ADVERTISEMENT FOR ENGINEERING RELATED SERVICES
MAY 28, 2025

PARISH CONTRACT NO. 2025-118
STATE PROJECT NO. H.003855
FEDERAL AID PROJECT NO. H003855
ENTITY CONTRACT FOR CONG RELIEF WINFIELD ROAD
BOSSIER PARISH

DBE GOAL = 4%

PURPOSE

The Bossier Parish Police Jury is soliciting qualification statements from qualified consultants ("the consultant") with expertise in Surveying and Engineering Consultant Services. The qualified consultant shall be responsible for providing the general tasks as described more specifically in the Scope of Services for the purpose of improving congestion in Bossier Parish.

Under the authority granted by Title 48 of Louisiana Revised Statutes, the Louisiana Department of Transportation and Development (DOTD) hereby issues this advertisement for consulting firms to provide engineering and related services. **Consultants who are a Louisiana or foreign LLC or corporation should be appropriately registered with the Louisiana Secretary of State, as contemplated by Title 12 of the Louisiana Revised Statutes, and with the Louisiana Professional Engineering and Land Surveying (LAPELS) Board under its rules for firms. If a consultant is not in good standing in accordance with those provisions, it may be subject to consequences contemplated in Title 12 and/or the LAPELS rules. All requirements of LAPELS must be met at the time the proposal is submitted. Prime consultants must be registered with the Louisiana Secretary of State and the Federal Government, using SAM.gov, prior to contract execution.**

One (1) proposal will be selected for the contract solicited per this advertisement. Only one (1) BPPJ Standard Submittal Form proposal is required for this advertisement, and it represents the prime consultant's qualifications and those of any and all sub-consultants proposed to be used for the referenced contract(s). All identifying contract number(s) should be listed on the Form.

Request for Qualification Statements (RFQ) will be received by DOTD until the hour of 2:00 P.M., Wednesday, June 25, 2025. Interested parties are directed to the DOTD website: http://wwwapps.dotd.la.gov/engineering/ccs/cppr/ccs_advertisements.aspx#gsc.tab=0

Questions regarding the package should be emailed no later than **2:00 P.M., June 18, 2025** to DOTDConsultantAds80@la.gov. **Responses to all questions will be provided to all original plan holders via addendum.**

The contract will be between the selected consultant and **Bossier Parish Police Jury**, referred to as the "**Entity**".

SCOPE OF SERVICES

The general tasks to be performed by the consultant for this contract are described more specifically in Attachment A, which is incorporated herein by reference.

The consultant shall perform the work in accordance with the requirements of this advertisement and the resulting contract. Deliverables shall be in such format as required in Attachment A. The work performed by the consultant shall be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

MINIMUM PERSONNEL REQUIREMENTS (MPRs)

The requirements set forth in Attachment B must be met at the time the proposal is submitted.

EVALUATION CRITERIA

The criteria to be used by BPPJ in evaluating responses for the selection of a consultant to perform these services are listed below:

1. firm experience on similar projects, weighting factor of four (4);
2. staff experience on similar projects, weighting factor of four (4);
3. firm size as related to the project magnitude, weighting factor of three (3);
4. past performance on similar projects, weighting factor of six (6)*;
5. current work load with BPPJ, weighting factor of two (2);
6. approach and methodology, weighting factor of six (6).

*The consultant is to identify in the table below those evaluation disciplines consistent with the approach and methodology proposed in the submittal.

THE FOLLOWING TABLE MUST BE COMPLETED.

Sub-consultants are allowed to be used for this proposal. Fill in the table by identifying only those evaluation disciplines consistent with the approach and methodology proposed in submittal., the name of each firm that is part of the proposal, and the percentage of work in each past performance evaluation discipline to be performed by that firm. The percentage estimated for each evaluation discipline is for evaluation purposes only and will not control the actual performance or payment of the work. The percentages for the prime and sub-consultants must total 100% for each past performance evaluation discipline, as well as the overall total percent of the contract. (Add rows and columns as needed)

Past Performance Evaluation Discipline(s)	% of Overall Contract	Prime	Firm B	Firm C	Firm D	Firm E	Each Discipline must total to 100%
							100%
							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%						------

*The past performance evaluation disciplines are: Road, Bridge, Traffic, CE&I/OV, Geotech, Survey, Environmental, Data Collection, Planning, Right-of-Way, CPM, ITS, Appraiser and/or Other (please specify).
If sub-consultants are used, the prime consultant can perform less than 50% of the work, but none of the sub-consultants can perform a larger percentage of the overall contract than the prime consultant.

Proposals will be evaluated as set forth in the "Evaluation Criteria" section of this advertisement. The evaluation will be by means of a point-based rating system. Each of the above criteria will receive a rating on a scale of one (1) through five (5). The rating will then be multiplied by the corresponding weighting factor. The rating in each category will then be added to arrive at the proposal's final rating.

BPPJ's Project Evaluation Team (PET) will be responsible for performing the above described evaluation, and will present a shortlist of the three (3) (if three are qualified), highest rated consultants. The BPPJ will select the top rated consultant from the shortlist.

RULES OF CONTACT UPON ADVERTISEMENT

BPPJ is the single source of information regarding the contract selection. Any official correspondence will be in writing, and any official information regarding the contract will be disseminated by DOTD's designated representative via DOTD's website. The following rules of contact will apply during the contract selection process, commencing on the advertisement posting date and ceasing at the time of final contract selection. Contact includes face-to-face communication, the use of a telephone, facsimile, electronic mail (email), or formal or informal written communications with BPPJ. Any contact determined to be improper, at the sole discretion of BPPJ, may result in the rejection of the proposal.

Consultants and consultant organizations shall correspond with BPPJ regarding this advertisement only through the email address designated herein; DOTDConsultantAds80@la.gov and during BPPJ sponsored one-on-one meetings.

No consultant, or any other party on behalf of a consultant, shall contact any BPPJ employee, other than as specified herein. This prohibition includes, but is not limited to, the contacting of: department, office, or section heads, project managers, members of the evaluation teams, and any official who may participate in the decision to award the contract resulting from this advertisement.

