

Work Plan A.21.01 Design Services for HMC2 Optimized Design Traction Power Substation

Scope:

The Consultant shall provide the following scope of services:

Task 1: Project Management and Project Administration

The following tasks describe the scope of work required to manage and administer the project.

Subtask 1.1 - Management and Administration

The Consultant Project Manager will perform the following activities in support of the project:

- Supervise and coordinate workplan activities
- Workplan communications/meetings/record keeping
- Workplan progress reporting

The Consultant Project Manager will be responsible for making sure the Consultant's Design Team follows the Project Management Plan (PMP) and Quality Management Plan (QMP) established for this Contract for the purposes of documenting policies, procedures, and responsibilities throughout the life of the work plan.

It is anticipated that work plan administration will include the following items:

- Invoices and monthly progress reports
- Work progress reporting
- Highlight of significant issues requiring resolution
- Financial reporting/tracking

Subtask 1.2 - Document Control

Documents and electronic files, CAD drawings, transmittal forms, letters, correspondence, and other miscellaneous documents will be managed using ProjectWise, SharePoint and/or other appropriate formats.

Task 2: 100% Design

The following tasks describe the scope of work:

- Update TPSS design to align with HMC2 Optimized Design per attached Single Line Diagram Drawings: 01RQ-103-TP0015/16.
 - Includes the removal of all gap breaker stations from plans and specifications.
 - Modifications to ETTS
 - Updates to breaker configuration
- Coordinate with TY Lin design team for design and contract package integration.
 - TY Lin shall be responsible for the overall contract index of drawings

- TY Lin will be responsible for managing and integrating the Contract Specifications Book including summary of work specification.
- The Consultant shall update Drawings to remove Gap Breaker Stations and update references to drawings modified or deleted.
- A-line ETTS upgrade: Update previously developed drawings utilizing fiber installed by the A-Line cable project.
- Modify Testing and Commissioning Specification (Excludes Test Plan, Procedure, and Forms)
- Provide support for weekly and as-requested design support meetings. (up to 10 meetings)
- Up to two workshops with HMC2 East Storage Yard designers to ensure interface points align between TPSS scope and ESY. Develop scope split matrix to identify responsibilities.
- Review TY Lin contract drawings and specifications for project interfaces only.
- Provide a detailed cost estimate for the procurement & installation of the TPSS, identify critical long-lead components.

Task 3: OSFM Requirements

The following tasks describe the scope of work:

- The Consultant shall update and prepare TPSS drawings for OSFM submittal after completion of 100% plans.
 - Modify TPSS drawings to include OSFM approval stamp block and other required elements.
 - Reorder drawings by location and convert typical details to location specific drawings.
 - Organize and submit drawings via OSFM drawing management system.
- Provide code analysis / summary.
- Respond to OSFM comments (may include questions about energy storage systems) [Note that timing shall be coordinated with BART and other elements of the project]

Task 4: IFB Design

The following tasks describe the scope of work:

- Complete design drawings and specifications for AEY TPSS and A-Line ETTS.
- Respond and incorporate BART comments.
 - Design Review shall utilize the BART Comment Review Form (CRF) to record and manage comments.
 - Schedule and attend comment resolution sessions related to TPSS design.
- Up to two workshops with HMC2 East Storage Yard designers to ensure interface points align between TPSS scope and ESY.
- Provide support for weekly and as-requested design support meetings. (up to 6 meetings)
- Review TY Lin contract drawings and specifications for project interfaces only.

- Provide a detailed cost estimate for the procurement & installation of the TPSS, identify critical long-lead components.
- Develop list of construction submittals for specifications (Advisory only)

Task 5: Bid Support

After advertisement of the Contract, the Consultant's Design Team will respond bidder questions as directed by BART. Any necessary corrective action will either be in the form of written responses, an addendum prepared by the Consultant and issued by BART, or via a covering change order after the award of the construction contract. It is assumed that there will be one bid package for the Project.

