performs primary QA/QC for the load rating of the bridges. 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 is being 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.
02/16 - 10/17	H.009859.5: Ten Truss Bridges Load Rating and Evaluation. Louisiana LADOTD Ms. Carr was Project Manager who oversaw and performed primary QA/QC for the load rating of the bridges. 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.
09/14-12/16	H.009859.5 (A): Rating and Posting of On-System State Bridges. Louisiana LADOTD 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. 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.
02/13-02/15	H.009859.5: Crescent City Connection, Bridge No. 1, New Orleans, LA LADOTD Ms. Carr oversaw and performed primary QA/QC for the load rating of the bridge. M&M performed an inspection and LRFR load rating of the Greater New Orleans Bridge #1, a 13,428 foot truss bridge with a main span of 1,575 feet. The rating included the superstructure, including gusset plates and deck, and selected substructure elements.
04/10-12/12	T.O. 701-65-1460 & H.005710: US 190 Miss. River Bridge, Baton Rouge, LA LADOTD Ms. Carr oversaw and participated in the rating of the bridge. The US 190 Mississippi River Bridge carries one railroad track between the main bridge trusses and has two-lane highways brackets either side of the main cantilever truss bridge. This Task Order and Supplements were for the rating of the railroad portions per AREMA requirements and rating of the vehicular portions per AASHTO LRFR requirements.

16. Staff Experience:			
Firm employed by Modjeski and Masters, Inc.			
Name	Yu Ouyang, PE	Years of relevant experience with this employer	35
Title	Senior Vice President	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization	MS 1990 Civil Engineering MS 1985 Structural Engineering BS 1982 Civil Engineering		
Active registration number / state / expiration date	26117 LA 9/30/2027		
Year registered	1994	Discipline	Civil
<p>Mr. Ouyang has been with Modjeski and Masters, Inc. since 1991, and has vast bridge engineering experience, ranging from conventional designs to special projects of high complexity, and from feasibility studies to construction services. He specializes in the design of fixed and movable highway and railroad bridges, and the rating and rehabilitation of existing bridges. His expertise also extends to analysis of complex bridge structures, vessel collision risk assessment and protection systems, seismic design, analysis and retrofit, and fatigue evaluations. He brings extensive experience in managing engineering and design efforts of varying sizes and difficulties, and in leading, coordinating and managing technical teams and subconsultants. His hands-on project management has led to successful and on-time completion of large and highly technical projects. Mr. Ouyang will serve as Task Lead for Bridge Design and will fulfill MPR No. 4 for this contract.</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).		
3/17 - ongoing	<p>LA 1 – Port Allen Bridge Replacement, Port Allen, LA LADOTD Mr. Ouyang serves as Project Manager for this project. The ongoing project consists of replacing the existing northbound and southbound bridge structures on LA 1 over the Intracoastal Canal Waterway (ICWW). The proposed LA 1 SB Bridge will consist of 3 - 12’ travel lanes and 2 - 10’ shoulders and will be approximately 2,680’ long. The proposed LA 1 NB Bridge will consist of 2 - 12’ travel lanes and 2 - 10’ shoulders (LA 1 NB roadway), a permanent 2’ wide median barrier and 1 - 12’ travel lane with 2 - 6’ shoulders (I-10 EB Exit Ramp roadway). The Exit Ramp and LA 1 NB roadway will be separated by a permanent 2’ wide median barrier until the LA 1 NB Bridge will bifurcate where the LA 1 NB roadway and I-10 EB Exit Ramp roadway will be carried on separate bridge structures. The LA 1 NB Bridge and I-10 EB Exit Ramp Bridge will be approximately 2,700’ and 354’ long, respectively. Both LA 1 NB and LA 1 SB Bridges will consist of a 870’ long haunched three span continuous steel plate girder main span unit over the ICWW and prestressed concrete LG girder approach spans.</p>		
09/17 – 09/21	<p>LA 16 over Tangipahoa River, Tangipahoa Parish, LA LADOTD Mr. Ouyang served as the Project Manager for this project. M&M developed all necessary topographic surveys, preliminary and final plans for this bridge replacement project on LA 16, between LA 51 and LA 1054, in Amite City, LA. This project included reconstruction of the approach slabs and roadway on the east and west sides of the bridge. It was anticipated that traffic shall be maintained during construction with an on-site diversion roadway and bridge. The plans were prepared in accordance with AASHTO LRFD Bridge Design Specifications and the Bridge Design and Evaluation Manual (BDEM), DOTD 2017 Design Guidelines, DOTD 2016 Standard Specifications for Roads and Bridges, DOTD Road Design Manual, and DOTD Hydraulics Manual. QC/QA was provided in accordance with Part 1, Chapter 3 of BDEM. Construction Related Engineering Support was provided and is currently on-going.</p>		
09/17 – 03/21	<p>US 61 at Thompson Creek, West Feliciana Parish, LA LADOTD Mr. Ouyang served as the Project Manager for this project. M&M provided all necessary preliminary and final plans for the rehabilitation of the northbound bridge and replacement of the southbound bridge on US 61 over Thompson Creek, between LA 10 and LA 964, near St. Francisville, LA. It was anticipated that traffic would be maintained during the construction of the new southbound bridge with temporary two-way traffic on the rehabilitated northbound bridge. The project also included the design and detailing of adding a helper bent to the</p>		



	northbound bridge. The plans were prepared in accordance with AASHTO LRFD Bridge Design Specifications and the Bridge Design and Evaluation Manual (BDEM), DOTD 2017 Design Guidelines, DOTD 2016 Standard Specifications for Roads and Bridges, DOTD Road Design Manual, and DOTD Hydraulics Manual. QC/QA was provided in accordance with Part 1, Chapter 3 of BDEM. Construction Related Engineering Support was provided and is currently on-going.
09/17 – 02/20	LA 1064 at Little Natalbany River, Livingston Parish, LA LADOTD Mr. Ouyang served as the Project Manager for this project. M&M developed all necessary topographic surveys, preliminary and final plans for this bridge replacement project on LA 1064, near LA 43 and Hoover Road, in Albany, LA. This project included reconstruction of the approach slabs and roadway on the east and west sides of the bridge. It was anticipated that the roadway would be closed during construction and a detour route was detailed. The plans were prepared in accordance with AASHTO LRFD Bridge Design Specifications and the Bridge Design and Evaluation Manual (BDEM), DOTD 2017 Design Guidelines, DOTD 2016 Standard Specifications for Roads and Bridges, DOTD Road Design Manual, DOTD Hydraulics Manual, and DOTD Location and Survey Manual. QC/QA was provided in accordance with Part 1, Chapter 3 of BDEM. Construction Related Engineering Support was also provided.
6/12 –12/16	S.P. H.009933: MacArthur Drive Interchange. Harvey, Louisiana LADOTD Mr. Ouyang was Principal-In-Charge for this project. The MacArthur Interchange Project consisted of the addition of two new ramps to the Westbank Expressway near MacArthur Drive, as well as the demolition of two existing ramps. M&M was responsible for the substructure design for Ramps 7 and 8 in a complex urban setting which included steel pile footings and reinforced concrete columns. M&M also provided construction related engineering support services.
02/01-08/14	S.P. 700-18-0014 – Huey P. Long Bridge Widening, New Orleans, LA LADOTD Mr. Ouyang served as the principal analyst and lead design engineer as well as the primary reviewer of erection methods, sequences, and procedures. He provided analysis of the truss under numerous loading conditions and stages of construction. M&M was called upon to design one of the largest and most ambitious corridor widening projects ever, providing design services for the innovative \$1.2B widening of the main bridge, new approaches, and improved interchanges at each end of the crossing. The original Huey P. Long Bridge was a high-level combined railroad and highway bridge completed in 1935, crossing the Mississippi River. The main span unit is a 3-span, cantilever truss structure with a main span of 790'. The bridge carries two railroad tracks within a through truss and two, 2-lane, 18' wide roadways. The project provided for widening the roadways from 18' to 43' by the addition of two new cantilever trusses, one upstream and one downstream so as to form a "three barrel" structure. Existing floorbeams will be extended to frame the new roadway deck. In addition, M&M has routinely performed yearly bridge inspections—over 75 total—and maintenance since its opening.
08/09-12/11	S.P. 700-08-0109: LA 160 Bridges – Caney Creek and Bodcau Bayou LADOTD Mr. Ouyang served as the project manager and supervised a team of engineers that performed the LUSAS analysis, bridge design and detailing, and construction services. M&M developed final plans, permit drawings, construction cost estimate and special provisions for a new integral bridge design and analysis developed for the LADOTD. The two subject bridge sites that cross Caney Creek and Bodcau Bayou in Bossier Parish, LA were the first two fully integral bridges in the state. Strain gauge and other testing was conducted to follow the behavior of the bridge design over a period of time.
2000 - 2007	White River Bridge Replacement at Clarendon. Clarendon, AR Arkansas Department of Transportation (2000-2007) Mr. Ouyang served as the project manager for this project, which was completed on time and is currently under construction. The White River Bridge consists of a 9,500', two-lane vehicular bridge crossing the White River at Clarendon, Arkansas, a 2,500' trestle bridge over Roc Roe Bayou and a 1,550' relief structure over the White River floodplain, with the main river crossing consisting of a four-span continuous steel I-girder unit with a 350' maximum span. Total project length is 5.1 miles. M&M was engaged to perform vessel collision analysis, develop hydrograph and boring logs, and develop project survey controls. Additional aspects of the project include design and detail of horizontal and vertical project geometry, typical sections, superelevation, intersection design, and the bridge layout plan and profiles for two alternates. M&M provided preliminary and final bridge design and preliminary roadway design services for this project.

16. Staff Experience:Firm employed by **Modjeski and Masters, Inc.**

Name	Jared R. Weisman, PE		Years of relevant experience with this employer	15
Title	Project Manager - Structures		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		MS	2010	Civil Engineering
		BS	2008	Civil Engineering
Active registration number / state / expiration date		43452	LA	9/30/2027
Year registered	2019	Discipline	Civil	



Mr. Weisman has been employed with Modjeski and Masters since August of 2010. He has experience in the design, inspection, rating, and rehabilitation of a number of new and existing highway and railroad bridges. He has worked on a variety of bridge types including deck and through plate girders, prestressed concrete girders, swing, fixed, and bascule trusses, and inclined steel arch bridges. Mr. Weisman will serve as an Engineer for Bridge Design and will fulfill MPR No. 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).
03/17 - Ongoing	LA 1 – Port Allen Bridge Replacement, Port Allen, LA LADOTD Mr. Weisman serves as the Lead Engineer for this project. The ongoing project consists of replacing the existing northbound and southbound bridge structures on LA 1 over the Intracoastal Canal Waterway (ICWW). The proposed LA 1 SB Bridge will consist of 3 - 12’ travel lanes and 2 - 10’ shoulders and will be approximately 2,680’ long. The proposed LA 1 NB Bridge will consist of 2 - 12’ travel lanes and 2 - 10’ shoulders (LA 1 NB roadway), a permanent 2’ wide median barrier and 1 - 12’ travel lane with 2 - 6’ shoulders (I-10 EB Exit Ramp roadway). The Exit Ramp and LA 1 NB roadway will be separated by a permanent 2’ wide median barrier until the LA 1 NB Bridge will bifurcate where the LA 1 NB roadway and I-10 EB Exit Ramp roadway will be carried on separate bridge structures. The LA 1 NB Bridge and I-10 EB Exit Ramp Bridge will be approximately 2,700’ and 354’ long, respectively. Both LA 1 NB and LA 1 SB Bridges will consist of a 870’ long haunched three span continuous steel plate girder main span unit over the ICWW and prestressed concrete LG girder approach spans.
09/17 – 05/19	LA 16 over Tangipahoa River, Tangipahoa Parish, LA LADOTD Mr. Weisman serves as the Lead Engineer for this project. M&M developed all necessary topographic surveys, preliminary and final plans for this bridge replacement project on LA 16, between LA 51 and LA 1054, in Amite City, LA. This project included reconstruction of the approach slabs and roadway on the east and west sides of the bridge. It was anticipated that traffic shall be maintained during construction with an on-site diversion roadway and bridge. The plans were prepared in accordance with AASHTO LRFD Bridge Design Specifications and the Bridge Design and Evaluation Manual (BDEM), DOTD 2017 Design Guidelines, DOTD 2016 Standard Specifications for Roads and Bridges, DOTD Road Design Manual, and DOTD Hydraulics Manual. QA/QC was provided in accordance with Part 1, Chapter 3 of BDEM. Construction Related Engineering Support was provided and is currently on-going.
09/17 – 01/20	US 61 at Thompson Creek, West Feliciana Parish, LA LADOTD Mr. Weisman serves as the Lead Engineer for this project. M&M provided all necessary preliminary and final plans for the rehabilitation of the northbound bridge and replacement of the southbound bridge on US 61 over Thompson Creek, between LA 10 and LA 964, near St. Francisville, LA. It was anticipated that traffic would be maintained during the construction of the new southbound bridge with temporary two-way traffic on the rehabilitated northbound bridge. The project also included the design and detailing of adding a helper bent to the northbound bridge. The plans were prepared in accordance with AASHTO LRFD Bridge Design Specifications and the Bridge Design and Evaluation Manual (BDEM), DOTD 2017 Design Guidelines, DOTD 2016 Standard Specifications for Roads and Bridges, DOTD Road

