ATTACHMENT A

Scope of Work

November 8, 2019
SCOPE OF WORK

I. OVERVIEW

A. The intent of this solicitation and resulting Contract is to obtain professional construction management services for the construction of VRE’s Lifecycle Overhaul and Upgrade (LOU) Facility, to be constructed at VRE’s Crossroads Maintenance and Storage Facility (MSF) in Spotsylvania County, Virginia. The selected firm is referred to herein as the “Consultant” or “Construction Manager (CM)”. The General Contractor or Construction Contractor is referred to herein as the “Contractor” and will be awarded a separate contract for construction.

B. The Consultant shall provide all labor, supervision, materials, supplies, equipment and transportation required to provide full construction management services (General, Pre-Construction Phase, Construction Phase and Project Close-out) to ensure the Work is performed in accordance with the Contract plans, specifications, applicable codes, regulations, and standards. The Consultant shall take initiative and act to mitigate circumstances that could lead to claims, resolve conflicts promptly, and keep VRE advised of any potential disputes. The Consultant shall have sufficient financial resources to complete the Scope of Work to the satisfaction of VRE.

C. The Consultant’s work shall be managed through VRE’s Headquarters Office of Design and Development. A Project Manager (PM) will be designated by VRE for this contract to coordinate all tasks.

II. GENERAL REQUIREMENTS

A. The Consultant shall provide Construction Management Services from pre-construction through project closeout. VRE anticipates the term of the construction contract to be twenty-four (24) months from Notice-to-Proceed (NTP) to closeout. The term of this Contract shall be thirty (30) months from Notice-to-Proceed. Pre-construction services are anticipated to be up to three (3) months in duration preceding the construction contract and up to three (3) months for project close-out.

The Construction Management Services requested here are intended to ensure that the construction contractor’s work is performed in a manner consistent with the plans and specifications. ATTACHMENT G: Prefinal Not for Construction Plans.
III. SERVICE REQUIREMENTS

The Consultant shall perform construction management services to monitor construction project activities through all phases of the project. The Consultant’s responsibilities shall include, but not be limited to, the following tasks:

A. General

1. Ensure the Contractor’s compliance with applicable safety and security requirements as enumerated in the plans and specifications.

2. Monitor project schedule and costs.


4. Coordinate and advise the VRE Project Manager (PM) of construction progress (schedule), unusual disruptions, potential changes, potential Change Orders.

5. In conjunction with, and following approval from, the VRE PM, initiate actions to mitigate activities that may lead to claims and/or stop work orders and resolve potential conflicts as promptly as possible.

B. Pre-construction Services

1. Review plans, specifications, design documents, site conditions, site condition reports, and other pertinent documents provided by VRE for potential schedule, phasing, staging and cost impacts as well as for errors, omissions and anomalies. Report any findings to VRE.

2. Conduct and provide written recommendations on constructability, cost and schedule to mitigate impacts. Submit a draft and final report identifying all constructability review findings to the VRE PM within thirty (30) calendar days from issuance of the NTP.

3. Evaluate and verify the accuracy of all designer prepared construction cost estimates prepared in the design phase for correct methodologies, assumptions used and for estimate reasonableness.

4. Review construction documents and bid documents for design integrity, constructability, dimensional accuracy and potential coordination impacts among project disciplines. Submit the
findings to the VRE PM following the construction cost estimate review.

5. Assist the VRE PM with the preparation of a Project Schedule for the components of the Work, including phasing of construction, times of commencement, completion required of the Contractor(s), and ordering and delivery of products requiring long lead times. The Construction Schedule shall be in MS Project format for submittal, review and tracking.

6. Prepare an anticipated sequence of construction identifying potential Crossroads MSF operations interruptions as a part of the constructability review and construction schedule for submittal, review and tracking.

7. Assist the VRE PM with the preparation of the Invitation for Bid (IFB) documentation prior to issuance of the IFB by VRE. Attend and participate in the construction contract pre-bid meeting and site visit (if held).

8. Assist VRE PM and Purchasing and Contracts Department with review of bid submittal materials of Contractors for compliance and completeness and participate in evaluation as needed or requested.

9. Assist in reviewing the bid abstract for recommendation of award to the Contractor.

10. Review utility contacts as well as any utility relocation or coordination required by the utility companies in order for the construction contract to be built. Ensure coordination is accomplished both prior to construction between VRE and the utility company as well as between the utility company and the Contractor through construction.