Subtask 5.1 – Meetings

The Consultant will attend the pre-bid meetings and assist BART in presenting information on the design to the prospective bidders. The consultant's Design Team will attend additional meetings as requested during the bid phase of the Project. At a post-bid meeting, the consultant's Design Team will provide bid analysis of all construction bids received to assist BART in their determination of the most responsive responsible bidder for the construction contract award recommendation.

Assumptions:

- 8 additional meetings at 1-hour duration during the project bid phase (Up to 3 Consultant staff)
- Pre-bid meeting, 2 Consultant staff
- Bid Analysis is limited to the TPSS and ETTS scope designed within this workplan.

Subtask 5.2 – Addendum Preparation

The consultant's Design Team will assist BART in the preparation of addenda as requested by BART Project Manager. BART will be responsible for the distribution of all addenda to the bidders.

Assumption: The budget assumes 2 addendums at 20 sheets each.

Subtask 5.3 – Respond to Inquiries / Questions

The consultant's Design Team will draft responses to bidders' inquiries as requested by BART. All such responses will be routed through BART's Project and Procurement teams.

Assumption: It is assumed Bid Support questions from contractors will be budgeted at 30 minutes per simple question and 2 hours per complex question on average and estimated at 40 simple questions and 10 complex questions.

Subtask 5.4 – Conformed Documents

The consultant's Design Team will prepare a "conformed kit" of project plans and specifications that incorporate any addenda issued during the bid phase. These Conformed documents will be submitted per BART Facility Standards.

Assumption: It is assumed 20 drawings will be updated with total effort 20 hours.

Task 6: As-Requested Design Support

Other tasks as directed by BART related to the project that are deemed necessary to complete the design, up to 10% of this work plan's cost, with prior approval of the level of effort by the BART Project Manager.

Clarifications / Exclusions

- a) Consultant will review TY Lin contract package for interfaces only. Reviews of other technical elements are excluded from the work.
- b) Integration of TPSS and ETTS drawings. These are assumed to be in separate contract drawing volumes from the other ESY facilities.
- c) Coordination is required to determine if TY Lin civil and structures drawings related to the TPSS need to be included in the same volume as TPSS design.
- d) It is assumed that contract sheet numbers will remain similar to the existing drawings.
- e) Fire Alarm system: AEY is a separate building from other HMC facilities. Will assume this is an independent fire alarm system.
- f) Assume clean agent system is not required for TPSS structures.
- g) Assume Negative Grounding Device is included in the design.
- h) Assume 34.5kV project has completed installation of 34.5kV IDS to the previously coordinated site locations.
- i) Assume all utilities designs will interface with TPSS designs within 5ft of the TPSS buildings or equipment.
- j) Radio System is currently a stand-alone system. BART to clarify if this design should be modified given the close proximity to future train control and communications equipment.
- k) ETTS drawings are assumed to not require OSFM stamp space and will not need to be submitted to OSFM. [No changes to fire and life-safety elements at adjacent locations]
- l) Cost Estimates and Construction Schedules will be submitted up to two weeks after submittal of technical documents.
- m) TY Lin will be responsible for managing the overall Contract Specifications Book. Consultant will review, modify and/or provide input for specific specifications related to TPSS and ETTS.
- n) TY Lin will be responsible for managing the contract bid schedule. Consultant will provide input for TPSS and ETTS related items as needed including item descriptions.
- o) TY Lin will be responsible for managing the overall Conformed Specifications. Consultant will support modifications to relevant sections based on responses to bidders questions.
- p) 100% plans will start to incorporate the OSFM stamp block but it may not be fully reflected until IFB submittal.
- q) Record drawing preparation is excluded.
- r) Design review will utilize the BART Comment Review Form (CRF) to record and manage comments.
- s) Consultant will comply with BART DQMP requirements.
- t) Upon workplan NTP additional refinements to the scope may be necessary to avoid overlapping work between consultants. BART to issue any modifications in writing.

Prime: HNTB-FMG JV

Subconsultants: None

Total Work Plan Value: \$ 502,125