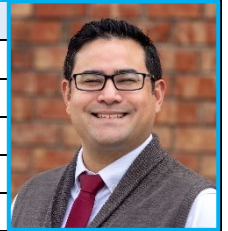
	Design Manual, and DOTD Hydraulics Manual. QA/QC was provided in accordance with Part 1, Chapter 3 of BDEM. Construction Related Engineering Support was provided and is currently on-going.
09/17 – 02/20	LA 1064 at Little Natalbany River, Livingston Parish, LA LADOTD Mr. Weisman serves as the Lead Engineer for this project. M&M developed all necessary topographic surveys, preliminary and final plans for this bridge replacement project on LA 1064, near LA 43 and Hoover Road, in Albany, LA. This project included reconstruction of the approach slabs and roadway on the east and west sides of the bridge. It was anticipated that the roadway would be closed during construction and a detour route was detailed. The plans were prepared in accordance with AASHTO LRFD Bridge Design Specifications and the Bridge Design and Evaluation Manual (BDEM), DOTD 2017 Design Guidelines, DOTD 2016 Standard Specifications for Roads and Bridges, DOTD Road Design Manual, DOTD Hydraulics Manual, and DOTD Location and Survey Manual. QA/QC was provided in accordance with Part 1, Chapter 3 of BDEM. Construction Related Engineering Support was also provided.
10/14-06/16	S.P. 700-18-0014 Huey P. Long Bridge Widening at New Orleans, LA LADOTD Mr. Weisman helped produce ratings for the widened structure for a variety of vehicle types, performed gusset plate analysis and helped in the creation of the project report. This Project widens the existing bridge roadways through the widening of river piers using conventional and post-tension concrete, two new truss lines and 43' roadways to replace existing 18' roadways. The Project construction cost is \$1.2B. This Project was a major complex design involving adding truss lines while maintaining existing traffic.
03/11-09/14	I-74 Mississippi River Bridge Arch. Bettendorf, IA Iowa and Illinois DOTs Mr. Weisman assisted in the design of the variable depth plate girder floorbeams and analyzed preliminary erection schemes for the basket handle arch superstructure. He also calculated quantities for cost estimation and checked calculations for the pedestrian railings. The I-74 corridor in the Quad Cities is approximately seven miles long and crosses the Mississippi River between Bettendorf, Iowa and Moline, Illinois. Twin, 800' span basket handle true arch bridges are being constructed to replace the existing crossing. M&M, as part of the Alfred Benesch team, designed the twin arch superstructures.
2019-2021	I-10 & LA 47 Overhead Sign Upgrades. New Orleans, LA LADOTD The existing I-10 route has several locations which require the addition of new sign trusses and associated modification of structure to add new sign truss supports. Modjeski and Masters, Inc. performed engineering services associated with the final design and detail completion for additional sign truss supports to be added to existing bridge structures. The scope of work included the following major tasks: (1) Completed design check for adequacy of DOTD Sign Truss Special Details (“BD.2.7.2.0.7 checks”). If special detail sign truss categories were not insufficient, M&M performed special design of sign truss to point of recommending required sign truss member sizes. (2) Completed final design of required sign truss supports to be added to three existing bridge structures: Louisa Street, Paris Road, Almonaster Avenue. (3) Completed final plan details for required sign truss supports to be added to three existing bridge structures identified under Item 2. Mr. Weisman served as the Lead Engineer for this project.

16. Staff Experience:			
Firm employed by Eustis Engineering L.L.C.			
Name	Gwendolyn P. Sanders, P.E.	Years of relevant experience with this employer	32
Title	President	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	MS 1992 Engineering BS 1990 Civil Engineering		
Active registration number / state / expiration date	PE.0027104 LA 09/30/2027		
Year registered	1997	Discipline	Civil
As President, Mrs. Sanders will be responsible for the overall services provided by Eustis Engineering L.L.C. and will meet Minimum Personnel Requirement Nos. 5 and 7 of this RFQ.			
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).		
03/11 – 08/16	<p>State of Louisiana - Wisner Boulevard Overpass, Orleans Parish, Louisiana (22972, 22637, 21349, 21966)</p> <p>Mrs. Sanders helped develop subsoil design parameters at each boring location. These design parameters were used to estimate pile load capacity with ultimate compressive pile load capacity being computed for alternative pile sizes. Precast concrete piles were being considered for support. Other factors considered in our engineering analyses included drag loads due to fill placement, estimated total settlement due to structural loads, pile installation recommendations, and recommended inspection and monitoring of existing structures. Mrs. Sanders was also involved during the construction phase, evaluating the results of dynamic and static load tests for development of installation requirements and verification of permanent pile lengths.</p>		
03/20 – 06/25	<p>State of Louisiana, Department of Transportation and Development, I-10 and I-12 College Flyover Ramp Design-Build Project, East Baton Rouge Parish, Louisiana (B0646)</p> <p>Services for this project included undisturbed borings, auger borings, and cone penetration tests. Eustis Engineering also provided laboratory testing including Atterberg limits tests, hydrometer analyses, and one-dimensional consolidation tests. As Principal, Mrs. Sanders put in over 300 hours on this project to perform senior level review associated with the design and construction services. She participated in weekly progress meetings both with the design team and with the owner representatives.</p>		
02/18 – 09/19	<p>Greater New Orleans Expressway Commission (GNOEC) - Lake Pontchartrain Causeway, Safety Bay Improvements, Jefferson and St. Tammany Parishes, Louisiana (23800)</p> <p>As Engineering Manager and Project Principal, Mrs. Sanders was involved in the development of the geotechnical scope of work as well as field and laboratory programs. She provided general oversight and review of the engineering analyses during the geotechnical exploration and design including development of the pile data table and testing program. She also provided oversight and evaluation during the construction phase including review of the verification testing of indicator piles and monitor piles as well as adjustment of driving criteria and acceptance criteria.</p>		
08/06 – 12/14	<p>State of Louisiana - Huey P. Long Bridge Widening, Route U.S. Highway 90, West Bank and East Bank Approaches and Main Bridge Deck Widening, Jefferson Parish, Louisiana (18530, 19483, 20262)</p> <p>Mrs. Sanders was the Project Manager and lead geotechnical engineer during design and construction. Mrs. Sanders provided design pile and shaft capacity estimates in the engineering/design phase of the project. Prior to construction, she reviewed the</p>		



	<p>geotechnical aspects of the project specifications and provided comments. During construction, she observed/witnessed drilled shaft installations and shaft inspection device (SID) testing prior to concrete placement. She also observed and reviewed the results of pile and shaft load testing and provided final inputs to the pile data tables.</p>
01/12 – 05/19	<p>State of Louisiana - Route I-10, Williams Boulevard, Veterans Boulevard, and Loyola Drive to Williams Boulevard, Jefferson Parish, Louisiana, S.P. Nos. H009087.5 and H.003074.5 (21687)</p> <p>Mrs. Sanders served as the Project Manager during the exploration phase of these projects and preliminary design. She assisted with rating determinations of the existing Veterans Boulevard and Duncan Avenue canal bridges and the Loyola Drive and Williams Boulevard overpasses. This rating included recommended resistance factors associated with the available tests to be used to assess the existing structure's ability to meet current Load Resistance Factor Design (LRFD) requirements. Engineering analyses included settlement evaluations for various embankment fill heights and widths, settlement and differential settlement of pile foundations, slope stability of each canal crossing, and ultimate vertical pile capacity estimates. Mrs. Sanders provided senior level review during later project phases when a bridge replacement, rather than widening, was selected. The replacement bridge required the evaluation of a preload/surcharge program that would be implemented in phases to maintain traffic through the corridor during construction.</p>
01/13 – 11/18	<p>Port of New Orleans - Almonaster Bridge over the Inner Harbor Navigation Canal, New Orleans, Louisiana (22066, .01)</p> <p>Analyses included estimates of allowable vertical pile load capacities at the land borings for support of the proposed bridge replacement and pavement recommendations based on the auger borings. Slope stability analyses were performed for the proposed channel widening and the cofferdam requirements. Lateral load analyses were performed to evaluate the new fender system and bridge support piles. As part of a response to a Value Engineering study, we evaluated the use of drilled shafts. Mrs. Sanders served as the Project Manger during the development of the site exploration and initial meetings among the project stakeholders which included Port NOLA, the Southern Belt Railroad, CSX Railroad, LADOTD, the City of New Orleans, the U.S. Coast Guard, and the U.S. Army Corps of Engineers.</p>

16. Staff Experience:			
Firm employed by Eustis Engineering L.L.C.			
Name	Matthew K. Morales, P.E.		Years of relevant experience with this employer
Title	Project Manager		Years of relevant experience with other employer(s)
Degree(s) / Years / Specialization		BS 2008 Civil Engineering	
Active registration number / state / expiration date		PE.0038211 LA 09/30/2027	
Year registered	2013	Discipline	Civil
<p>Mr. Morales serves as Project Manager and will meet Minimum Personnel Requirement Nos. 5 and 7 of this RFQ. Regarding MPR 7, he achieved Master Level in the Pile Dynamics Inc. – Dynamic Measurement and Analysis Proficiency Test.</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).		
01/21 – Ongoing	<p>State of Louisiana, Department of Transportation and Development (LADOTD), Bayou Barataria Bridge Replacement, Jefferson Parish, Louisiana (24515.00-.03)</p> <p>The goal of this project is a full replacement of the Bayou Barataria Bridge. Eustis Engineering L.L.C. obtained relevant permits and land access and drilled 24 borings over water, marsh, and pavement. Geotechnical design analyses include vertical and lateral pile capacity with and without scour, pile group settlement, ground settlement, settlement surcharge/remediation, retaining wall recommendations, slope stability, and pavement design. Engineering during construction (EDC) includes Wave Equation Analysis of Piles (WEAP) driveability, dynamic pile testing with signal matching, development of a vibration monitoring plan, and review of settlement monitoring of surcharged areas. Mr. Morales has been responsible for performing internal reviews of the engineering analyses, the geotechnical data report, and the geotechnical design report completed for this project. He is also leading the EDC efforts.</p>		
03/20 – 06/25	<p>State of Louisiana, Department of Transportation and Development, I-10 and I-12 College Flyover Ramp Design-Build Project, East Baton Rouge Parish, Louisiana (B0646)</p> <p>Services for this project included a subsurface exploration including undisturbed borings, auger borings, and cone penetration tests. Eustis Engineering also provided laboratory testing including Atterberg limits tests, hydrometer analyses, and one-dimensional consolidation tests. Design services were provided for seven different major project features. Mr. Morales was the geotechnical design engineer for all project features, which included driven pile and drill shaft foundation design, slope stability analyses, retaining wall design, embankment evaluations, roadway pavement design, and developing load test programs. Eustis Engineering evaluated the results of the bi-directional load test performed on a drilled shaft, performed dynamic pile testing with signal matching to verify pile load capacity estimates, and reviewed installation logs of the production shafts and piles. Mr. Morales’ responsibilities on this project included performing engineering design work for the project features in a timely manner allowing construction operations to progress with minimal delays.</p>		
08/06 – 12/14	<p>State of Louisiana - Huey P. Long Bridge Widening, Route U.S. Highway 90, West Bank and East Bank Approaches and Main Bridge Deck Widening (18530, 20262)</p> <p>Mr. Morales was involved in the later phases of this project as a project engineer. He reviewed and evaluated the results of cone penetration tests used to supplement the soil borings and performed dynamic testing on the piles supporting the approach ramps.</p>		