BPPJ will not be responsible for any information or exchange that occurs outside the official process specified above.

By submission of a proposal to perform services pursuant to this advertisement, the consultant agrees to the communication protocol herein.

PROJECT TIME

The overall time for the completion of the scope of services is estimated to be **1.5 years**.

COMPENSATION

The compensation payable to the consultant for all services rendered in connection with this contract is estimated at **$3,204,628**. This estimate will be used for grading purposes only. Actual compensation will be determined by BPPJ based on work hours negotiated between BPPJ and the selected consultant. Within fifteen (15) calendar days of notification of selection, a kick-off meeting will be held with the selected consultant and appropriate BPPJ personnel. The selected consultant will be required to submit a work hour proposal within thirty (30) calendar days following the notification of selection. All negotiations must be completed within the timeframe set forth in the Consultant Contract Services Manual.

Payment will be made based on lump sum, specific rates of compensation, and unit cost of work.

DIRECT EXPENSES

To the extent that the consultant is allowed to claim reimbursement for direct expenses, all direct expense items that are not paid for in the firm's indirect cost rate, and are, needed and will be consumed during the life of the contract must be identified by the consultant during contract development. The acquisition or rental of standard equipment or resources to be used in the provision of services rendered for this contract will not be considered for payment under direct expenses (e.g., vehicles for construction engineering and inspection (CE&I) inspectors).

The consultant should own most of the equipment required to provide the work and services. The cost of this equipment should be included in the consultant's indirect cost rate. Equipment may be considered "specialized" if it cannot be considered standard equipment for that particular consultant's normal operating business needs. If a consultant believes special equipment is needed for the contract, the consultant must inquire through the Question and Answer process, as provided herein, whether the identified item will be considered specialized equipment for the individual contract.

All travel related expenses will be compensated under direct expenses, and will be in accordance with the most current Louisiana Office of State Travel regulations as promulgated in the Louisiana Administrative Code under the caption "PPM No. 49", with the exception that compensation for vehicle usage will be based on actual miles traveled directly and exclusively related to project needs. Vehicle rental rates will require prior approval from the PM.

QUALITY ASSURANCE/QUALITY CONTROL

The Scope of Services provided in Attachment A includes design of one (1) or more bridges and/or component parts thereof. The prime consultant shall submit a bridge design QA/QC

plan document specifically developed for this contract. The QA/QC plan document must comply with the minimum requirements in the DOTD Bridge Design Section Policy for QA/QC as stated in Part I, Chapter 3 of the DOTD Bridge Design & Evaluation Manual (BDEM). The grading instructions, the rating matrix, and the grading sheet for the QA/QC plan document are included in Appendix G of the BDEM Part I, Chapter 3 – Policy for QA/QC. The QA/QC plan document shall be prepared to address all evaluation criteria included in the rating matrix. The QA/QC plan document must be implemented for all bridge design activities in both design phase and construction support phase of the contract. The prime consultant is fully responsible for QA/QC of their work as well as the work of all sub-consultants. All project submittals must include a QA/QC certification that the submittals meet the requirements of the QA/QC plan document.

If Attachment A includes specific QA/QC requirements that contradict those set forth above, the requirements in Attachment A control.

TRAFFIC ENGINEERING PROCESS AND REPORT TRAINING REQUIREMENTS

As part of BPPJ's on-going commitment to high quality traffic engineering reports, a traffic engineering training course must be taken by traffic engineering PEs and EIs in order to be eligible to work on these projects. When traffic is included as a discipline on which past performance is evaluated, for consultants performing traffic engineering services (i.e., traffic analysis throughout all project stages and/or QC of traffic analysis), appropriate personnel must successfully complete the three (3) modules of the Traffic Engineering Process and Report Course offered by Louisiana Transportation Research Center (LTRC). This Course must be completed no later than the time the proposal is submitted or show proof of registration for the Course from the LTRC's Registration site. **Copies of training certificates or proof of registration are to be included in the proposal."** It will be the prime consultant's responsibility to ensure their staff and sub-consultants complete the training. Copies of training records may be obtained from the LTRC website https://registration.ltrc.lsu.edu/login.

WORK ZONE TRAINING REQUIREMENTS

As part of BPPJ's on-going commitment to work zone safety, required work zone training courses must now be taken every four (4) years in order for personnel to remain eligible to work on projects. For consultants performing preconstruction services (*e.g.*, design, survey, subsurface utility, geotechnical, traffic, bridge inspection, environmental services), appropriate personnel must successfully complete these courses. In general, the person in responsible charge of traffic control plans shall be required to have Traffic Control Supervisor training. For preconstruction field services performed within the clear zone, at least one (1) member of the field crew shall have Traffic Control Supervisor or Traffic Control Technician training. The consultant should identify all personnel listed in the staffing plan for the contract who have completed the appropriate work zone training courses. All preconstruction work zone training requirements shall be met **prior to contract execution**. It will be the prime consultant's responsibility to ensure their staff and sub-consultants have the appropriate work zone training.

REFERENCES

All services and documents will meet the standard requirements as to format and content of DOTD and will be prepared in accordance with the latest applicable editions, supplements, and revisions of the following:

1. AASHTO Standards – The American Association of State Highway Transportation Officials
2. AASHTO Highway Safety Manual
3. AASHTO – A Policy on Geometric Design of Highways and Streets
4. ASTM Standards
5. Cyber Security Training
6. DOTD – Bridge Design and Evaluation Manual (BDEM)
7. DOTD – Complete Streets
8. DOTD – Construction Contract Administration Manual
9. DOT – Consultant Contract Services Manual
10. DOTD – Hydraulics Manual
11. DOTD – Location and Survey Manual – REVISED OCTOBER 2023
12. DOTD – Addendum "A" to the Location & Survey Manual
13. DOTD – Louisiana Standard Specifications for Roads and Bridges
14. DOTD – Materials Sampling Manual
15. DOTD – Minimum Design Guidelines
16. DOTD – Off-System Highway Bridge Program Guidelines
17. DOTD – Pavement PRR Min Design Guidelines
18. DOTD – Roadway Design Procedures and Details Manual
19. DOTD – Stage 1 Planning/Environmental Manual of Standard Practice
20. DOTD – Testing Procedures Manual
21. DOTD – Traffic Engineering Manual
22. DOTD – Traffic Engineering Process and Report
23. DOTD – Traffic Signal Manual
24. e-CFR – Electronic Code of Federal Regulations (all applicable)
25. FHWA – Bridge Inspector's Reference Manual (BIRM)
26. FHWA – Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)
27. National Electrical Safety Code (NESC)
28. LTRC – Local Public Agency Qualification Program: Construction, Engineering and Inspection course
29. NFPA 70 – National Electrical Code (NEC)
30. NEPA – National Environmental Policy Act

CONTRACT EXECUTION REQUIREMENTS

The selected consultant will be required to execute the contract within ten (10) days after receipt of the contract.

A sample of the contract provisions can be requested from BPPJ's Purchasing Department.

ATTACHMENT A – SCOPE OF SERVICES

The project time is estimated at 1.5 years.

The home office indirect cost rate shall be applicable to all services except as otherwise designated hereafter.

STAGE 3: DESIGN

The project scope of work includes preparing plans, specifications and design documentation for a new four (4) four-lane roadway from Benton Road (LA 3) to 1 mile east of the Swan Lake Road intersection (Phase 1, 2 and 3) and then a new two-lane roadway from 1 mile east of the Swan Lake Road to the intersection of Bellevue and Winfield Road (Phase 4). The design of the project will be in accordance with the Selected Alignment (3R) shown in the approved Environmental Document. The roadway, an off system route, will consist of a four (4) lane divided highway (four (4) 12ft lanes with 8ft shoulders) for Phase 1-3 and two (2) 12ft lanes with 8ft shoulders with right-of-way clearance sufficient for future widening to a four (4) lane divided highway for Phase 4. In addition to the roadway design, five (5) bridges will be constructed along the route. Services will also include topographic survey, property survey, R/W maps and geotechnical analysis and design. Consultant will design all four phases to sufficient detail for right-of-way acquisition. Based on estimated funding, it is anticipated that final design will be needed for phase 1-3.

Part I: Surveying Services

Topographic Survey

This project is located in Bossier Parish, north of I-220 and east of Red River. A complete topographic survey including all utilities with depths and all drainage is required, along with finish floor elevations of all buildings that fall within the survey limits. This project shall be completed in accordance with the Location and Survey Manual and all current accepted Location and Survey Automation procedures. This project will extend from LA 3 to approximately 1 mile east of Swan Lake Road, which is identified as East West Phase 1, 2 and 3 and then from 1 mile east of the Swan Lake Road to the intersection of Bellevue and Winfield Road (Phase 4) along the proposed alignment in the attached sketch. The width of the survey and DTM are TBD.

A drainage map shall be required. Please refer to the Location and Survey Photogrammetry Unit for detailed instructions of what is required on the drainage map.

Permission of landowners shall be acquired by BPPJ before entering any property associated with this description. All work is to be done in English units of measurement.

Title Work

Shall be completed by BPPJ.

Property Survey

Shall consist of all Investigations, Studies, and Field Property Surveys required for the preparation of Base R/W Map.

A property survey is necessary for each required parcel. Title take-offs for affected ownerships may be obtained by the surveyor if necessary to expedite the commencement of field work.

Upon completion of the property survey, the consultant will notify the Location and Survey Administrator, in writing, and provide an electronic copy of field notes, an electronic text file listing coordinates and descriptions of all found monuments, a "PDF" copy of all documents (plats, maps, etc.) used to determine property line locations and a "PDF" copy of title take-offs or title research reports used to determine property line locations. Consultant shall also provide an electronic copy of the Property Survey in MicroStation "DGN" and Adobe "PDF" formats showing project centerline data, all surveyed property lines, Property monuments, existing right of way, and all major improvements within 50 feet of required taking lines with ties to project centerline. The MicroStation "DGN" file shall be referenced to the survey control coordinate system.

Title Updates

Shall be completed by BPPJ, if the Reports are more than six months old.

These Updates shall be used in the preparation of the final R/W Maps.

R/W Maps

Consultant shall prepare a right of way map that will consist of one (1) title sheet, approximately thirty-five (35) plan sheets at a scale of 1"=50', and approximately three (3) residual sheets at an acceptable scale to utilize the limits of those sheets. A PDF copy and two sets of paper prints of the 60% right of way map will be submitted for a joint plan review.

Upon completion of the Final right of way map, the Consultant will provide a parcel description input file, the original matte films, MicroStation DGN file, PDF copy of the map, and PDF copies of the Title Reports used to prepare the map, The title report PDF files will be separate PDF files for each report, edited to include the parcel designations on the cover sheet, and named by Project Number, Parcel Number, and date of report.

Note that all work is to be completed in English units of measurements.

Title Take-Off

Shall be completed by BPPJ.

Submittal Schedule:

Property Survey Data	150 Days from Notice to Proceed
60% Base Right of Way Map*	90 Days after authorization to proceed with Base Maps
Final Right of Way Map * *	45 Days after authorization to proceed with Final Maps

* Upon receipt of the of the Property Survey, the Location and Survey Task Manager shall suspend the delivery schedule until issuing an authorization to proceed with 60% Base Right of Way Maps.

** Upon receipt of the 60% Base Right of Way Maps, the Location and Survey Task Manager shall suspend the delivery schedule until issuing an authorization to proceed with Final Right of Way Maps.

Part III: The development of preliminary plans for this project includes (but is not limited to) the following tasks:

GEOTECHNICAL INVESTIGATION AND DESIGN SERVICES

The geotechnical portion of this project will consist of furnishing geotechnical investigation services and foundation design for the following proposed structures. Hereafter, all sites are referred to as bridge sites, regardless of whether the final design includes a bridge or box culvert.