11. Review Spotsylvania County permit requirements and ensure compliance.

12. Oversee building permit procurement with Spotsylvania County by the Contractor.

13. Establish on-site project files protocols and maintain files using project controls software (e.g. e-Builder). Confirm agreed upon protocols with the VRE PM.
14. Assist in developing and establishing project controls procedures for submittals and reviews using E-builder project controls software. Confirm agreed upon procedures with VRE PM.

15. Attend, participate in and document the pre-construction conference.

16. Conduct Pre-Construction visual survey and document findings with Pre-Construction Photo Log. The Preconstruction Photo Log shall include ground photos and aerial (drone) photos.

C. **Construction Phase**

1. Act as VRE’s representative in monitoring construction progress, contractor(s) performance, Contractor’s Quality Assurance (QA)/Quality Control (QC), and other duties as assigned by the VRE PM to ensure Contractor compliance with construction plans, Contract Documents, deliverables and specifications and on-time project completion within budget compliance. **Some weekend and night work may be required.**

2. The CM is authorized to provide field directives to the Contractor, as required. Such directives may not alter the scope and/or nature of the work as shown on the Plans or described in the Specifications. All field directives shall be documented and provided to the VRE PM.

3. In conjunction with the VRE PM, organize, attend and document all project-related meetings, including but not limited to construction weekly and monthly progress meetings. Assist in resolving field and administrative issues.

4. Construction progress meeting agenda should include, at a minimum, the following:

   a. Review of previous progress meeting minutes, safety, errors and omissions, work performed to date, upcoming work scheduled, utility coordination (if applicable), adjacent project coordination (if applicable), QA/QC, Submittal Status Report, Requests for Information (RFI), Status Report, potential Change Order(s), Change Order(s), and the schedule for upcoming progress meetings.

5. Assist in the preparation, evaluation and recommendation on potential Change Orders for need, appropriateness, and cost.

7. Assist the Project Manager with Change Order negotiations and written responses.

8. Maintain a Change Order log.

9. Assist with the review of Contractor-prepared construction schedules, schedule analysis, activity durations, sequence, and critical path issues to determine if forecast projected completion dates are realistic and consistent with scheduling specifications.

10. Assist the VRE PM in analyzing Contractor claims for time extension(s), delay claims, critical path impacts and alternative(s) to reduce schedule and critical path impacts.

11. Assist the VRE PM in the performance of materials, equipment and systems testing and coordinate with the Contractor in inspection and testing coordination. Conduct site visits to observe construction activities, to include the following (as applicable):

   a. Contractor and Subcontractor activities, personnel, and equipment.
   b. Host Railroad or Railroad Forces, activities, personnel, and equipment.
   c. Utility Company activities, personnel, and equipment.
   d. Observe and review performance tests as required by specifications.
   e. Any other authorized construction activities on site by the Contractor or others (e.g. Host Railroad or Utility Owner). If activities are being accomplished by entities that have not contacted or coordinated with project personnel, identification and authorization will be asked for, along with the Point of Contact for the person in their organization(s) that have directed them to be on site and perform work.

12. Establish fixed vantage points and times at which photo documentation will be obtained at weekly and monthly intervals. Additionally, determine fixed aerial (drone) photo locations for routine photo documentation.

13. Maintain current project Record Set of documents, including posted drawings and specifications reflecting any modifications, As-Built records and drawings, hard copies of all RFIs (including responses), Submittals, and other project related correspondence for project completion and close-out process.
14. Monitor Contractor red-line revisions to plans, on a regular basis, throughout the course of the work to confirm accuracy and verify that all trades are properly recording field changes.

15. Receive all RFIs and Submittals from the Contractor.

16. The CM shall maintain electronic and a paper file(s) of all RFIs, responses and submittals as well as coordinate with the VRE PM to ensure the appropriate design engineering personnel reviews are performed and provide responses.

17. Review and monitor the Contractor’s Critical Path Method (CPM) baseline schedule and advise as to the best sequencing to facilitate productivity.

18. Review and approve CPM schedule updates and review and monitor weekly “look-ahead” schedules. Identify and determine delays and initiate corrective action plans.

19. Oversee Federal Transit Administration (FTA) and VRE compliance requirements. Conduct regular unannounced field verifications for all FTA contract clauses, including but not limited to the Davis-Bacon Act, Buy America, Commercially Useful Function (CUF) Evaluations, Disadvantaged Business Enterprises (DBE)/Small Business Enterprises (SBE) participation and Civil Rights requirements.

20. Review the Contractor’s payment applications for accuracy and completeness and compliance with the Davis-Bacon Act, to include review and auditing of certified payroll documentation, and prepare a monthly compliance report.