06/11 – 02/13	<p>State of Louisiana - Essen Lane Interchange Westbound, Route Interstate 12, East Baton Rouge Parish, Louisiana</p> <p>Mr. Morales served as a project engineer for this project. He performed engineering analyses to evaluate some of the retaining wall alternatives. He also performed global slope stability analyses using Spencer's Method of Slices as coded within GEOSLOPE International Ltd.'s computer program, SLOPE/W.</p>
02/09 – 04/10	<p>U.S. Army Corps of Engineers - Inner Harbor Navigation Canal Surge Protection Project, New Orleans, Louisiana (20243.00-.15)</p> <p>As a project engineer, Mr. Morales performed Wave Equation Analysis of Piles (WEAP) analyses for this project. He also participated in the field exploration phase and dynamic pile testing during the test pile program and job pile installation. In addition, he reviewed some of the construction submittals.</p>
02/09 – 03/15	<p>U.S. Army Corps of Engineers - Preparation of Design Documentation Report and Plans and Specifications, WBV-74 and WBV-09b, Western Tie-In Closure Structure, St. Charles and Plaquemines Parish, Louisiana (20536)</p> <p>Eustis Engineering provided design and engineering during construction (EDC) services. The design phase scope, assisted by Mr. Morales, included drilling 5-in. undisturbed soil borings in the marsh; laboratory testing; engineering analyses of levees and structures; and installation, monitoring, and evaluation of geotechnical instrumentation.</p>
10/13 – 02/15	<p>State of Louisiana – Route Interstate 10, Highland Road to LA Highway 73, East Baton Rouge and Ascension Parishes, Louisiana (21777)</p> <p>As a project engineer, Mr. Morales oversaw the field investigation phase of this project. He has performed analyses for deep foundations and analyzed settlement for the widening of the overpasses and approach embankments.</p>
01/13 – 11/18	<p>Port of New Orleans – Almonaster Bridge over the Inner Harbor Navigation Canal, New Orleans, Louisiana (22066, .01)</p> <p>Analyses included estimates of allowable vertical pile load capacities at the land borings for support of the proposed bridge replacement and pavement recommendations based on the auger borings. Slope stability analyses were performed for the channel widening and the cofferdam requirements. Lateral load analyses evaluated the new fender system and bridge support piles. As part of a response to a Value Engineering study, we evaluated the use of drilled shafts. Mr. Morales performed engineering analyses on this project.</p>

16. Staff Experience:			
Firm employed by Eustis Engineering L.L.C.			
Name	Chad L. Held, P.E.	Years of relevant experience with this employer	34
Title	Executive Vice President & Senior Project Manager	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	MS 2002 Civil Engineering BS 1998 Civil Engineering		
Active registration number / state / expiration date	PE.0030257 LA 09/30/2026		
Year registered	2002	Discipline	Civil
Mr. Held will meet Minimum Personnel Requirement Nos. 6 and 7 of this RFQ.			
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).		
08/06 – 12/14	<p>State of Louisiana - Huey P. Long Bridge Widening, Route U.S. Highway 90, West Bank and East Bank Approaches and Main Bridge Deck Widening, Jefferson Parish, Louisiana (18530, 20262)</p> <p>As a Project Engineer, Mr. Held developed allowable vertical pile load capacity estimates (precast concrete, steel H, and treated ASTM D 25 timber); allowable shaft load capacity estimates (7 and 9 feet in diameter) to support Pier IVA located along the East Bank Approach with and without the benefit of post-grouting the shaft tips; estimates of settlement for the proposed pile/shaft groups; evaluation of pile/shaft group capacity and spacing; lateral load analyses of pile foundations for various pile group configurations and loading conditions, in addition to analyses of a single pile, to evaluate the sensitivity of the point of fixity; dewatering and pressure relief recommendations for construction of Pier IVA; and recommendations for test pile and test shaft programs. Once construction began, Mr. Held performed dynamic pile testing and signal matching verification (CAPWAP® analyses) on selected piles to evaluate capacity for the project. He also interpreted crosshole sonic logging results.</p>		
06/21 – 01/22	<p>State of Louisiana, Department of Transportation and Development (LADOTD) - I-10 Calcasieu River Bridge Project, Lake Charles, Louisiana (24584)</p> <p>This project comprised 24, 100-ft borings (75% over land and 25% in marsh). Laboratory testing of samples includes triaxial unconsolidated undrained tests, Atterberg limits, particle size analysis, moisture content, percent passing a U.S. Standard No. 200 mesh sieve, and consolidation with rebound. A geotechnical data report, boring log files, and test results were provided to the client. Mr. Held was responsible for quality control regarding the review of the data being transmitted with the gINT® database and other project summaries.</p>		
03/11 – 08/16	<p>State of Louisiana - Wisner Boulevard Overpass, Orleans Parish, Louisiana (22972, 22637, 21349, 21966)</p> <p>Mr. Held provided quality control and review during the construction phase of the project. Eustis Engineering performed dynamic pile testing with signal matching on selected monitor piles, indicator piles, and job piles. Mr. Held reviewed and adjusted the results of the signal matching verification using his experience in subsoil conditions encountered at the site and considering the piles and driving system.</p>		



06/08 – 02/12	<p>State of Louisiana - Interstate 12 Widening from O’Neal Lane to Range Avenue, East Baton Rouge Parish, Louisiana (20298)</p> <p>As Senior Project Manager, Mr. Held provided an independent quality assurance technical review for various aspects of the project’s construction. Mr. Held performed dynamic pile testing services and CAPWAP analyses on precast concrete piles being driven as job piles. In addition, Mr. Held performed Wave Equation Analysis of Piles (WEAP) to approve hammers utilized on the project. Upon completion of dynamic pile testing and initial installation of test piles and indicator piles, Mr. Held also developed inspectors’ charts and pile driving criteria for respective pile bents.</p>
04/08 – 04/14	<p>U. S. Army Corps of Engineers - Inner Harbor Navigation Canal Surge Protection Project, New Orleans, Louisiana (20243.00-.14)</p> <p>As Project Engineer, Mr. Held performed dynamic pile testing as well as reviewed dynamic pile tests (DPTs) performed by others to ensure DPT data quality. CAPWAP analyses were performed on the end-of-driving and restrike DPTs to evaluate shaft resistance along the pile, soil setup over time, and ultimate pile capacity. Mr. Held was also on rotational call to provide project management services and assist with quality control and pile installation design questions.</p>
06/22 – 01/24	<p>State of Louisiana, Department of Transportation and Development, I-10/City Park Bridge Replacement Project, Baton Rouge, Louisiana (24821.00, .01)</p> <p>Eustis Engineering performed a geotechnical peer review for the proposed City Park crane trestle piles for the I-10/City Park Bridge Replacement project in Baton Rouge, Louisiana. In order to perform the peer review, Eustis Engineering was furnished Kiewit/Boh, AJV’s (Kiewit’s) design memorandum which outlined the design assumptions associated with the trestle bridge design performed by Kiewit. After authorization, Eustis Engineering was requested to perform independent geotechnical engineering analyses as part of this review. The limited geotechnical analyses included development of axial pile load capacity curves and lateral load analyses of the proposed pile groups to compare with the analyses performed by Kiewit. Eustis Engineering also performed dynamic pile tests (DPTs) on five job piles for the project. Mr. Held performed the consultation on the engineering analyses associated with the peer review and reviewed the results of the DPTs and CAPWAP analyses.</p>

16. Staff Experience:			
Firm employed by Eustis Engineering L.L.C.			
Name	Travis R. Richards, P.E.	Years of relevant experience with this employer	19
Title	Vice President of Testing and Senior Project Manager	Years of relevant experience with other employer(s)	7
Degree(s) / Years / Specialization		Graduate Certificate 2018 Coastal Engineering MS 2017 Engineering MS 2015 Engineering Management BS 1998 Civil Engineering	
Active registration number / state / expiration date		PE.0030992 LA 03/31/2027	
Year registered	2004	Discipline	Civil Engineering
Mr. Richards is the engineer in responsible charge for the quality control, technical functions, and performance of the soil mechanics' laboratory testing regarding our accreditations for geotechnical and construction materials testing in Louisiana. He meets Minimum Personnel Requirement Nos. 6 and 7.			
Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; <i>i.e.</i> , “designed drainage”, “designed girders”, “designed intersection”, etc. Experience dates should cover the years of experience specified in the applicable MPR(s).		
03/20 – 06/25	<p>State of Louisiana, Department of Transportation and Development, I-10 and I-12 College Flyover Ramp Design-Build Project, East Baton Rouge Parish, Louisiana (B0646)</p> <p>Services for this project included undisturbed borings, auger borings, and cone penetration tests (CPTs). Eustis Engineering L.L.C. also provided laboratory testing including Atterberg limits tests, hydrometer analyses, and one-dimensional consolidation tests. Mr. Richards provided quality review of the laboratory testing services and CPT results.</p>		
01/21 - Ongoing	<p>State of Louisiana, Department of Transportation and Development (LADOTD), Bayou Barataria Bridge, Jefferson Parish, Louisiana (24515)</p> <p>The goal of this project is a full replacement of the Bayou Barataria Bridge. Eustis Engineering obtained relevant permits and land access and drilled 24 borings over water, marsh, and pavement. Geotechnical analyses include vertical and lateral pile analyses, pile scour capacity, lateral load analyses, pile group settlement, ground settlement, settlement surcharge/remediation, retaining wall recommendations, slope stability, and pavement design. Mr. Richards oversaw the laboratory testing services and reporting. He adjusted the gINT® database/library to allow for client requested formatting and report generation to complete the data report.</p>		
06/21 – 01/22	<p>State of Louisiana, Department of Transportation and Development (LADOTD), I-10 Calcasieu River Bridge Project, Lake Charles, Louisiana (24584)</p> <p>This project comprised 24, 100-ft borings (75% over land and 25% in marsh). Laboratory testing of samples includes triaxial unconsolidated undrained tests, Atterberg limits, particle size analysis, moisture content, the test to establish the percent passing a U.S. Standard No. 200 mesh sieve, and consolidation with rebound. A geotechnical data report, boring log files, and test results were provided to the client. Mr. Richards' responsibilities included adjustments to the gINT library to produce the requested information. He also provided a quality level review of the data and laboratory summaries.</p>		



04/08 – 04/14	<p>U.S. Army Corps of Engineers - Inner Harbor Navigation Canal Surge Protection Project, New Orleans, Louisiana (20243.00 - .15)</p> <p>Mr. Richards' role as the geotechnical design lead included project management and review of deliverables of other geotechnical engineering consultants during the project, geotechnical design of project features, oversight and acceptance of piles driven to support the project, and served as the liaison for geotechnical matters for the design-build contractor, Shaw E&I, during the project.</p>
02/09 – 03/15	<p>U.S. Army Corps of Engineers - Preparation of Design Documentation Report and Plans and Specifications, WBV-74 and WBV-09b, Western Tie-In Closure Structure, St. Charles and Plaquemines Parish, Louisiana (20536)</p> <p>Mr. Richards was the instrumentation engineer assigned to the project. He was involved in the development and implementation of the instrumentation plan and oversaw the field installation of the geotechnical monitoring equipment including data loggers. Mr. Richards processed instrumentation readings and created modeling of the preload/surcharge stacks to evaluate progress of the project preload/surcharge program. He also summarized the instrumentation readings and observations in the form of geotechnical data reports.</p>
01/12 – 10/17	<p>State of Louisiana - Route I-10, Williams Boulevard to Veterans Boulevard and Loyola Drive to Williams Boulevard, Jefferson Parish, Louisiana (21687)</p> <p>Mr. Richards performed settlement analyses for various embankment fill heights and widths as well as slope stability analyses to evaluate each of the canal crossings.</p>
03/18 – 01/19	<p>Orleans Levee District - West Roadway Street Drainage Repairs, South Roadway Street to Floodgate L-01, New Orleans, Louisiana (23789)</p> <p>Mr. Richards provided direct oversight of the field inspectors, laboratory testing of soils and concrete, and quality assurance. Mr. Richards also provided review of material submittals, dispute resolution, and acted as a liaison among construction materials testing and project civil and geotechnical engineers.</p>
04/17 – 07/18	<p>City of New Orleans, Bourbon Street Reconstruction Project, Canal Street to Dumaine Street, New Orleans, Louisiana (23548, .01)</p> <p>As Project Manager, Mr. Richards provided direct oversight and review of soils and aggregates materials' sampling and laboratory testing, inplace nuclear density testing, and vibration monitoring results. Reporting and managing data were handled through an online database, MetaField.</p>
06/18 – 11/18	<p>Port of New Orleans - Almonaster Bridge over the Inner Harbor Navigation Canal, New Orleans, Louisiana (22066, .01)</p> <p>Mr. Richards provided the testing plan for the existing bridge concrete and non-destructive testing. He reviewed the results of the Windsor Probe and Schmidt manual impact hammer tests to provide the structural designers strength data for their assessment of the exiting pier to be incorporated into the new structure foundations.</p>

