

## **Work Plan No A.05-02 TCCCP Traction Power Substation, East Bay, Design/Engineering Services**

### **Scope:**

#### **2.0 Scopes of Services**

##### **1. General:**

Provide comment resolution, design updates and engineering/technical support to prepare final design/procurement package for construction of East Bay Substations CMR, RPA and KTF. Provide bid support during procurement period. Provide support for in-house construction and procurement of materials.

##### **2. Scope of Work**

Scope of work includes design services to prepare bid package:

1. Incorporate lessons learned from West Bay Substation project into East Bay design and contract documents. Includes design meetings and modifications. (Assume 5 meetings and minor changes to notes and specifications.)
2. Incorporate BART comments on HVAC controls and Cisco switches into East Bay design and contract documents.
3. Optimize System Access provisions for KTF substation vault construction. Includes meetings with BART stakeholders (Track Structures, Operations, System Access, etc), alternatives analysis, design modifications and decision memo. (Assume 6 meetings and decision memo)
4. Support resolution of comment provided by new constructability, biddability, cost estimate and construction schedule review team. Incorporate comments in design/procurement package. Includes response to RFI, response to comments, comment review meetings, design modifications. (Assume approx. 24 inquiries combined for KTF ductbanks and C2-track 3<sup>rd</sup> rail swap)
5. Site visits to verify field conditions. Includes field visits, preparation, documentation, design updates. (For RPA, CMR, and KTF: 1 visit per site and 1 per trackway area; 2 engineers. Minimum 2 hours preparation and 2 hours of documentation after.)
  - RPA – Site confirmation and 34.5kV ductbanks
  - CMR – Site confirmation including confirm removal of trees, neg return ductbank
  - KTF – Site confirmation and vault area review
  - Additional as-needed support for field potholing / survey will be provided by subconsultant forces to mark pothole locations in spray paint, and provide inspection reports including measurements, utility/structure found and including photographs of results. (BART will provide all equipment and crews for potholing. Survey of potholes is limited to twenty-eight, 8-hour shifts)
6. Incorporate transposition of third rail adjacent to KTF vault into design and support procurement of materials and construction by BART forces.
7. Support in-house construction of select wayside duct banks for KTF substation. Includes design support, coordination, interface management for BART construction.
8. Incorporate into East Bay design and contract documents changes to 34.5kV cable replacement plans. Coordinate with 34.5kV cable replacement projects.

9. Support PG&E Application for each new facility. Includes application, coordination meetings, site walks. (Assumes 6 meetings and 1 site walk per location, 3 sites total from the public right-of-way. No BART track allocation required.)
10. Obtain State Fire Marshal approvals for all substations. Includes allowance for permit fees, coordination meetings, preparation of plan sets. (\$8000 allowance for permits, 1 plan set for each substation assuming repackaging only. No exhibits or new drawings anticipated).
11. Arborist Report Update. Includes revised KTF report, coordination meetings, design modifications as needed. (Assume 2 meetings)
12. Traction Power Drawings Cross Sections Updates. Includes review/discussion and modifications on newly developed designs. (Assume no additional cross-sections will be required).
13. Support Caltrans Encroachment Exception Policy and Encroachment Permit Review and approval. Includes coordination, completion of outstanding items, final document submittal.
14. Procurement/Bid Support. Includes creating addenda as needed, creating conformed contract documents, responses to BART and potential bidders questions/requests. Update cost estimate and construction schedule prior to bid opening.
15. Support BART in obtaining concurrence from City of Richmond on RPA substation drainage design. (Assume 2 meetings and no changes to the current design)
16. Respond to BART inquiries related to Hayward Maintenance Complex Phase II (HMC2), East Storage Yard project optimization plan. (Up to 120 hours)
17. Other duties and design service as identified by BART PM/ Project Engineer/Traction Power Engineering. (Up to 40 hours within bid support)

**Prime: HNTB+FMG JV**

<b>Subconsultant</b>	<b>Amount</b>	<b>DBE (Y/N)</b>	<b>SBE (Y/N)</b>
3Vi	\$33,707	Y	Y
Chaudhary & Associates	\$30,288	Y	Y
CHS Consulting Group	\$17,914	N	N
ENGEO Incorporated	\$64,899	N	N
Merrill Morris Partners	\$17,703	Y	Y
MGE Engineering Inc.	\$63,828	Y	Y

**Total Work Plan Value: \$ 935,396**