21. Make a payment recommendation on all monthly payment applications and submit recommendations using project controls software for the VRE PM to approve. Invoice review includes verification of accuracy of invoice charges, conformance with Contract terms and complete invoice support documentation.

22. Develop cash flow reports and observe trends in comparison with the construction schedule. This information shall be used at monthly progress meetings to compare work completed versus the projected cost to complete.

23. Prepare daily construction reports to the VRE PM to include weather, manpower, equipment, major issues and work completed.
24. Prepare Weekly Report, with Weekly Photo Documentation from pre-determined locations, along with specific activities, as well as aerial (drone) photo documentation.
   a. Provide weekly reports no later than 2 business days following the reporting period.
   b. Weekly report shall contain a narrative description of contract work completed, identify issues during the reporting period and outline concerns anticipated for the next reporting period.

25. Prepare Monthly Report to include – Monthly digital Photo Documentation from pre-determined locations, along with specific monthly activity updates, and aerial (drone) photo documentation.
   a. Provide monthly reports no later than 7 business days following the reporting period.
   b. Monthly report shall contain a narrative description of contract work completed, identify issues during the report period and outline concerns anticipated for the next reporting period.
   c. Report shall also include copies of submittal reports, RFI and Change Order Logs including photos.

26. Not all weekly and monthly photos shall be included in weekly and monthly reports. Include only photos that have changed and show progress for that particular period of time. However, all weekly and monthly photographs, as well as drone flights shall be available to VRE at all times and included in the Project Archive.

27. Ensure the Construction Management Plan is implemented in a timely manner.

28. In conjunction with the VRE PM, monitor the preparation and completion of "punch list" items for Substantial Completion, Final Completion and close-out.
D. **Change Order Evaluation and Claims Management**

1. Assist in administering the change order/contract administration process, to include evaluating change orders and providing recommendations to VRE as to whether the revision is within the contract scope, is necessary and the cost is equitable, fair and reasonable. Assist VRE to ensure the procedural completion and work accomplishment.

2. Review contract documents including shop drawings and shop drawing modifications to verify that materials are correctly estimated in change orders and verify that the designer of record has approved them to be in accordance with the specifications.

3. Review associated shop drawings that may be affected by change order work for coordination and verify that the designer of record has approved any modifications.

4. Prepare cost estimates, to include supporting documentation such as RS Means data (or similar), for change orders and support change order negotiations.

5. Prepare change order cost analysis including establishing a fair and reasonable cost for authorized changes.

6. Bundle all supporting data for the change order file, which includes pertinent contract drawing(s), specifications, shop drawings, site photos, contractor time and material tickets.

7. Provide auditing and claims analysis services.

E. **Contractor’s Project Closeout**

1. Perform a final walk-through inspection and prepare punch-list of incomplete or unsatisfactory items.

2. Pursue the correction, schedule and completion of any punch list items.

3. Perform and assist in final inspection to ensure punch-list completion by the Contractor.

4. Assist in the negotiation and resolution of any Change Orders or claims.

5. Provide Change Order report with final values.
6. Review payment application for substantial and final completion in accordance with VRE Specifications.

7. Provide Substantial Completion Verification prior to finalizing contract time and use of or availability for use of site/facility by VRE.

8. Monitor compilation, review and ensure Contractor’s documents to include completed As-Built drawings, warranties, Operation and Maintenance (O&M) manuals and other required submittals are delivered to VRE.

9. Coordinate final acceptance of as-built improvements, completion of as-built record set specifications and drawings, in hard copy and electronic formats.

10. Ensure all as-built plans and specifications electronic updates are stamped by the Engineer of Record.

11. Review and ensure training requirements are satisfied.


13. The CM shall review, document and ensure Contractor adheres to project acceptance as stated in the Contract Specifications.


15. Perform Final Completion and Closeout Verification.

16. Collect and archive all project documents using project controls software.

17. Prepare final expenditures tabulation for an accurate report to the VRE PM for final acceptance.

F. Safety and Security

1. The CM and all its employees performing work on this Contract must complete the on-line Contractor safety training (https://www.vre.org/safety/safety-initiatives/contractors/) provided by VRE.

2. The Contractor’s employees and all Subcontractors’ employees performing work on this Contract, who will at any time work on Host Railroad property, must participate in annual Federal Railroad Administration (FRA) mandated Roadway Worker Protection (RWP) training classes.
3. Prepare a Construction Management Plan, which shall include a Safety and Security Plan and a Quality Assurance/Quality Control Plan for Construction Management Services. Submit for review to the VRE PM. Provide updates, as needed.