17. Firm Experience:

Firm name	Modjeski and Masters, Inc.		Discipline(s)*	Bridge, Road	
Project name	Huey P. Long Bridge Widening			Firm responsibility (prime or sub?)	Prime
Project number	700-18-0014	Owner's name	Louisiana Department of Transportation and Development		
Project location	Orleans and Jefferson Parishes		Owner's Project Manager	Mark Bucci, PE	
Owner's address, phone, email	1201 Capital Access Road, Baton Rouge, LA 70802, (225) 379-1067, mark.bucci@la.gov				
Services commenced by this firm (mm/yy)	12/86	Total consultant contract cost (\$1,000's)	25,684		
Services completed by this firm (mm/yy)	08/12	Cost of consultant services provided by this firm (\$1,000's)	N/A		

The existing Huey P. Long Bridge is a high-level, combination highway and railroad bridge which crosses the Mississippi River in New Orleans, Louisiana and is part of the complex urban freeway system in the area. M&M designed the original structure and provided construction supervision from 1925 until 1936. The original design called for two 9' vehicular lanes (in each direction) to be bracketed from the trusses; this design no longer provides adequate capacity. LADOTD engaged Modjeski and Masters, Inc. for services to study conceptual means to widen the existing bridge to provide three 11-foot vehicular lanes and shoulders in each direction. In addition to the structural design for the major bridge widening Modjeski and Masters provided the following roadway design services:

ROJECT FEATURES:

- Phase 1 – Conceptual study of the widening including: line and grade studies, geometric design, corridor upgrading. The widening was to provide three 11 ft. vehicular lanes and shoulders in each direction.
- Phase 2 – For the Structure (approaches, main bridge and substructure) preliminary and final design for new auxiliary trusses, main river pier top widening, drilled shaft and pile supported approach piers, aesthetic reinforced concrete columns and modifications to railroad approach superstructure to accommodate vehicular lane shifts, and cost estimates.
- Phase 2A – For the Interchanges (East and West Bank) line and grade plans, geometric design, road design, drainage, preliminary and final plans and cost estimates.
- Phase 3 – Construction Engineering Office support was provided to check thousands of shop drawings, handle RFI's and consult as needed in support of a construction monitoring team By Others for the project.
- Phase 4 – Bridge load rating and analysis



Personnel Involved: *Zolan Prucz, PhD, PE, Ralph J. Eppheimer, PE, Dave A. Kanger, PE, Cullen J. Ledet, PE, Lance V. Borden, PE, Jeff W. Newman, PE, Stacey P. Carr, PE, Jon E. Gerhart, PE, Jason W. Miles, PE*

17. Firm Experience:

Firm name	Modjeski and Masters, Inc.		Discipline(s)*	Bridge, Road	
Project name	LA 1 Port Allen Bridge Replacement			Firm responsibility (prime or sub?)	Prime
Project number	H.013183	Owner's name	Louisiana Department of Transportation and Development		
Project location	West Baton Rouge Parish, LA		Owner's Project Manager	Stephanie Doolittle, P.E.	
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802, 225-379-1329, Stephanie.Doolittle@la.gov				
Services commenced by this firm (mm/yy)	09/17	Total consultant contract cost (\$1,000's)			\$454
Services completed by this firm (mm/yy)	03/21	Cost of consultant services provided by this firm (\$1,000's)			\$380

The project consisted of replacing the existing northbound and southbound bridge structures on LA 1 over the Intracoastal Canal Waterway (ICWW). The proposed LA 1 SB Bridge will consist of 3 – 12' travel lanes and 2 – 10' shoulders and will be approximately 2,680' long. The proposed LA 1 NB Bridge will consist of 2 – 12' travel lanes and 2 – 10' shoulders (LA 1 NB roadway), a permanent 2' wide median barrier and 1 – 12' travel lane with 2 – 6' shoulders (I-10 EB Exit Ramp roadway). The Exit Ramp and LA 1 NB roadway will be separated by a permanent 2' wide median barrier until the LA 1 NB –ridge will bifurcate where the LA 1 NB roadway and I-10 EB Exit Ramp roadway will be carried on separate bridge structures. The LA 1 NB Bridge and I-10 EB Exit Ramp Bridge will be approximately 2,700' and 354' long, respectively. Both LA 1 NB and LA 1 SB Bridges will consist of a 870' long haunched three span continuous steel plate girder main span unit over the ICWW and prestressed concrete LG girder approach spans.

M&M is responsible for the design, plans, quantities and cost estimate of the bridge structures from abutment to abutment, including engineering support was also included as part of this project.

1. Foundation Design, Plans and Details
2. Substructure Design including Piers, Columns and Bent Caps
3. Prestressed Girder Approach Spans including Exit Ramp
4. Main Channel Spans including Haunched
Three Span Continuous Steel Plate Girder Main Span Unit over the ICWW
5. Abutments, wingwalls and approach slabs
6. Bridge Deck Drainage



Personnel Involved: *Zolan Prucz, Ph.D., PE, Cullen J. Ledet, PE, Stacey Carr, PE, Yu Ouyang, PE, Jared Weisman, PE, Mott J. Holt, PE*

17. Firm Experience:

Firm name	Modjeski and Masters, Inc.		Discipline(s)*	Bridge, Road
Project name	White River Bridge and Relief Structures (JOB BB0610)		Firm responsibility (prime or sub?)	Prime
Project number	AP No: IM-40-4(81)200	Owner's name	Arkansas Highway and Transportation Dept.	
Project location	Prairie County, AR		Owner's Project Manager	Frank Vozel, Deputy Director and Chief Engr.
Owner's address, phone, email	PO Box 2261, Little Rock, AR 72203, (501) 569-2000			
Services commenced by this firm (mm/yy)	08/2009	Total consultant contract cost (\$1,000's)		\$2,199
Services completed by this firm (mm/yy)	02/2017	Cost of consultant services provided by this firm (\$1,000's)		\$2,199

The White River Bridge consists of a 9,500 ft., two-lane vehicular bridge crossing the White River at Clarendon, Arkansas, a 2,500 ft. trestle bridge over Roc Roe Bayou and a 1,550 ft. relief structure over the White River floodplain, with the main river crossing consisting of a four-span continuous steel I-girder unit with a 350 ft. maximum span. Total project length is 5.1 miles.

Modjeski and Masters was engaged to perform the following tasks:

- Perform estimated maximum scour depth analyses for the main river piers
- Perform assessment of vulnerability and scour depth analysis for many bents in the 6,950 ft. trestle
- Perform vessel collision analysis
- Develop hydrograph and boring logs
- Develop project survey controls.
- Design and detail of horizontal and vertical project geometry
- Design and detail of typical sections,
- Design and detail of superelevation,
- Design and detail of intersection design,
- Design and detail of the bridge layout plan and profiles for two alternates
- Geometric study and computation of span lengths required to provide minimum 25' clearance from existing and future railroad track and selection of 114'-158'-114' spans for UPRR overpass.
- Structural Design for UPRR Overpass, 114'-158'-114 steel girder spans



Personnel Involved:

Yu Ouyang, PE, Cullen J. Ledet, PE

17. Firm Experience:

Firm name	Modjeski and Masters, Inc.		Discipline(s)*	Bridge, Road
Project name	US 61 at Thompson Creek Bridge Replacement		Firm responsibility (prime or sub?)	Prime
Project number	H.013193	Owner's name	Louisiana Department of Transportation and Development	
Project location	St. Francisville, LA		Owner's Project Manager	Stephanie Doolittle, PE
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA 70802, 225-379-1329, Stephanie.Doolittle@la.gov			
Services commenced by this firm (mm/yy)	09/17	Total consultant contract cost (\$1,000's)		\$502
Services completed by this firm (mm/yy)	08/22	Cost of consultant services provided by this firm (\$1,000's)		\$436

M&M provided all necessary preliminary and final plans for the rehabilitation of the northbound bridge and replacement of the southbound bridge on US 61 over Thompson Creek, between LA 10 and LA 964, near St. Francisville, LA. It was anticipated that traffic would be maintained during the construction of the new southbound bridge with temporary two-way traffic on the rehabilitated northbound bridge. The project also included the design and detailing of adding a helper bent to the northbound bridge. The plans were prepared in accordance with AASHTO LRFD Bridge Design Specifications and the Bridge Design and Evaluation Manual (BDEM), DOTD 2017 Design Guidelines, DOTD 2016 Standard Specifications for Roads and Bridges, DOTD Road Design Manual, and DOTD Hydraulics Manual. QC/QA was provided in accordance with Part 1, Chapter 3 of BDEM. Construction Related Engineering Support was provided and is currently on-going.

M&M developed and delivered the following project documents:

- Final Roadway design & plans
- Final bridge design & plans
- Final temporary detour roadway and bridge plans
- Transportation Management Plan (TMP) Level 2
- Construction Signing Plans
- As Design Rating
- Construction Cost Estimate
- Final Roadway and Bridge Quantities
- Special Provisions
- Design Waivers and Exceptions



Personnel Involved: *Zolan Prucz, PhD, PE, Yu Ouyang, PE, Jared Weisman, PE, Lindsey A. Woolverton, PE, Cullen J. Ledet, PE*

17. Firm Experience:

Firm name	Modjeski and Masters, Inc.		Discipline(s)*	Road, Traffic	
Project name	Cline Avenue Bridge			Firm responsibility (prime or sub?)	Prime
Project number	N/A	Owner's name	United Bridge Partners		
Project location	Houston, TX		Owner's Project Manager	Ken Szeliga	
Owner's address, phone, email	7800 E. Union Ave., Suite 525, CO 80237, (303) 257-4745, kszeliga@unitedbridgepartners.com				
Services commenced by this firm (mm/yy)	05/2020	Total consultant contract cost (\$1,000's)	\$6,000		
Services completed by this firm (mm/yy)	12/2021	Cost of consultant services provided by this firm (\$1,000's)	\$6,000		

The Cline Avenue Bridge is a 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.

The Bridge was designed by another engineering firm and when the construction of the bridge was approximate 70% complete 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 1.2 mile long segmental bridge. The bridge was opened to traffic on December 23, 2021.



M&M's New Orleans Highway Section developed temporary traffic control plans to improve traffic flow and safety for the initial bridge opening and performed an independent technical review (ITR) of the permanent striping, pavement markings and signage for the bridge and approaches to evaluate conformance with DOT, MUTCD and AASHTO design guidelines and criteria. (total project length = 3 mi.) M&M Prepared roadway striping and signage plan to improve the safety and operational efficiency of the facility. M&M also performed a feasibility study for two (2) proposed new interchanges which included conceptual exit/entrance ramp geometric layouts, roundabouts and structural bridge concepts. M&M established 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 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. Also, prepared plans for the installation of Supplemental Guide Signs in accordance with the Manual of Uniform Traffic Control Devices (MUTCD).

Personnel Involved: *Ralph J Eppheimer, PE Cullen J. Ledet, PE, Newell H. Schindler, PE, Justin M. Guillot, PE, Matthew J. Miller*

17. Firm Experience:				
Firm name	Eustis Engineering L.L.C.		Discipline(s)*	Geotech
Project name	Bayou Barataria Bridge		Firm responsibility (prime or sub?)	Prime
Project number	H.004420.5/H.015028.6	Owner's name	LADOTD	
Project location	Jefferson Parish, Louisiana		Owner's Project Manager	Kristy Smith
Owner's address, phone, email	5080 Florida Boulevard, Baton Rouge, Louisiana, 70806, 225-929-9133, kristy.smith2@la.gov			
Services commenced by this firm (mm/yy)	01/21	Total consultant contract cost (\$1,000's)		Unknown
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm (\$1,000's)		\$905 (to date)

The existing Bayou Barataria Bridge is being replaced with a new structure that will be 963 feet long and supported by 13 pile bents comprising square, precast concrete piles. An unequal arm swing span, 183 feet long, is proposed between Bents 6 and 8 to provide a horizontal channel clearance of 85 feet within Bayou Barataria. Mill and overlay of existing pavements along portions of LA Highways 45 and 3257 are planned. Portions of these highways will also be raised and widened, and approximately one mile of LA Highway 45 will be shifted 30 feet to the east into the marsh.