Project No.	District	Crossing Description	Length (ft)	Bridge Borings	Subgrade Borings	CPT Soundings
H.003855	04	Multiple Structures	Varies	17	43	7

The following scope is applicable to the typical type of bridge site anticipated for this project. The number of borings is estimated based on bridge length and conforms to typical DOTD practice and AASHTO requirements. A shallow subgrade soil survey boring shall also be made at the end of each bridge. The Consultant shall notify BPPJ immediately if it becomes evident that a particular site requires geotechnical investigation and/or engineering efforts that are beyond this scope, including additional borings.

GEOTECHNICAL INVESTIGATION

The Consultant shall perform a geotechnical investigation consisting of soil borings, laboratory testing, optional cone penetrometer test (CPT) soundings, soil classification, site characterization, and soil boring logs. In addition to the referenced ASTM designations, refer to *FHWA Geotechnical Engineering Circular No. 5* (GEC 5) for best practices pertaining to geotechnical site characterization.

Field Investigation – Bridge Borings

The field investigation may consist of traditional soil borings with laboratory testing, or a combination of that along with CPT soundings (ASTM D3441, ASTM D5778). At least one soil

boring shall be made at each bridge site. Cone penetrometer soundings may be used in lieu of additional borings, but shall not be utilized where the geology does not permit the CPT rig to acquire data to the depth needed to perform foundation design for the bridge. It is the consultant's responsibility to conduct a desk study prior to commencing fieldwork in order to determine the adequacy of the proposed fieldwork for that particular site.

Borings/soundings shall be made to a minimum depth of 120 feet below existing grade; however, actual depths may need to be deeper depending on the anticipated foundation reactions. Reduction in foundation capacity due to scour shall be considered when planning the geotechnical investigation.

Water level readings shall be made in all soil borings. If the field investigation requires multiple days to complete, at least one 24-hour water level observation shall be made. Boring/sounding locations shall be located initially using a hand-held GPS. Final coordinates and elevations shall be surveyed.

Sampling

Soil borings shall be made using wet/mud rotary methods below the water table, with solid-stem augering (ASTM D1452) permissible above the water table. Sampling shall consist of pushing thin-walled Shelby tubes in cohesive soils (ASTM D1587) and Standard Penetration Testing (SPT) in cohesionless soils (ASTM D1586). Continuous sampling shall be performed within at least the upper 10 feet, followed by either:

- Sampling at 5-foot centers in cohesive soils, or
- Sampling at 3-foot centers in cohesionless soils.

Shelby tube sampling in cohesionless soils and SPT sampling in cohesive soils will not be allowed, except on a case-by-case basis where Shelby tubes cannot be pushed into very hard cohesive soils. When a Shelby tube is retrieved with no recovery, the hole shall be cleaned out and a SPT shall be performed directly below the previous sampling interval.

Borehole Abandonment

Boreholes and CPT soundings shall be backfilled in accordance with all local, State, and Federal regulations. Refer to the *Construction of Geotechnical Boreholes and Groundwater Monitoring Systems Handbook* for State regulations in the making of boreholes.

Sample Storage and Transport

The following practices shall be observed during transport and storage of the samples:

- Cohesive samples may be extruded in the field provided they are stiff enough to be wrapped and transported, otherwise, samples shall be extruded at the laboratory;
- Shelby tubes not extruded in the field shall be sealed using expansion packers to prevent moisture loss and disturbance;
- Samples shall be extruded using a continuous pressure hydraulic ram. Extrusion by any other method, such as water pressure, is prohibited;

- Samples shall be extruded directly onto a sample trough, not caught by the hand; and
- Samples shall be transported vertically in the same orientation that they were sampled.

Follow ASTM D4220 for sample transportation except as noted herein.

Field Logs

Soil borings shall be logged in the field using the visual-manual method for classification (ASTM D2488).

Field Investigation – Shallow Subgrade Soil Survey

A subgrade soil survey boring shall be made within 100 feet of each bridge end. Subgrade soil survey borings can be made utilizing continuous-flight augers, pneumatic, or direct-push sampling. The depth of each boring should be at least 8 feet below the finished roadway elevation or natural ground, whichever is greater, with additional sampling and testing requirements for areas of cut/fill greater than 10 feet. In these cases of excessive cut/fill heights, the deep soil borings may be more appropriate.

Laboratory Testing

All laboratory testing shall conform to applicable ASTM and AASHTO test designations.

Bridge Borings

The following laboratory tests shall be performed, at a minimum:

- Moisture content (ASTM D2216) – all samples;
- Unconsolidated-undrained triaxial compressive strength (ASTM D2850) – 75% of all cohesive samples;
- Atterberg Limits (ASTM D4318) – 75% of all cohesive samples; and
- Grain size testing (ASTM D1140 and ASTM D6913) – as needed to classify granular soils.

If consolidation testing is needed, one-dimensional consolidation tests (ASTM D 2435) may be performed in cases where settlement due to fill is expected to be significant.

Dry preparation methods shall not be used for any bridge or structure borings.

Extrusion Logs

While extruding soil samples from bridge borings in the lab, an extrusion log shall be made using the visual-manual classification method. New pocket penetrometer readings shall be made on representative portions of the samples.

Shallow Subgrade Soil Surveys

The different layers of the soil strata shall be identified every foot or strata break at the discretion of the lab engineer of record using the AASHTO classification system (ASTM D3282, AASHTO M 145) and the following tests:

- Atterberg Limits (ASTM D4318) – 100% of all cohesive samples; and
- Moisture content (ASTM D2216) – all samples;
- Grain size testing (ASTM D1140 and ASTM D6913) – as needed to classify granular soils;
- Hydrometer tests (ASTM D7928) – 75% of samples;
- Percent Organics (ASTM D2974) – as needed; and
- pH (ASTM G51) and resistivity (AASHTO T 288) – as needed, at applicable pipe crossings.

Dry preparation methods (ASTM D421) shall be used where applicable to test shallow subgrade soil survey samples.