4. Monitor Contractor’s Safety and Security Plan including health and safety procedures.

5. Ensure compliance with safety and security protocols for the construction site.

6. Report accidents, near misses and other safety or security violations and concerns to the VRE PM and VRE Chief Safety, Security and Compliance Officer.

7. Coordinate on-site visits by local, state and federal agencies, stakeholders and others. Document visits on the daily report, visitor log and update the action item log, as necessary.

8. Maintain and store required Personal Protective Equipment (PPE), provided by VRE, for up to ten (10) site visitors at a time, except for required foot gear which visitors must furnish.

G. Document Management

1. VRE employs a project controls software system (e-BUILDER) The Construction Manager shall be required to utilize the e-BUILDER system. Tasks anticipated to be performed in e-BUILDER include, but are not limited to: processing submittals, pay applications, potential change orders, change orders, RFIs, meeting minutes, daily construction reports, action items, construction schedules, punch lists, and incident reports.

2. The CM shall ensure all submittals from the Contractor to VRE are processed through e-BUILDER. The CM shall also submit all submittals applicable from CM to VRE through e-BUILDER.

3. The CM shall review, respond and maintain all documentation required by Contract; such as submittals, RFIs, Change Orders, Claims, and Contractor correspondence. The CM shall coordinate, input and maintain all project documentation on-site in hard-copy and in e-BUILDER so that all project files may be easily retrieved for review or audit. Status reports for submittals and RFIs shall be prepared weekly (or more frequent as needed).
4. The CM shall provide daily electronic field reports/diary with photos and post using e-Builder to include, but not be limited to the following:

   a) Equipment on site
   b) Labor on site
   c) Subcontractors on site
   d) Work activities accomplished
   e) Testing and inspections on site
   f) Pay item and material quantities delivered
   g) Visitors to the site
   h) Weather
   i) Delays and cause.

5. The CM shall develop and populate an electronic Action Item Log resulting from meetings. The log shall be updated weekly and submitted monthly to the VRE PM through e-Builder as applicable.

6. The CM shall compile and submit monthly CM invoices to VRE utilizing e-Builder.

7. The Contractor will be required to submit monthly application for payment and supporting documentation via e-Builder. The CM will then review and confirm Contractor invoice submittal prior to delivery to the VRE PM, through e-Builder.

H. **Project Administrative Support**

1. Attend Kick-Off Meetings (Pre-construction and Construction) at or near the project site and prepare meeting minutes and site visit notes for distribution through the VRE PM.

2. Plan and attend monthly coordination meetings with VRE, the Contractor, and any major stakeholders who need to be kept abreast of regular updates (depending on sequencing and phasing of schedule) – Host Railroad, Utilities, County, Adjacent Property Owners, Funding Agencies, etc. Meetings will be held in VRE’s Alexandria headquarters office, on site, or by conference call. Prepare meeting minutes and submit to the VRE PM within three (3) business days of the meeting.

3. Plan and attend weekly coordination meetings with VRE and the Contractor at the project construction site. Prepare meeting minutes and submit to the VRE PM within three (3) business days of the meeting.
4. Provide daily construction reports to the VRE PM including weather, manpower, equipment, major issues and work completed.

5. Create and populate the submittal log with number, date received, date reviewed, actions required and approval dates. Update the log weekly and submit to the VRE PM monthly showing reviewed actions required and close-out dates.

6. Create and populate an electronic Request for Information (RFI) log with number, date received, actions required, and by whom, with suspense dates and completion dates. Circulate the log and follow-up on the information. Update at the log least weekly and submit monthly to the VRE PM. The log shall also be made available upon request by the VRE PM.

7. Create and populate an electronic general documentation log for information received, scanned, distributed and archived. Update the log weekly and submit to the VRE PM monthly.

8. Review the Contractor’s requested change orders or claims requests. Document the validity based on the contract documents and field conditions. Approve the change orders or claims with recommendations and submit to the VRE PM. The CM shall create and populate the change order log using E-builder software.

I. Construction Observation and Regulatory Compliance

1. Provide on-site construction management personnel appropriate for the type of work being performed for the duration necessary to ensure compliance with Plans and Specifications.

2. Monitor, observe, review and record performance tests as required by specifications. Maintain third party testing and inspections logs for the VRE PM.

3. Monitor and track Quality Assurance and Quality Control efforts of the Contractor.

4. Document compliance with environmental and other permits (e.g. Erosion and Sediment Control (ESC), Storm Water Pollution Prevention Plan (SWPPP)).