For the design of this project (H.004420.5), Eustis Engineering L.L.C. obtained the relevant Coastal Use Permits for the marsh as well as the roadway and marine locations. We also obtained necessary land access permissions. Drilling comprised 24 soil borings. Of these borings, 20 were drilled over marsh or water to depths ranging from 100 to 200 feet below the mudline. The remaining four borings were drilled to depths of 20 feet through existing pavements to evaluate proposed drainage structures and provide recommendations for mill and overlay of existing pavement sections to be incorporated into the final design. Geotechnical design analyses included estimates of vertical pile load capacity, effects of scour on pile capacity, soil-pile interaction to evaluate lateral loads, and pile group settlement. Additional analyses were performed to evaluate ground settlement, settlement surcharge/remediation programs, retaining walls, slope stability, and pavement design. Deliverables included a geotechnical data report, a geotechnical design report, and an electronic boring log data file.

For the construction phase of this project (H.015028.6), Eustis Engineering is completing engineering during construction services as a prime to the LaDOTD and is also providing selected construction materials testing services as a subcontractor. We have completed a Wave Equation Analysis of Piles (WEAP) driveability study and are performing dynamic pile testing on the monitor piles and selected job piles. We have also developed and implemented a vibration monitoring plan and have reviewed surcharge operations to date. Testing services have included logging the installation of driven square, precast concrete piles.



Personnel involved: *Gwendolyn P. Sanders, P.E., Travis R. Richards, P.E., and Matthew K. Morales, P.E.*

17. Firm Experience:

Firm name	Eustis Engineering L.L.C.		Discipline(s)*	Geotech and Selected CMT	
Project name	I-10 and I-12 College Drive Flyover Ramp Design-Build Project			Firm responsibility (prime or sub?)	Sub
Project number	H.013897	Owner's name	LADOTD Through Boh-G.E.C., Inc. Design-Build Team		
Project location	East Baton Rouge Parish, Louisiana		Owner's Project Manager	Sherri LeBas, P.E.	
Owner's address, phone, email	8282 Goodwood Boulevard, Baton Rouge, Louisiana, 225-612-4107, slebas@gecinc.com				
Services commenced by this firm (mm/yy)	03/25	Total consultant contract cost (\$1,000's)			Unknown
Services completed by this firm (mm/yy)	06/25	Cost of consultant services provided by this firm (\$1,000's)			\$635.7

This project included a variety of interchange improvements to I-10 West and College Drive including a flyover ramp exit to College Drive in advance of the I-10 and I-12 West merge; a modified exit from I-12 West to College Drive; and a parallel, separated at-grade ramp along I-10 West to the existing College Drive Interchange. Eustis Engineering L.L.C. was part of the design-build team participating in all aspects of this project.

Eustis Engineering L.L.C. completed an exploration of the site to supplement available data comprising ten undisturbed borings, eight cone penetration tests, and fourteen auger or direct push borings. Coordination of traffic control, permitting and safe execution of this exploration in this active and congested interstate corridor were completed by our team. Soil mechanics laboratory tests performed in our accredited laboratory on collected samples consisted of natural water content, unit weight, one-point unconsolidated undrained triaxial compression shear, Atterberg liquid limits and plastic limits, grain size sieve analyses, hydrometer analyses, and one-dimensional consolidation tests. These data were published in a GEOT-01 Geotechnical Exploration Data Report that was reviewed by the State of Louisiana, Department of Transportation and Development (LADOTD) to confirm compliance with their design requirements.

The design services included developing separate geotechnical design reports for each of seven major project features, specifically a sound barrier/noise-wall; the roadway (mainline and exit ramps); the Ward Creek Bridge widening; the I-10 Westbound Bridge over I-12, including driven piles and drilled shafts; retaining and/or Mechanically Stabilized Earth (MSE) walls at modified bridge abutments; box culverts or flumes for site drainage; high mast lighting, Intelligent Transportation Systems (ITS); and other miscellaneous features. GEOT-09 is the design report for the roadway. This report included evaluation of temporary and permanent asphaltic concrete pavements as well as temporary and permanent Portland Cement Concrete pavements. The LADOTD provided reviews of draft and final reports and verified design standards were met. We also participated in weekly progress meetings with the project design team and with the project stakeholders. Design review meetings were conducted as part of the quality review process. Our services during construction included observation or performance of testing, including dynamic pile testing.

Personnel involved: **Matthew K. Morales, P.E., Gwendolyn P. Sanders, P.E., and Travis R. Richards, P.E.**



17. Firm Experience:

Firm name	Eustis Engineering L.L.C.		Discipline(s)*	Geotech
Project name	Huey P. Long Bridge Widening, Route U.S. Highway 90		Firm responsibility (prime or sub?)	Sub
Project number	EE 18530, 19483, 20262	Owner's name	LADOTD Through Modjeski & Masters, Inc.	
Project location	Jefferson Parish, Louisiana		Owner's Project Manager	Bruce Peterson, P.E.
Owner's address, phone, email	1055 St. Charles Avenue, New Orleans, LA / 504-524-4344 / bpeterson@modjeski.com			
Services commenced by this firm (mm/yy)	08/06	Total consultant contract cost (\$1,000's)		Unknown
Services completed by this firm (mm/yy)	12/14	Cost of consultant services provided by this firm (\$1,000's)		\$697.5

In 2004, Eustis Engineering was retained by the LADOTD to perform 16 soil borings, to depths of 150 to 175 feet, to supplement available subsoil information. In 2005, Eustis Engineering, through a geotechnical subconsultant agreement with Modjeski & Masters, Inc. (MMI), performed the engineering analyses associated with the design of the bridge approaches. Our services included development of allowable vertical pile load capacities (precast concrete, steel H, and treated ASTM D 25 timber); allowable shaft load capacities (7 and 9 feet in diameter) with and without the benefit of post grouting the shaft tips; estimates of settlement for the proposed pile/shaft groups; evaluation of pile/shaft group capacity and spacing; lateral load analyses of pile foundations for various pile group configurations and loading conditions, in addition to analyses of a single pile, to evaluate the sensitivity of the point of fixity; dewatering and pressure relief recommendations for construction of Pier IVA; and recommendations for test pile and test shaft programs.



In 2006 and 2007, Eustis Engineering provided support to MMI and Louisiana TIMED Managers during railroad modifications completed as Phase II of the project. The engineering services performed during this phase of construction included review of contractor submittals and RFIs; performance of WEAP analyses for hammer approval; dynamic pile testing during the initial installation of the test piles; DPTs during restrikes of the piles one to three days after their initial installation; witnessing static pile load tests performed by others; and selecting pile order lengths for piles on the east and west banks to be installed for Phase II. Beginning in June 2008, Eustis Engineering began providing support services during Phase IV of the widening project. These engineering during construction services included those provided during Phase II (i.e., WEAP, DPT, RFIs, etc.) as well as assigning laboratory tests on soil borings performed by the contractor; review of final boring logs and test results; performance and evaluation of cone penetration tests to supplement the soil borings; review of contractor submittals for cofferdams; CAPWAP® analyses; review of load cell calibrations and observation of compression load tests; recommended pile order lengths and installation criteria; observation of test shaft installation; review and evaluation of crosshole sonic logging on test shafts and production shafts; observation of bi-directional (Osterberg) load testing of shafts; review of load test results; evaluation of shaft tip grouting; witnessing mini-SID inspection of the test shafts and production shafts; review of pile driving logs; and project management. Eustis Engineering participated in progress meetings and partnering meetings, performed periodic site visits, and provided other requested services.

Personnel involved: *Gwendolyn P. Sanders, P.E. was the project manager with Chad L. Held, P.E. and Matthew K. Morales, P.E. performing dynamic pile testing. Mr. Held also interpreted crosshole sonic logging results.*

18. Approach and Methodology:

COMPANY PROFILE

Modjeski and Masters, Inc. (M&M) has been performing engineering design services for LADOTD for over 60 years which has included bridge and roadway improvement projects, along with roadway lighting.

Even before the beginning of the Federal Interstate Highway System, M&M had established itself as an expert in the planning and design of major expressways and interchanges. M&M continues to be an invaluable partner to transportation agencies trying to keep pace with growing demands. We offer a full array of comprehensive highway, bridge and railroad design services. M&M provides solutions that not only meet today's needs but also accommodate future requirements as well.

M&M is well suited for this project based on our extensive history of performing Design Services for bridges throughout the state of Louisiana, along with our extensive history of performing engineering services for several Class I Railroads throughout the United States, including Louisiana. M&M has significant experience with the design of curved steel plate girder bridges, including railroad overpasses.

One example of a significantly relevant M&M project is the Martin Luther King Approach Structure, pictured on the cover of this 24-102 submittal. M&M provided Phase I, II and III engineering services for the replacement of the original east approach structure to the Martin Luther King Bridge over the Mississippi River, including miscellaneous repairs and roadway improvements to six other structures in the approach complex. The new structure consists of a five-span steel hybrid plate girder structure, curved as required, supported by large diameter pipe pile piers and stub abutments on piles. The structure is situated between two adjacent approach ramp structures, built in the 1990s. The structure spans relocated IL Route 3, three sets of railroad tracks, Missouri Avenue, a pump station deep well facility, and I-55SB/64WB. The existing retaining wall at the east abutment was replaced and reconfigured to provide additional sight distance.

A relevant LADOTD project which was recently designed by M&M and is currently under construction is the LA 1 Port Allen Bridge Replacement project. The main channel spans included haunched three-span continuous steel plate girder main span unit over the Intracoastal Canal Waterway (ICWW). The bridge approach structures also spanned over a railroad spur.

Additional details on this project are provided in Section 17 – Firm Experience of this SF24-102 submittal.

M&M's personnel have extensive knowledge of current LADOTD, the American Association of State Highway & Transportation Officials (AASHTO's) and the American Railway Engineering and Maintenance-of-Way Association (AREMA) policies, guidelines and design procedures.

PROJECT UNDERSTANDING

We understand the Scope of Services is to provide engineering services to reconstruct and widen US 11 from I-12 to US 190, including the replacement of the US 11 bridge over the Norfolk-Southern Railroad. The engineering services will be primarily in accordance with the design and phasing presented in the Environmental Assessment (EA) document. The initial Services shall consist of four (4) Task as outlined below:

1. Project Management
2. Detailed Line and Grade Studies
 - 2.1. Line and Grade Analysis
 - 2.2. Design Criteria
 - 2.3. Horizontal Alignment
 - 2.4. Vertical Alignment
 - 2.5. Typical Sections
 - 2.6. Utilities
 - 2.7. Line & Grade Study Report
3. Sequence of Construction
4. Preliminary Cost Estimate

Two (2) alternatives will be evaluated for the Line and Grade Study, as described below:

Alternative No. 1

Widening of US 11 to a four (4) lane, access-managed corridor including replacement of the existing bridge as described in the EA document.

Alternative No. 2

A reduced project scope limited to replacing the existing bridge with a two-lane bridge and necessary shoulders with project limits set accordingly. This alternative may not preclude future roadway and bridge reconstruction and widening to construct the full project limits and scope as defined in the EA. Additional Services may be authorized by Supplemental Agreement for the following:

- Preliminary Plans
- Final Plans
- Construction Support

PROJECT APPROACH

M&M has assembled a highly qualified team for the US 11 Norfolk Southern RR Overpass (HBI) project, capable of handling all phases of the project from the initial Line and Grade Study through construction completion. As indicated in the Organizational Chart in Section 14 along with the resumes in Section 16, M&M's Team has a highly experienced staff with extensive LADOTD experience in performing bridge and road design, along with railroad experience and knowledge of AREMA guidelines and policies. Joining the M&M Team for this project is the highly respected Louisiana Geotechnical Engineering Firm, Eustis Engineering, LLC (Eustis). Eustis will perform all required Geotechnical Engineering Services and fulfills MPRs 5, 6 & 7. M&M has a history of successfully teaming with Eustis, on Louisiana transportation improvement projects.

This project will be managed out of M&M's Louisiana Regional Business Unit, located in New Orleans, and will receive support for the design of the railroad overpass from their Railroad Services Business Unit.

Newell Schindler, PE will serve as M&M's Project Manager (PM). Newell has over 43 years of experience in the management and design of infrastructure projects, 13 years of experience in the Road Design Section of LADOTD, and 30 years of experience as a Consulting Engineer which has included Project Management and design of a multitude of transportation improvement projects. He has extensive knowledge of current LADOTD 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," and also completed LADOTD's TEPR Training.