Site Characterization & Boring Logs

For bridge borings, the Consultant shall use the field and laboratory data to classify the soils according to the Unified Soil Classification System (USCS) (ASTM D2487). The results shall be presented on signed and sealed soil boring logs adhering to the standard DOTD boring log format. In addition to the USCS classification, the soil descriptions shall include soil consistency/strength, color, and other details or inclusions such as seams, nodules, organics, etc.

Cone penetrometer test soundings shall be presented on signed and sealed logs adhering to the standard DOTD CPT log format. This standard format presents tip resistance, side friction, pore water pressure, and classification based on the Zhang and Tumay method. Examples of boring logs and CPT logs can be furnished upon request.

Shallow Subgrade soil survey borings shall be presented in a tabular format containing all test results and classified using the AASHTO soil classification method.

GEOTECHNICAL ENGINEERING DESIGN

The following geotechnical design elements are anticipated for this project. Should the project scope change from these assumptions, BPPJ should be notified immediately.

Driven Pile Design

Driven pile foundations may be used to support proposed bridge structures. Pile tip elevations shall be designed using the static equilibrium methods presented in FHWA Geotechnical Engineering Circular No. 12 (GEC 12). Specifically, the Nordlund and α methods shall be used in cohesionless and cohesive soils, respectively.

If CPT soundings are made, pile design shall also be evaluated by the Schmertmann, LCPC, and DeRuiter & Beringen Methods, which are presented in the final report for LTRC Project 98-3GT, *Evaluation of Bearing Capacity of Piles from Cone Penetration Test Data* (Hani and Abu-Farsakh, 1999). The computations can be automated using the Louisiana Pile Design by Cone Penetration Test software, published by LTRC and located at http://www.ltrc.lsu.edu/downloads.html. In general, the most conservative pile capacity curves generated from the GEC 12 and CPT direct methods should be used in design in the absence of site-specific load test data.

LRFD Design

The load and resistance factor design (LRFD) method shall be used to set pile lengths. Subsurface data for each bridge site shall be evaluated and divided into design "sites" (design reaches) based on the variability of the data. Refer to GEC 5 for best practices on selecting sites for LRFD design. At a minimum, all of the following resistance factors (φ) and corresponding pile resistance verification methods shall be evaluated based on costs and engineering benefits:

- φ = 0.80: One Test Pile per design site with 2% (or a minimum of two) production piles tested using dynamic monitoring and signal matching;
- φ = 0.65: One Indicator Pile per design site with 2% (or a minimum of two) production piles tested using dynamic monitoring and signal matching; or
- φ = 0.50: No Test/Indicator Piles, end-of-drive pile resistance verification using the Modified Gates equation.

Recent bid histories for estimating the costs of the various resistance factor scenarios may be found at: Cost Estimation and Value Engineering.

Scour

Pile design shall consider scour in accordance with *Bridge Design Technical Memorandum 21* (BDTM.21). Per *Bridge Design Technical Memorandum 32, Rev. 3* (BDTM.32.3), required nominal resistances shall be computed for two cases and presented on the Pile Data Tables:

- The case where the pile is driven to the required tip elevation without the benefit of predrilling, and thus developing full side friction along its entire embedment length; and
- The case where the contractor performs predrilling to the scour elevation in order to advance the pile; thus eliminating side friction within the predrill/scour zone.

Note that the Louisiana Pile Design by Cone Penetration Test software does not take scour into account; therefore, for sites with a significant overburden effect (sand profiles), pile design using CPT may not be appropriate.

Other Considerations

Additional design considerations such as lateral loading, uplift, group effect, downdrag, etc. shall be addressed in accordance with GEC 12.

Drilled Shaft Design

Drilled shaft foundations may be used to support proposed bridge structures. Shaft tip elevations shall be designed using the static equilibrium methods presented in FHWA Geotechnical Engineering Circular No. 10 (GEC 10).

LRFD Design

The load and resistance factor design (LRFD) method shall be used to set shaft lengths. Subsurface data for each bridge site shall be evaluated and divided into design "sites" (design reaches) based on the variability of the data. Refer to GEC 5 for best practices on selecting sites for LRFD design.

Drilled shafts shall be designed with a resistance factor, φ, of 0.70, corresponding with field verification using bi-directional load testing. Refer to LTRC Project 07-2GT, *Calibration of Resistance Factors Needed in the LRFD Design of Drilled Shafts* (Abu-Farsakh et al., 2010) to determine appropriate locally calibrated resistance factors for static design methods without load testing.

Other Considerations

Additional design considerations such as lateral loading, uplift, group effect, downdrag, etc. shall be addressed in accordance with GEC 10.

Bridge Foundation Load Test Program

If the project subsurface conditions are difficult, significant uncertainties exist in the foundation design, and cost savings can be predicted, a load test program may be appropriate. Depending on project conditions, a load test program may be included either in the Design or in the Construction phase. The load test program shall include the following:

1. Location and Type of proposed load test;
2. Design of test foundation (pile, drilled shaft, or other);
3. Dynamic test procedures and schedules;
4. Load increment requirements;
5. Maximum test load;
6. Instrumentation requirements;
7. Load test Layout and Design Sheets for plans;
8. Special Provisions for construction of test foundation and load test methodology;
9. Interpretation of load test results and recommendations; and
10. Foundation load test report.

Slope Stability

End slopes steeper than 3(H):1(V) shall be analyzed for slope stability using the Spencer method. A maximum resistance factor of 0.65 (equivalent minimum FoS ≈ 1.5) shall be used for typical conditions. A maximum resistance factor of 0.85 (equivalent minimum FoS ≈ 1.2) is adequate for rapid drawdown conditions. All potentially critical geometry, groundwater, surface water, and other loading conditions shall be considered for drained and undrained conditions as applicable.