5. Ensure coordination of subcontractors, materials and equipment deliveries including the Wheel Truing Machine and Drop Table, to meet contract requirements and maintain schedule. Wheel Truing Machine and Drop Table are anticipated to be installed by separate
Contractors. The CM shall monitor all work in the Contract Documents including the installation and testing of equipment performed by parties other than General Contractor.

J. **Special Inspections and Construction Materials Testing**

1. CM shall provide sufficient qualified personnel to monitor all major work activities and document/report all work activities. In accordance with Contract Documents, the Contractor shall provide required materials testing. Scheduling and coordinating of all inspections and testing shall match the type and pace of work activity.

2. CM shall provide Special Inspection Services to observe the Contractor’s operations to ensure conformance with all applicable Codes and standards including local jurisdiction requirements for Special Inspections. The Special Inspection personnel shall assist the Construction Manager in the performance of Special Inspections and coordinate with the construction Contractor (as applicable) in inspection and testing coordination. Document all tests, inspections, notifications to VRE.

3. CM shall provide on-site Special Inspections according to the requirements of the following:

   a. All Special Inspections (by CM) and Construction Materials Testing (by Contractor) shall be performed in accordance with the requirements set forth in the Virginia Department of Transportation Road and Bridge Standards and Specifications, all state and local requirements along with local jurisdiction’s special inspections program/requirements having jurisdiction over the work.

   b. Observations testing and inspections shall be in accordance with the requirements set forth the Virginia Department of Transportation Road and Bridge Standards and Specifications, all state and local requirements along with local jurisdiction’s special inspections program/requirements as applicable.

   c. Special Inspectors shall maintain all inspection and communication records in an organized manner and provide detailed records of all inspections. The inspector’s records will provide thorough and timely documentation of the work inspected and will promptly identify all compliant and non-compliant construction and report deviations in construction.
d. Special Inspections personnel shall meet the requirements for such work as required by the local jurisdiction and shall be approved by VRE.

e. In cases where multiple trades, disciplines, or subcontractors are on site at the same time, each activity shall be tested and inspected by personnel skilled in that portion of the work.

f. In cases where multiple shifts are employed, the quality-control staff shall be increased as required to monitor the work on each shift.

4. CM shall be responsible for the coordination and notification to VRE for Special Inspections as enumerated and required by the local jurisdiction and published in their Special Inspection Program.

Materials testing requirements for individual construction activities are specified in the Technical Specifications that require those activities. Requirements in those Sections may also cover production of standard products.

Special Inspections coordination shall be discussed at weekly progress meetings and scheduled dates for Special Inspections carried on the two-week look ahead schedule.

5. The Contractor shall provide Inspections and Construction Materials Testing services that shall include the following:

a. The testing laboratory/entity shall directly provide any and all written observations, tests, and inspections to the Project Manager, Construction Manager, Construction Contractor(s), and Engineer of Record simultaneously.

b. Reports shall include, but not be limited to:

1. Date issued
2. Project Title, Description, and Permit Number
3. Testing laboratory name, address and telephone number
4. Name of inspector
5. Location of observation, test inspection or sampling
6. Date and time of observation, test inspection or sampling
7. Weather conditions at the time of observation, test, inspection or sampling

8. Results and statement of compliance or non-compliance with plans and specifications, of observation, test, inspection or sampling

9. All reports shall include the seal of the Engineer in Responsible Charge

10. Interpretation of test results when requested

c. CM shall maintain a chronologically record (Log) of material testing, inspections and special inspections. The Log shall include but is not limited to:

1. Nature of the test or inspection

2. Date performed

3. Results, causes for rejection, corrective action taken, and dates of subsequent tests and final acceptance

6. The Contractor shall be responsible for the hiring of the testing laboratory and shall ensure that the testing laboratory or its employees are not authorized to:

   a. Release, revoke, alter, diminish or increase requirements of the plans, specifications and/or requirements of all state and local requirements along with local jurisdiction’s special inspections program/requirements as applicable.

   b. Approve, accept, disapprove or reject any portion of the Work performed.

   c. Perform any of the Construction Contractor or subcontractors duties.

7. Testing laboratory and any associated subcontractors shall meet applicable industry standards including ASTM E-329. The Contractor shall provide detail and verification regarding the ability to meet these standards. All testing equipment shall be calibrated at intervals not to exceed 12 months by devices traceable to National Bureau of Standards or accepted values of natural physical constants.
K. **Limitations of Responsibility**

1. **Design Phase:** The duties of the CM do not relieve the designer-of-record, or any entity hired to perform design work on behalf of VRE, of their obligations, duties and responsibilities.

2. **Construction Site:** The duties of the CM shall not include the daily supervision or direction of the Construction Contractor’s employees or subcontractors.