Yu "Buck" Ouyang, PE will serve as the Design Lead for the bridge railroad overpass. Buck currently is a Senior Vice President and is currently the Director of M&M's Railroad Services Business Unit. Mr. Ouyang has been with Modjeski and Masters, Inc. since 1991, and has vast bridge engineering experience, ranging from conventional designs to special projects of high complexity, and from feasibility studies to construction services. He specializes in the design of fixed and movable highway and railroad bridges, and the rating and rehabilitation of existing bridges. His expertise also extends to analysis of complex bridge structures, vessel collision risk assessment and protection systems, seismic design, analysis and retrofit, and fatigue evaluations. Mr. Ouyang thrives on finding creative solutions to complex engineering challenges through high level analysis, efficient designs and with special emphasis on proper detailing. He also brings extensive experience in managing engineering and design efforts of varying sizes and difficulties, and in leading, coordinating and managing technical teams and subconsultants. His hands-on project management has led to successful and on-time completion of large and highly technical projects.

Eustis Engineering L.L.C. is a 79-year-old, small business, geotechnical engineering firm registered with the Louisiana Professional Engineering and Land Surveying (LAPELS) Board under License No. EF.0003558. Over the past three-quarters of a century, Eustis Engineering has worked on over 380 State of LADOTD projects either as a prime or sub-consultant. Some of the larger LADOTD bridge projects Eustis Engineering has recently undertaken include the I-10 and I-12 Flyover Ramp Design-Build Project at College Drive (S.P. No. H.013897), the Wisner Boulevard Bridge Replacement (S.P. No. H.006196), and the Bayou Barataria Bridge (S.P. No. H.004420.5). In addition to past LADOTD projects, Eustis Engineering has worked for other state and federal entities as well as industrial and commercial clients to provide a broad range of services. Their project scopes have included desktop studies, field investigations, laboratory testing, engineering design, construction monitoring, and geotechnical instrumentation. They have drilled shallow and deep soil borings and have performed cone penetration tests (CPTs) on thousands of projects with various site conditions (land, marsh, and riverine). Methodologies include wet/mud rotary, auger, and direct push with both field and laboratory extrusion. Laboratory testing will be performed by

certified technicians to ensure the LADOTD, ASTM, and AASHTO procedures are followed for all testing services.

Their geotechnical engineers routinely perform slope stability and settlement of embankments, pile/shaft foundations, earthen retaining structures (mechanically stabilized earthen walls, sheetpiles, soldier pile and lagging), and culverts. They also perform and evaluate construction monitoring including test pile programs, integrity testing, dynamic pile testing, and signal matching verification as well as planning, installation, monitoring, and interpretation of geotechnical instrumentation. Eustis is experienced in performing all tasks involved in geotechnical design according to AASHTO Load Resistance Factor Design requirements. We have extensive experience with dynamic pile testing and test pile programs, including Pile Driving Analyzer® (PDA) certifications of basic, intermediate, and master level. In addition to PDA testers, we retain equipment to perform pile integrity testing (PIT), single-hole and crosshole sonic logging (SSL and CSL), and a Thermal Integrity Profiler (TIP™). These tests have been conducted by their staff on driven piles, cast-in-place concrete piles, and drilled shafts to evaluate these data in conjunction with installation records or other testing to assess foundations.

M&M has reviewed the Environmental Assessment and has a thorough understanding of the Selected Alternative (Alternative 1R Modified) as documented in the Finding of No Significant Impact (FONSI), dated August 29, 2022.

Upon project award and notification, M&M will participate in a kick-off meeting with the appropriate LADOTD personnel and shall submit a detailed work hour proposal with thirty (30) calendar days following the notification of selection.

Detailed Line and Grade Study

Upon receipt of the Notice-to-Proceed, M&M will develop a proposed project schedule for review and approval by LADOTD. M&M will provide the LADOTD Project Manager with monthly updates on the project status and schedule.

In addition to coordination with LADOTD, early and close coordination and collaboration with Norfolk-Southern Railroad will be a key component to the successful completion of this project. Structures designed to pass over a railroad must comply with the standards established and used by the affected

railroad in its normal practice. These structures must also comply with applicable federal, state, county, and municipal laws. Regulations and standards should at least meet those of AREMA, the Association of American Railroads, and AASHTO. Clearance requirements and design features for railroad overpasses are detailed in specifications, including minimum clearances, shoulder widths, and distances to traffic lanes to ensure safety and functionality. These are often guided by AREMA manuals and individual railroad provisions. M&M will hold regular meetings with the railroad representatives.

M&M will utilize the topographic, property & SUE surveys, available geotechnical information provided by LADOTD, along with the Environmental Assessment and Guidance and requirements from Norfolk Southern Railroad

M&M shall develop the line and grade studies which will include the following:

- Establish roadway and bridge design criteria
- Establish AREMA and Norfolk-Southern RR design criteria and requirements
- Develop typical roadway sections
- Develop horizontal geometry
- Develop vertical geometry and set minimum roadway grade
- Identify major drainage structure locations
- Establish approximate required right-of-way
- Develop a list of impacted improvements, including potential utility conflicts
- Line and Grade Report

The following line and grade study variables are discussed in more detail below.

Design Criteria

M&M will review the design criteria presented in the EA Document and revise as necessary based upon LADOTD's current established Minimum Design Guidelines. Design criteria will include design class, design speed, lane and shoulder widths, shoulder type, minimum horizontal curvature, maximum fore slope and back slope, horizontal and vertical clearances, superelevation, and maximum longitudinal grade. The design criteria will be based on the latest

LADOTD’s Road Design Manual, Bridge Design and Evaluation Manual and AASHTO.

Horizontal Alignment

Horizontal alignments will be developed considering major utility conflicts, major drainage structures, existing roadway and bridge geometry, superelevation, sight distance and suggested sequence of construction. The proposed alignments will also consider existing roadway conditions, maintenance of traffic, existing bridge, environmentally sensitive areas, developed properties, urban constraints and railroad crossings.

Vertical Alignment

M&M shall develop the vertical alignment considering above ground and underground utility clearances, major drainage structure locations and railroad overpass clearances. The following geometric data will be displayed on the profile; PVI Locations, Vertical Grades, Length of Vertical Curves, headlight or stopping sight distances and vertical clearances.

Typical Sections

M&M shall develop Typical Sections for the roadway and bridges based on the revised and updated Design Criteria.

Utilities

M&M shall avoid utility conflicts wherever feasible. Any required utility relocations will be estimated based upon the concept level plans and the SUE survey provided by LADOTD.

Line and Grade Study Report

M&M shall prepare a Line and Grade Study Report which will include the following items as a minimum:

- Design Reports, including any required design waivers and/or exceptions
- Utility Conflicts
- Major Drainage locations
- Conceptual Layouts (Plan/Profile sheets & Typical Sections)

Sequence of Construction

M&M shall develop a suggested sequence of construction for both line and grade studies which shall maintain one (1) northbound lane and one (1) southbound lane throughout the duration of the construction phase. The suggested sequence of construction should minimize impacts to surrounding businesses and through traffic.

Preliminary Cost Estimates


M&M shall prepare preliminary Opinion of Probable Construction cost (OPCC) for the two (2) Alternatives developed for the Line and Grade Study.


Quality Assurance/Quality Control (QA/QC)


M&M QA/QC is included in this 24-102 submittal as an Attachment. M&M’s QA/QC plans relate 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. Checklists and forms will be developed to monitor special needs of LADOTD and/or a specific engineering activity. QC/QA reviews will be performed prior to the submittal of all milestone deliverables. All deliverables will conform to the requirements of Figure 1-02 (Stage 3 Plan Review Distribution) of LADOTD’s Roadway Design Procedure and Details Manual and Chapter 3, Appendix A of the LADOTD Bridge Design And Evaluation Manual.

Proposed Project Schedule


US 11 Norfolk Southern RR Overpass (HBI)						
ACTIVITY	MONTHS					
	1	2	3	4	5	6
Initial Services - NTP Issued						
Review all Available Data						
Establish Design Criteria						
Develop Typical Sections						
Establish Horizontal & Vertical Geometry						
Line & Grade Study Report (Draft)						
LADOTD Review						
Line & Grade Study Report (Final)						
Supplemental Agreements						
Preliminary Plans	Duration TBD					
Final Plans						
Construction Support						

19. Workload:				
Firm(s) ALL FIRMS MUST BE REPRESENTED IN THIS TABLE	Discipline(s) *	Contract Number and State Project Number	Project Name	Remaining Unpaid Balance**
	Bridge	JN 3144	Expert witness services in bridge design, construction, repair and forensic analysis	\$195,996
		Retainer Contract 440005395	Construction Engineering and Inspection with Painting Statewide	
	Other (Roadway Lighting)	H.004791	Subconsultant: Belle Chasse B7T Replacement P3 - Electrical and Structural	\$7,429
		IDIQ Contract 4400017263	Bridge Preservation Statewide	
	Bridge	Contract 44-29193 H.004100.5/H.004100.6	Subconsultant: LA 415 to Essen Lane on I-10 and I-12 Segment 1 Task 2	\$428,521
	Bridge	Contract 44-21128 H.014258	Subconsultant: LA 1: Port Allen Canal Bridge Replacement - Phase 2 CRES	\$501,930
		IDIQ Contract 4400020063	Electrical Services Statewide	
	Other (Roadway Lighting)	H.014646	I-20: US 165 to Garrett Road Lighting	\$31,927
	Other (Roadway Lighting)	H.014555.5	I-10 at LA109 Interchange Lighting (Toomey)	\$91,676
	Other (Roadway Lighting)	H.015019.5	I-10 at LA3063 Interchange Lighting (Vinton)	\$103,956
	Other (Roadway Lighting)	H.015085.5	I-10 @ LA108 Interchange (Vinton) Lighting	\$102,759
	Other (Roadway Lighting)	H.012889.6	I-20 Bossier City Lighting (Pines Rd to I-220) (CRES C1)	\$115,398
	Other (Roadway Lighting)	H.003184.6	I-10: Texas State Line - E. of Coone Gully Lighting (CRES C1)	\$62,103
	Bridge	Contract 44-20156 H.011965.6	Subconsultant: LA 47 IWGO Bridge Rehab CRES	\$85,580
		IDIQ Contract 4400024187	Bridge Preservation Statewide	
CEI/OV	H.003144.6 - Task Order 3	MRB (Luling) CEI of Latent Defects	\$4,293	

	Bridge	H.015115.5 - Task Order 2	LA 24 over ICWW Repair	\$6,569
	Bridge	H.011137.6 - Task Order 5	I-12: LA 1077 to LA 21	\$108,195
	Bridge	H.000263.5 - Task Order 4	LADOTD Chef Menteur Pass Br Rehab Scoping	\$54,296
	Other (Roadway Lighting)	H.015504.6 - Task Order 6	CCC Decorative Lighting	\$6,625
	Bridge	H.002980.6 -Task Order 9	I-10 Overpass Over US 165 & MP RR	\$56,947
	Bridge	H.014998.6 -Task Order 10	West Larose Lift Bridge Rehabilitation - Final Design	\$39,635
	Bridge	H.014998.6 -Task Order 11	West Larose Lift Bridge Rehabilitation - CRES Close Out	\$67,532
	Bridge	H.015826.5 - Task Order 12	I-20 Vicksburg Span Jacking	\$50,428
	Bridge	H.001271.5 - Task Order 13	Cane River Bridge Navigation Lights	\$187,746
	Bridge	H.014609.1 - Task Order 14	Cameron Ferry Landing Replacement	\$229,349
	Bridge	H.004647.6 - Task Order 15	I-20: MRB Geotechnical and Structural - Vicksburg	\$153,269
	Bridge	H.010882.6 - Task Order 16	4th Street Close-out Continuation CRES	\$21,434
	Bridge	H.011705 - Task Order 17	US 11 Rehabilitation Close-out Continuation CRES	\$11,274
	Bridge	H.014465.5 - Task Order 20	Vermillion River Bridge (Perry Bridge Rehab 2025 - Add Scope)	\$119,785
	Bridge	Contract 44-05673 H.011235.5	Subconsultant: I-49 South @ Verot School Road	\$2,979
	Bridge	Contract 44-05673 H.011235.5	Subconsultant: I-49 South @ Verot School Road (Supplement 5)	\$290
		IDIQ Contract 4400021593	Bridge Load Rating Services Statewide	
	Bridge	H.009859.5 - Task Order 1	Bridge Load Rating	\$474,066
	Bridge	H.009859.5 - Task Order 2	Load Rating of 10 Statewide Bridges	\$1,391,315
	Bridge	Contract 44-22581 H.011221.5	I-10: N.O. CBD3 (Poydras - Louisa)	\$40,487
Bridge	Contract 44-22581 H.011222.5	I-10: N.O. CBD4 (Louisa - I510)	\$311,362	
	IDIQ Contract 4400027614	Painting Inspection and Environmental Monitoring with Construction Engineering and Inspection - Statewide		
CEI/OV	H.011487.6	LA 182: Berwick Bay Bridge Rehabilitation	\$1,590,753	
	IDIQ Contract 4400027651	Bridge Load Rating Services Statewide		
Bridge	H.009859.5	Bayou Barataria - Limited Rehabilitation	\$39,030	
	IDIQ Contract 4400029685	IDIQ for In-Depth Bridge Inspection Statewide		
Bridge	H.009730.5 (Task Order 1)	Complex Inspection - Structural, Mechanical, Electrical LA 56 and LA 661	\$159,815	