Embankment Settlement

The addition of fill may lead to settlement concerns of existing subsurface soils. Consolidation/settlement analysis may be needed to determine the amount of settlement in inches/feet, to estimate the time required for settlement to take place when the proposed embankment is constructed on the project subsurface soils, and to make appropriate Engineering Design Recommendations relative to consolidation settlement. An embankment settlement analysis should include modeling of the appropriate borings logs and critical embankment geometry and determining the predicted total consolidation settlement and the predicted time rate to achieve only 1 inch of post-construction settlement occur. If reaching 1 inch of post-construction settlement is anticipated to occur in a time period greater than 5 months, recommendations to reduce the amount of consolidation settlement and/or to accelerate the settlement through the use of lightweight fills, surcharge placement, wick drains or other methods

determined by the engineer. If necessary, engineer should provide recommendations for a settlement monitoring program.

Earth Retaining Structures (ERS)

When adequate space is not available for a slope, a retaining wall may be required. DOTD has used Mechanically Stabilized Earth (MSE) Walls, Gravity Concrete Walls, Sheet Pile Walls, plus other types for transportation projects. The selection of the most appropriate retaining wall type for the specific project requirements and site and subsurface conditions can have profound effects on the project cost and constructability. Earth retaining structure calculations must include:

- Global stability check of ERS;
- External stability check of ERS;
- Settlement analysis of ERS;
- Analysis of governing load conditions under drained and undrained soil conditions; and
- Analysis of any other critical/governing configurations of the ERS.

DOTD developed "MSEW Design Guide, G.E.D.G. No. 8," latest edition may be used as a reference. Only DOTD approved wall systems will be allowed. Minimum embedment requirements and backfill material requirements must be included in the plans.

If sheet piles will be required to construct the design, sheeting must be designed by the Geotechnical engineer and section type, tip elevations, cutoff elevations, and stationing must be provided in plans. Calculations should include appropriate undrained and drained soil conditions and estimated long-term and short-term deflections. The resistance factors from the AASHTO Bridge Design Specifications, latest edition, shall be used to design sheet pile walls. The USACE Design Guide titled "EM-1110-2-2504- Design of Sheet Pile Walls" may be used as a reference.

DELIVERABLES

The following deliverables shall be provided during the course of the geotechnical investigation

Geotechnical Investigation Plan

Prior to beginning the field work associated with the geotechnical investigation, submit a site layout with proposed boring/CPT locations for review and approval. Additionally, coordinate with district personnel and provide traffic control plan if traffic will be affected. Traffic control plan should include anticipated dates of road/lane closure and limits of road/lane closure. Final traffic control plan should be submitted 60 days prior to anticipated closure dates.

Geotechnical Data Report

The Consultant shall furnish a final Geotechnical Data Report (GDR) detailing the results of the subsurface investigation. The GDR shall contain only factual information and no opinions or engineering recommendations. The GDR shall include, at a minimum:

1) Cover letter with executive summary describing the subsurface investigation
2) Table of contents
3) Report Body containing the following sections, at a minimum:

a. Project Description
b. Summary of subsurface investigation, including description of methods and standards used
c. Summary of laboratory testing performed, including description of methods and standards used

4) Appendix containing the following items, at a minimum:
    a. Boring plan
    b. General bridge plan & profile sheet used to establish the boring locations
    c. Soil boring logs
    d. Plots of grain size distribution curves and consolidation tests, as applicable
    e. Laboratory test data sheets, including extrusion logs, stress vs. strain plots for triaxial testing, consolidation test deformation vs. time plots (when applicable), Atterberg Limit worksheets, etc.

Geotechnical Interpretation Report

The Consultant shall furnish a final Geotechnical Interpretation Report (GIR) detailing assumptions, design methodologies, and final recommendations. The report shall be signed and sealed by a Professional Civil Engineer registered in the State of Louisiana, and shall include the following items, at a minimum:

1) Cover letter with executive summary describing the structure type, loads, and pile lengths. All plan-related notes and tables shall be provided in the cover letter.
2) Table of contents
3) Report Body containing the following sections, at a minimum:
    a. Project Description
        i. Summary of structure type
        ii. Summary of subsurface investigation
        iii. Summary of laboratory testing performed
    b. Subsurface Conditions
        i. Generalized subsurface profile
        ii. Summary of groundwater conditions
    c. Foundation Analyses
        i. Summary of design codes and specifications followed
        ii. Description of static pile analysis method(s) used as well as any relevant assumptions
        iii. Discussion of the evaluation of various LRFD resistance factors, field verification methods, and associated costs
        iv. Recommended foundation tip elevations/lengths
        v. Brief construction recommendations, identification of potential difficult driving conditions, etc.
    d. Slope Stability Recommendations (if applicable)
    e. Embankment Settlement Recommendations (if applicable)
    f. Earth Retaining Structures Recommendations (if applicable)
4) Appendix containing the following items, at a minimum:
    a. Any revised documents from the GDR, such as boring plans or soil boring logs

b. Plots of relevant soil data versus elevation including the interpreted design profile for each design site
c. Nominal pile resistance versus elevation plots for each design site and pile size/type
d. Pile data table
e. Plots of settlement versus time for any relevant consolidation settlement runs (if applicable)
f. Slope stability output plots for any relevant global stability analyses as well as external stability calculations for ERS (if applicable)

Report Format

The report shall be submitted in electronic format as a searchable .pdf file with bookmarks denoting the various sections of the report. Report body, charts, and figures shall be generated directly from the source applications in order to minimize file size. Documents scanned as raster images shall only be used when no other option exists for their inclusion into the report. All pages shall print to either 8.5" x 11" or 11" x 17" without scaling or adjustment.

Geotechnical Data

All geotechnical data shall be furnished to DOTD in a gINT file cloned from DOTD's standard gINT schema. Other formats or gINT files containing a modified schema/structure will not be accepted. A copy of the standard template will be provided upon request.

Soil Boring Logs

In addition to including half-size boring logs in the GIR, the logs shall also be included in the plans as signed and sealed full-size sheets.