	CE&I/OV	DOTD S.P./Task Order No. H.015028.6. Boh Bros. Subcontract No. 23210-009. Boh Bros. Project No. 2321034. Work Order No. 23210-017	Louisiana, State of - Department of Transportation and Development, LA 302: Bayou Baratavia Bridge Replacement, Phase 1, Jefferson Parish, Louisiana, Eustis Engineering Project No. 24515.02 (Construction materials testing services and vibration monitoring)	\$15,000
	Geotech	DOTD S.P No. H.015028.6. Contract 4400019017, Task Order 03	Louisiana, State of - Department of Transportation and Development, LA 302: Bayou Baratavia Bridge Replacement, Phase 1, Jefferson Parish, Louisiana, Eustis Engineering Project No. 24515.01 (Engineering During Construction including Dynamic Pile Testing)	\$51,000
	CE&I/OV	LADOTD Contract No. 4400021740. S.P. No. H.004100.6. F.A.P. No. H004100. 11265001.000 I-10 CMAR	Louisiana, State of - Department of Transportation and Development, I-10: LA Highway 415 to Essen Lane on I-10 and I-12, Phase I: West of Washington Street to Essen Lane, Phase I, Segment 01: West of Washington Street to Acadian Thruway, Route I-10, West and East Baton Rouge Parish, Louisiana, Eustis Engineering Project No. B0771 (Testing services for Volkert)	\$14,000

20. Certifications/Licenses:

<p>State of Louisiana Secretary of State</p> 	<p><u>COMMERCIAL DIVISION</u> 225.925.4704</p> <p style="text-align: center;"><u>Fax Numbers</u> 225.932.5317 (Admin. Services) 225.932.5314 (Corporations) 225.932.5318 (UCC)</p>									
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<p>State of Louisiana Secretary of State</p> 	<p><u>COMMERCIAL DIVISION</u> 225.925.4704</p> <p style="text-align: center;"><u>Fax Numbers</u> 225.932.5317 (Admin. Services) 225.932.5314 (Corporations) 225.932.5318 (UCC)</p>									
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Name	Type	City	Status							
EUSTIS ENGINEERING L.L.C.	Limited Liability Company	METAIRIE	Active							

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.**

Please see attached M&M's QA/QC Plan.

22. Sub-consultant information:			
Firm Name (Name must match <u>exactly</u> as registered with Louisiana's Secretary of State (SOS): <u>including punctuation, include screenshot(s) from SOS at the end of Section 20</u>)	Address	Point of Contact and email address	Phone Number
Eustis Engineering L.L.C.	3011 28 th Street Metairie, Louisiana 70002	Gwendolyn P. Sanders, P.E. gsanders@eustiseng.com	1-504-834-0157

23. Location:

If location is an evaluation criterion for this advertisement (see page 2) 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 Evaluation Criteria section of the advertisement.**

CONTRACT NO. 4400032800
US 11 Norfolk Southern RR Overpass (HBI)
STATE PROJECT NO. H.000688.5
F.A.P. NO. H000688
ROUTES: US 11
ST. TAMMANY PARISH

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

Prepared For:



Prepared By:



September 9, 2025

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

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

INITIAL SERVICES

The initial Services of this project consist of Four (4) Tasks

- Task 1 – Project Management
- Task 2 – Detailed Line and Grade Studies
 - 2.1 - Line and Grade Analysis
 - 2.2 – Design Criteria
 - 2.3 Horizontal Alignment
 - 2.4 Vertical Alignment
 - 2.5 Typical Sections
 - 2.6 Utilities
 - 2.7 Line & Grade Study Report
- Task 3 – Sequence of Construction
- Task 4 – Preliminary Cost Estimate

The services to be performed by the Consultant under this contract are described more specifically as follows:

1. PROJECT MANAGEMENT

The Consultant shall coordinate with DOTD on the project status and schedule. The Consultant shall submit a proposed project schedule to DOTD for review and approval. The Consultant shall coordinate with and provide the DOTD Project Manager with monthly updates on the project status and schedule. It is anticipated that the Consultant will have periodic coordination meetings with the DOTD Project Manager during the course of the project to review the project status and address any concerns of DOTD.

2. DETAILED LINE AND GRADE STUDIES

The Consultant shall develop two (2) detailed line and grade studies of the project corridor using two (2) different project limits and scopes as described below:

1. Widening of US 11 to a four (4) lane, access-managed corridor including replacement

of the existing bridge as described in the EA document.

2. A reduced project scope limited to replacing the existing bridge with a two-lane bridge and necessary shoulders with project limits set accordingly. The improvements in this scope must not preclude future roadway reconstruction and widening to construct the full project limits and scope as defined in EA document.

The purpose of the line and grade studies shall be to determine the exact limits of the project and anticipated right-of-way takings as well as to ensure that the selected alternative from the EA document can be designed in a manner that will comply with all current DOTD Design Guidelines and is reasonably constructible.

As part of the line and grade studies, the Consultant shall develop bridge design criteria as outlined in the Bridge Design and Evaluation Manual and shall propose the most cost-efficient and constructible bridge type, size, and location. The bridge type, size, and location shall consider and

exhibit reasonably sized foundation elements and other elements necessary to satisfy the railroad requirements such as railway crash walls.

The Consultant shall use the topographic survey, subsurface utility engineering survey, and property survey provided by DOTD to develop the line and grade studies.

2.1 Line and Grade Analysis

The Consultant shall prepare line and grade studies, which will include but are not limited to the following:

- Establishment of design criteria.
- Develop typical roadway sections.
- Develop horizontal geometry.
- Develop vertical geometry and set minimum roadway grade.
- Identify major drainage structure locations.
- Establish approximate required right-of-way (ROW) limits.
- Develop a list of impacted improvements, including potential utility conflicts.
- Line and Grade Report.

This analysis shall encompass more detailed variables which should include but not be limited to the following categories:

2.2 Design Criteria

The Consultant shall review design criteria from the previously prepared Environmental Document to determine if any modifications are necessary based upon currently established DOTD design criteria and will update the design criteria appropriately.

The Consultant shall establish the design criteria which will include design class and design speed, lane widths, minimum horizontal curvature, maximum side slopes, horizontal and vertical clearances, and maximum roadway grade. The Consultant shall prepare a Table of Design Criteria to be included in the document. The design criteria will be used in developing the horizontal and vertical alignments. The design criteria will be based on latest official DOTD Design Road Design Manual and American Association of State Highway and Transportation Officials (AASHTO) for design speed and functional classification, and on recommendations from DOTD.

Design criteria shall be submitted for DOTD review and approval.

2.3 Horizontal Alignment

A horizontal alignment study will be prepared. The alignment should consider major utility conflicts, major drainage structures, existing roadway/bridge geometry, superelevation, sight distance, and suggested sequence of construction. The alignment shall be developed consistent with all applicable Access Management, Complete Streets, Environmental Document, and other DOTD policies and manuals. The alignment should consider existing roadway conditions,

maintenance of traffic, existing bridge, and location of utilities, environmentally sensitive areas, topographic features, developed properties, urban constraints, and railroad crossings.

A plan view of the proposed horizontal alignment will be prepared. The following geometric data will be displayed on the plan view: baselines and stationing, edge of pavement, shoulder, curb and sidewalk lines, lane and shoulder dimensions, curve lengths (L), tangent lengths (T), curve radii (R), superelevation rates and transition lengths, control of access limits, existing and estimated r/w limits, bridge limits, existing and relocated utilities, as known, major drainage features, railroads, signalized intersections.

2.4 Vertical Alignment

A vertical alignment study will be prepared. The vertical alignment shall consider above ground and underground utility clearance, major drainage or structure locations, overpass clearances, etc. A profile view of the proposed vertical alignment will be prepared. The following geometric data will be displayed on the profile: P. V. I. Location, Vertical Grades, Length of Vertical Curve (V. C.), Headlight or Stopping Sight Distance (H. L. S. D. or S. S. D.), and required Vertical Clearances.

2.5 Typical Sections

The Consultant shall review original typical sections in the Environmental Document and either adopt or revise as necessary to meet approved design criteria. The Consultant shall

submit the typical cross sections to DOTD for approval.

2.6 Utilities

The Consultant shall avoid utility relocations whenever possible. Any required utility relocations will be estimated based upon the concept level plans and using DOTD provided SUE survey. Any existing utilities that are in conflict shall be noted in the Line and Grade Report.

2.7 Line & Grade Study Report

The Consultant shall prepare a line and grade report. This report will include, but not be limited to, the following sections:

- Design reports, any required design waivers and/or exceptions
- Utility Conflicts
- Drainage
- Conceptual Layouts or most cost effective, constructible solution (plan and profile sheets, typical sections)

3. SEQUENCE OF CONSTRUCTION

The Consultant shall develop a suggested sequence of construction for both line and grade studies. The suggested sequence of construction shall maintain one (1) northbound lane and one (1)

southbound lane throughout the duration of the project. The Consultant shall propose a sequence of construction that reduces negative impacts to the surrounding businesses and through traffic along the corridor.

4. PRELIMINARY COST ESTIMATE

The Consultant shall perform preliminary construction cost estimates for both line and grade scopes. These cost estimates shall include all temporary and permanent works required for the project.

ADDITIONAL SERVICES

The scope of services, compensation and contract time for the following additional engineering may be authorized by Supplemental Agreement(s).

- Preliminary Plans
- Final Plans, if required, shall be based on lump sum
- Construction Support, if required, shall be based on specific rates of compensation

Services typically performed during the Preliminary Plan Phase are outlined below.

Preliminary Plans

Preliminary Plans shall consist of all engineering services required for the completion of Preliminary Plans and cost estimates for the Project. Specifically, the work under this section consists of the following major items:

1. Prior to submitting any document to DOTD for review and comment, the Consultant shall complete detailed checks of all work product and peer reviews of substantial deliverables and specialized analyses. Detailed checks shall be completed by a staff person who is not directly associated with the development of the work product.
2. The Consultant shall review the topographic survey provided by DOTD. If the consultant determines that additional topographic survey is required, the consultant shall notify DOTD prior to beginning plan development.
3. The Consultant shall review the soil borings and geotechnical reports provided by DOTD. Consultant shall also prepare additional location plans as may be required by DOTD for conducting additional borings deemed necessary by DOTD.
4. Project kick off meeting, design/production meetings, site visit(s) as required.
5. Preparation and submittal of design criteria, QA/QC plan document, and Preliminary Plans
6. The preparation of Preliminary Plans for the Project shall be in accordance with the requirements outlined in the current editions of DOTD's Roadway Design Procedures and Details Manual and Hydraulics Manual. Design for Preliminary Plans shall be done in English units of measurement. Statements in the Manuals which may be in conflict with requirements specified in the main body of this contract shall be considered as superfluous information and not applicable to this contract. At the 30%, 60%, 90%, and 100% Preliminary Plans stages, plans shall be submitted to the Project Manager through ProjectWise upload for preliminary examination and comments after they have been developed to show all information required for inspection. Upon receipt of any such comments, the Consultant shall revise the plans accordingly. The Consultant shall submit to the Project Manager all computer-generated original reproducible of the Preliminary Plans. The Plans shall be dated and stamped "Preliminary" for further review, and for DOTD's use in developing the prints necessary for a complete Plan-in-Hand field inspection with members of DOTD and other interested parties, when so named herein, at a time and date mutually agreed to in advance by all parties.