Roadway Plans

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

- Title Sheet
- Typical Section and Details
- Embankment Widening Detail
- Summary of Estimated Quantities
- Misc. Details & General Notes
- Reference Points & Benchmark Elevation Sheets
- Temporary Erosion Control
- Existing Drainage Area Map
- Design Drainage Map
- Cross Section (Earthwork)
- Geometric Details
- 1"=50' Plan/Profile sheets

Additional Comments: Electronic files will be in MicroStation and InRoads format.

There are five (5) proposed bridges within the limits of the project, two (2) cast-in-place slab span and three (3) precast prestressed (LG type) girder bridge.

Bridge Design/Evaluation Criteria

The design/evaluation criteria are:

- Provide safe and aesthetically pleasant structures for the traveling public.
- Provide the functionality, durability, corrosion protection, ease of inspection and maintenance.
- Each bridge shall be designed for four (4) travel lanes with the required shoulders.
- New Structures shall be designed in accordance with the latest AASHTO LRFD Bridge Design
- Specifications, LADOTD Bridge Design Manuals and Bridge Design Technical Memoranda.
- All guardrails shall meet the current LADOTD bridge standards.
- The hydraulic analysis for the bridges over stream crossing shall be included.

Tasks

The following tasks shall be performed under this contract:

Task 1: Prepare design criteria and submit it to BPPJ and DOTD for approval prior to proceeding with the design.

Task 2: Prepare preliminary and final bridge plans for all the structures within the limits of the project in accordance with the final decisions made by BPPJ and DOTD and the approved design criteria.

Task 3: Prepare LRFD as-designed bridge rating for all new structures in accordance with the latest edition of the AASHTO Manual for Bridge Evaluation, LADOTD Policies and Guidelines for Bridge Rating and Evaluation, and Bridge Design Technical Memoranda. The bridge rating report shall also be prepared in accordance with the aforementioned publications for each structure.

Task 8: Prepare special provisions and non-standard (NS) pay items.

Task 9: Prepare construction cost estimate.

The Consultant cannot proceed to final plans until environmental has been cleared.

ADDITIONAL SERVICES

The scope of services and compensation for the following additional services will be authorized by Supplemental Agreement(s):

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

Part IV: Final Design

After approval of the preliminary plans by BPPJ and DOTD, the Consultant shall develop final plans upon authorization by Supplemental Agreement. The development of final plans for this project includes the following tasks:

- Final road and bridge plans and calculations
- As-Designed Rating
- Construction Cost Estimates
- Final road and bridge Quantities
- Special Provisions (if required)

The Consultant shall be responsible for producing Final Plans for construction of the roadway and structures as previously described, including an LRFR as-built load rating document upon completion of construction of all structures.

During the progress of preliminary and final design phases of work, standard intermediate submittals will be made to BPPJ and DOTD for review and comment. Comments received as a result of the submittals will be discussed with BPPJ and DOTD and incorporated into the subsequent submittal of that respective phase as warranted.

All design and drawings will comply with the requirements of the latest AASHTO LRFD Bridge Design Specifications, the DOTD LRFD Bridge Design Manual (including Technical Memoranda), the DOTD Road Design Manual and the current edition of the DOTD Standard Specifications. Where it is absolutely necessary to depart from the Standard Specifications or augment them, Special Provisions and/or Non-Standard (NS) Item Number requests shall be provided to DOTD.

All drawings will be developed using MicroStation and Cad Conform and shall comply with the DOTD CADD Standards.

Consultant Submittals

- Design Criteria
- Preliminary Plans **(Percentages to be determined)**
- Final Plans **(Percentages to be determined)**
- Special Provisions and NS Pay Items
- Construction Cost Estimate
- Design Calculations
- As-Designed Bridge Rating Reports
- QC/QA Certification (with all signatures)

SERVICES TO BE PERFORMED / ITEMS TO BE PROVIDED BY DOTD

- Standard Plans (as needed)
- Approved Environmental Document

ELECTRONIC DELIVERABLES

Consultant hereby agrees to produce electronic deliverables in conformance with DOTD Software and Deliverable Standards for Electronic Plans document in effect as of the effective date of the most recent contract action or modification, unless exempted in writing by the Project Manager. Consultant is also responsible for ensuring that sub-consultants submit their electronic deliverables in conformance with the same standards. DOTD Software and Deliverable Standards for Electronic Plans document and DOTD CAD Standards Downloads are available via links on the DOTD web site.

Consultant shall apply patches to CAD Standard Resources and install incremental updates of software as needed or required. Consultant hereby agrees to install major updates to software versions and CAD Standard Resources in a timely manner. Major updates of CAD standards and software versions shall be applied per directive or approval of the DOTD Design Automation Manager. Such updates will not have a significant impact on the plan development time or project delivery date, nor will they require Consultant to purchase additional software. Prior to proceeding with plan development, Consultant shall contact the Project Manager for any special instructions regarding project-specific requirements.

In the event that any Digital Plan Delivery Standard conflicts with written documentation, including DOTD plan-development Manuals, the Digital Plan Delivery Standard governs. Consultant is responsible for contacting the Project Manager should questions arise.