Subsequent to the Plan-in-Hand inspection, the Consultant shall make all changes in the plans, as necessary, to reflect agreements reached at this Stage. The plans shall show the existing right-of-way and any taking lines required for additional right-of-way, and shall be referenced to the centerline of the Project. The Consultant shall then submit revised computer-generated original reproducible of the plans to the Project Manager.

Specifications for the Project shall be in accordance with the latest edition of Louisiana Standard Specifications for Roads and Bridges, amended to comply with the current practices of DOTD.

7. The preparation and submittal of (but not limited to) the following:

- a. Engineer's Estimates based on estimated quantities developed for each submittal of Preliminary Plans.
 - b. Special Provisions and Non-Standard Pay Items (if required).
 - c. Design Report and QA/QC Certification (with all signatures).
 - d. Documentation of all Required and Approved Design Waivers and/or Exceptions.
8. The design format for this improvement shall comply with the criteria prescribed in 23 CFR 625, Design Standards for Highways. The format of the plans shall conform to the standards used by DOTD in the preparation of its contract plans for items of work of similar character, including plans for all drainage and utilities affected.
 9. The Consultant shall conduct an in-depth field investigation of the existing conditions of the structure and have a clear understanding of the structure health and its serviceability. Take note of any site conditions that may hinder construction of the new structure.
 10. The Consultant shall prepare bridge design criteria and submit it to DOTD for approval prior to proceeding with the bridge design.
 11. The Consultant shall prepare preliminary bridge plans in accordance with approved design criteria and determine how traffic will be maintained during construction.

Roadway Plan Development

The Consultant shall provide preliminary roadway plans for the project including, but not limited to:

- Title Sheet
- Typical Section and Details
- Summary of Estimated Quantities
- Misc. Details & General Notes
- Reference Points and Bench Mark Elevation Sheets
- 1"=20' Plan/Profile sheets (with subsurface drainage and open ditch drainage)
- Design Drainage Maps
- Temporary Erosion Control
- Geometric Details
- Temp. Const. Signs, Suggested Seq. of Construction
- Cross-Sections (earthwork)
- Geometric Details

Bridge Plan Development

The Consultant shall provide preliminary bridge plans for the project including, but not limited to:

- Bridge Index
- General Notes
- General Plans
- Typical Sections
- Superelevation Diagram (if necessary)

- Construction Phasing Details
- Traffic Control Details
- Foundation/Pile Layout
- Pile Loads and Details

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. LADOTD Bridge Design and Evaluation Manual, Published on November 17, 2014 and latest revisions.
2. "Guidance on QC/QA in Bridge Design in Response to NTSB Recommendation (H-08-17)" (FHWA/AASHTO Guidance), which was published by FHWA and AASHTO in August 2011
3. LADOTD Construction Plans Quality Control / Quality Assurance Manual
4. EDSM No. Volume I. 1.1.24 on Plan Quality
5. Bridge Design Technical Memoranda (not part of the LADOTD BDEM)
6. Louisiana Standard Specifications for Roads and Bridges, Latest Edition
7. LA DOTD Illumination & Electrical Standards
8. LADOTD "A Guide to Constructing, Operating, and Maintaining Highway Lighting Systems"
9. ANSI/IES RP-8, Latest Edition
10. LADOTD Electrical Plan Layout and Presentation
11. National Electrical Code (NFPA 70)
12. Standard for Electrical Safety in the Workplace (NFPA 70E)
13. AASHTO Design Guides

QC/QA requirements for bridge design and preparation of plans and specifications are described in detail in the LADOTD Bridge Design and Evaluation Manual and the LADOTD Bridge Design Section QC/QA, and these policies will be fully adhered to by all team members. This document is consistent with and complements the LADOTD Bridge Design and Evaluation Manual and the LADOTD Bridge Design Section QC/QA.

A Quality Assurance Certification will be provided at the completion of each task using the Department's QC/QA Certification Form (LADOTD BDEM Chapter 3, Appendix D) and Certification Form (LADOTD BDEM Chapter 3, Appendix I). See Attachments 5 and 3, respectively.

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 one (1) Sub-consultants for this work:

Sub-Consultant	Services Provided
Eustis Engineering, LLC	Geotechnical Engineering Services

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.

h. 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.

i. 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.

j. 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.

k. 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.

l. 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.

m. 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 complete 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.

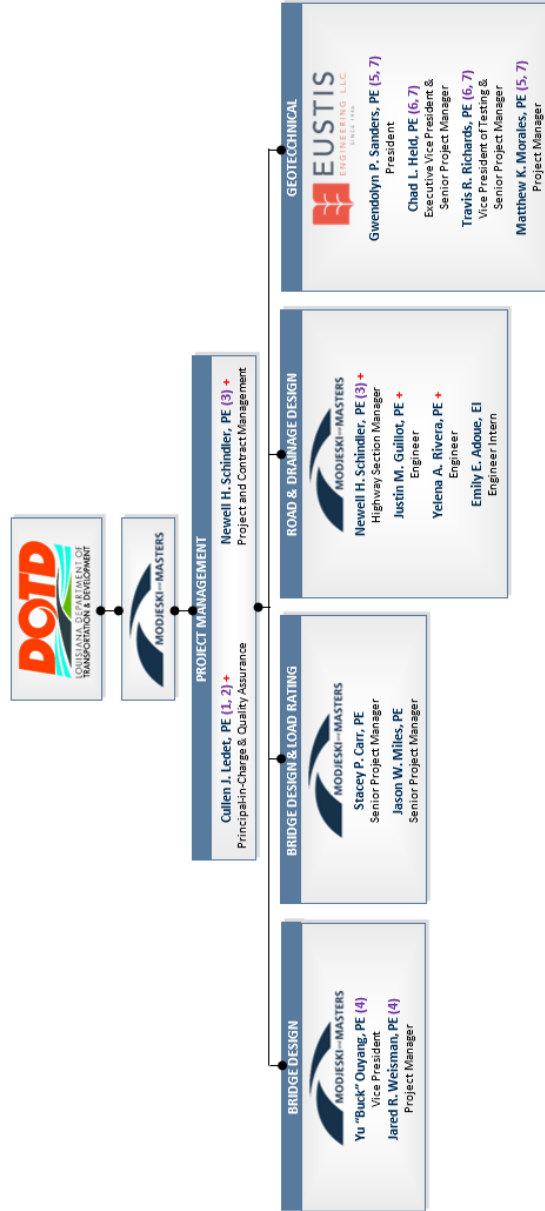
EXTERNAL AUDITS

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



LEGEND
 (#) FULFILLS MPR
 + ATSSA CERTIFIED

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: XXXX					
PROJECT: XXXXX Bridge Task Order #: XXXXXXXX					
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

Sub-Consultant	Services Provided
Eustis Engineering, LLC	NEPA and Environmental Services for Supplemental EA

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~~ ^{incorrect} 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 η_D , redundancy factor η_R , and operational importance factor η_I shall be listed in this section.

— **Design Loads**

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

— **Limit States**

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

— **Bridge Barrier**

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

— **Guardrail**

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

— **Approach Slab**

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

— **Deck and Deck Drainage**

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

— **Bearing**

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

— **Joint**

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

— **Superstructure**

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

— **Substructure**

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

— **Piles and Drilled Shafts**

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

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

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

- **Electrical/Lighting Design**
All electrical design criteria shall be included in this section if applicable. Standard plans and special details should be listed if they are utilized.

- **As-Designed Bridge Rating Criteria**
All as-designed bridge rating criteria shall be included in this section.

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

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.

Team Members	Name	Signature
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 V8.11.07.443 (SS2) or V8.11.09.832 (SS4)	Bentley MicroStation V8i V8.11.07.443 (SS2) or V8.11.09.832 (SS4)	MicroStation DGN	<ul style="list-style-type: none"> Consultants must upload MicroStation plan submittals directly into the ProjectWise discipline "Plans" folder.
CAD Standards Management	Altiva CADconform V8.00.70 (MicroStation)	Altiva CADconform V8.00.70 (MicroStation)	MicroStation DGN (with valid CADconform certification stamp)	<ul style="list-style-type: none"> Certify the DGN files as DOTD CAD Standard Compliant (indicated by valid compliance stamp) using CADconform running on MicroStation.
CAD Standards Quality Authentication	Altiva DMSconform "Check CAD Standards" (Administered by LaDOTD in ProjectWise)	Altiva DMSconform "Check CAD Standards" (Administered by LaDOTD in ProjectWise)	Approved ControlCAD Microsoft Excel report	<ul style="list-style-type: none"> DOTD reviewers use the DMSconform "Check CAD Standards" function to check for valid CADconform certification stamps and for several other compliance factors. 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.
CAD Attributes Quality Authentication	Altiva 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"> DOTD reviewers use the DMSconform "Check Attributes" function to check for completed indexing attribute values. 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.
CAD Plotting	Bentley ProjectWise InterPlot Organizer V8i V8.11.11.XX (SS4)	Bentley ProjectWise InterPlot Organizer V8i V8.11.11.XX (SS4)	Paper format drawings (InterPlot can also be used to create PDFs)	<ul style="list-style-type: none"> Full Size Submittals. 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. Half Size Submittals. 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. Letter Size Submittals. Letter size submittal sheets shall have an outside edge measuring 8.5" X 11".
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"> PDF format drawings are the formal electronic deliverable. Consultants must import (managed refresh) MicroStation format drawings into the appropriate ProjectWise discipline "Plans" folder (for each plan delivery milestone) in order to be able to publish PDF plan submittals. MSI setup file is needed to use the Publish to PDF tool. ProjectWise External PDF Publishing Downloads For Consultants.
Road Design	Bentley InRoads V8i V8.11.07.615 (SS2)	Bentley InRoads V8i V8.11.07.615 (SS2)	InRoads DGN graphics, ALG, DTM	<ul style="list-style-type: none"> DOTD only allows InRoads that runs on the MicroStation platform. InRoads SS4 and OpenRoads Designer are not supported at this time.
Hydraulic Design Drafting (Optional)	Bentley InRoads Storm & Sanitary V8i V8.11.07.615 (SS2)	Bentley InRoads Storm & Sanitary V8i V8.11.07.615 (SS2)	Hydraulics DGN Graphics	<ul style="list-style-type: none"> Bentley Storm and Sanitary is recommended for generating graphics only. DOTD only allows InRoads Storm & Sanitary that runs on the MicroStation platform. The current design standard is HYDR, which is used to check hydraulic designs.
Electronic Survey	Bentley InRoads Survey V8i V8.11.07.615 (SS2)	Bentley InRoads Survey V8i V8.11.07.615 (SS2)	Survey DGN Graphics, FWD, DTM, ALG, TXT	<ul style="list-style-type: none"> Any data collection tool and method that produces the required deliverable content and accuracy are acceptable. DOTD feature codes must be used during data collection to enable output of CAD survey graphics and associated Tag Data. DOTD only allows InRoads Survey that runs on the MicroStation platform.
PDF Plan Reader	Adobe Acrobat Reader	Adobe Acrobat Reader	N/A	
Digital Signatures	N/A (New Process In Development)	N/A (New Process In Development)	N/A (New Process In Development)	N/A (New Process In Development)
Collaboration Platform	Bentley ProjectWise Explorer V8i V8.11.11.XXX (SS4)	Bentley ProjectWise Explorer V8i V8.11.11.XXX (SS4)	Project plans and associated documents	<ul style="list-style-type: none"> Consultants are required to manage their plan submittals within DOTD's ProjectWise system. Use the managed Export-Export (Locks File) and managed Import functions to manage CAD development between PDF submittals. This prevents unauthorized changes and loss of attribute indexing. The ProjectWise Explorer application is provided free of charge for consultants working on LA DOTD projects. The Bentley Passport License required to run ProjectWise will be the Consultant's responsibility to purchase.
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 Ringette at david.ringette@la.gov (or call 225-379-1880) for general information and assistance regarding ProjectWise, PDF publishing setup.				
Browse to http://www.dotd.la.gov and then select Doing Business with LaDOTD > Electronic Standards for Plans for links to all DOTD electronic standards and software downloads.				
Browse to http://www.altivasoft.com/downloads/CADconform for the latest CADconform software downloads and related CADIOS platform compatibility information.				
Contact support@altivasoft.com (or call 281-295-2254) for information and assistance regarding installation of LaDOTD CAD Resources and Altiva CADconform software.				
Contact Altiva 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.