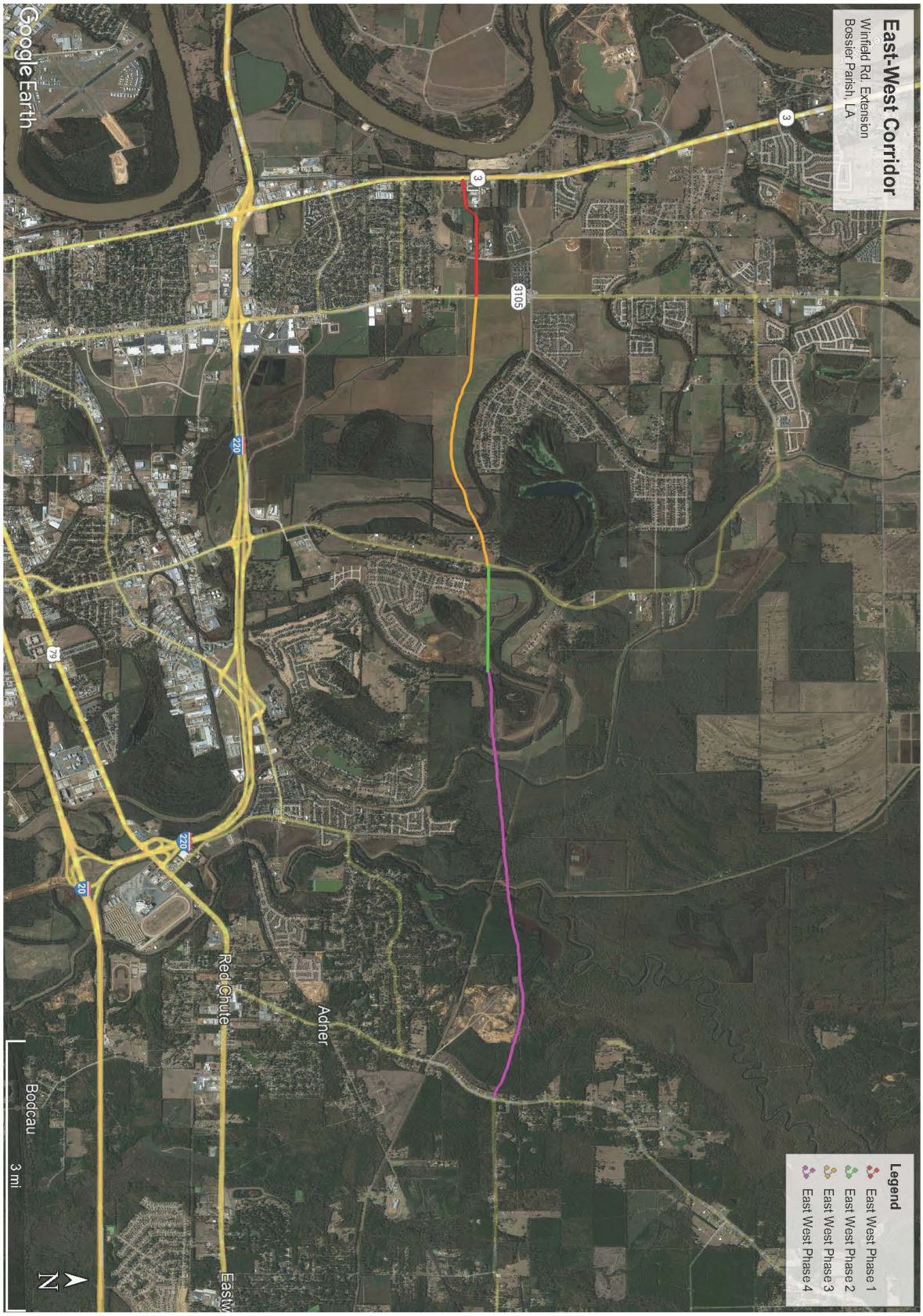
Consultant shall upload (or check in) electronic deliverables directly into the DOTD ProjectWise repository at each plan delivery milestone. Consultants are responsible for performing certain operations at each milestone including, but not limited to, the following:

- 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 PDF format plan submittals in ProjectWise using automated publishing tools
- Digitally sign PDF format plan submittals in ProjectWise according to DOTD standards and procedures (Final Plans, Revisions and Change Orders). Signatures shall be applied in signature blocks provided with electronic seals and Title Sheets.

Additionally, after reviewing deliverables for each submittal milestone, the Project Manager shall notify Consultant regarding the availability of two automatically-generated informational reports in ProjectWise. These reports document the completion status and other information regarding indexing attributes and CAD standards. Consultants shall take these reports into account and make any necessary adjustments to plans before the next submittal milestone; or sooner, if directed by the Project Manager.

SPECIFIC SOFTWARE AND / OR EQUIPMENT DESIRED

MicroStation and CadConform


East-West Corridor
Winfield Rd. Extension
Bossier Parish, LA
Legend
East West Phase 1
East West Phase 2
East West Phase 3
East West Phase 4
Google Earth
Bodcau
Red Chute
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ATTACHMENT B – MINIMUM PERSONNEL REQUIREMENTS (MPRs)

The following requirements must be met at the time the proposal is submitted:

1. At least one (1) principal of the prime consultant shall be a registered professional engineer in the state of Louisiana.
2. At least one (1) principal or other responsible member of the prime consultant shall be currently registered in the state of Louisiana as a professional engineer in civil engineering.
3. At least one (1) principal or responsible member of the prime consultant shall be a professional civil engineer, registered in the state of Louisiana, and shall have a minimum of five (5) years of experience in responsible charge of designing road projects.
4. At least one (1) professional civil engineer, registered in the state of Louisiana, shall have a minimum of five (5) years of experience in designing cast-in-place slab spans.
5. At least one (1) professional civil engineer, registered in the state of Louisiana, shall have a minimum of five (5) years of experience in designing precast prestressed (LG type) girder bridges.
6. At least one (1) professional civil engineer, registered in the state of Louisiana, shall have a minimum of five (5) years of experience in Geotechnical Design involving Louisiana soils and bridge structures
7. At least one (1) professional land surveyor, registered in the state of Louisiana, shall have a minimum of five (5) years of experience in conducting topographic and property surveys, and preparing right of way maps.

MPRS ARE TO BE MET BY SEPARATE INDIVIDUALS, UNLESS STATED OTHERWISE BELOW.

MPR Nos. 1 through 3 may be met by the same person but cannot satisfy any other MPR.

MPR Nos. 4 through 7 may be satisfied through the use of a sub-consultant(s).

MPR Nos. 4 and 5 may be met by the same person but cannot satisfy any other MPR.

NOTE: WHEN SATISFYING A MINIMUM PERSONNEL REQUIREMENT, PLEASE ENSURE THE RÉSUMÉ REFLECTS REQUIRED EXPERIENCE AS REQUESTED.

- Please note the number of MPRs are minimal; however, all relevant personnel necessary to perform the Scope of Services must be identified in the submittal.