

Work Plan No. B.56-01 Geotechnical Engineering and Surveying Support During Construction - Transitional Work Plan

Scope:

These services are as described as follows:

Task 1 - Project Management:

- Project management support throughout the schedule outline in this work plan proposal.
- Coordinate Consultant staff with BART's project staff & maintenance team.
- Attend bi-weekly meetings set up by BART staff
- Attend kick-off meeting with BART staff
- Document control of deliverables that come in and are submitted between HDR and BART party stakeholders.
- Lead internal consultant team meetings and document meeting minutes
- Manage scope of work requirements are met
 - Scope changes or additional requests to be discussed with BART and path forward on amending this work plan will be given within 7 days of additional scope request.

Task 2 – Geotechnical Engineering and Survey On-Call Support:

Scope of work includes as-needed geotechnical engineering and surveying services for the replacement of 34.5kV cables and installation of fiber optics in the C-line between substations CRO (Rockridge) and CCO (Concord). Scope includes geotechnical engineering support and field surveying support for construction of retaining walls, foundations, underground ductbanks, vaults, and other facilities, and support for the CM team/BART PM in managing and administering construction by BART forces:

- Geotechnical Engineer and Survey team to provide on-call support services to BART construction team on an as-needed basis during the timeframe of this work plan scope.
- Attend site visits to observe critical construction activities, testing, conduct field investigations and as requested by the CM team/BART PM.
- Perform field survey to support construction activities and design changes, including monitoring of excavation stability.

Task 3 – Geotechnical Engineering and Survey - Additional Design Support During Construction:

Additional design services during construction (DSDC) to be provided by the geotechnical and survey consultant (these additional services will be provided with coordination of BART PM and construction team, the amount of effort needed for these additional tasks will be discussed and approved by BART

prior to commencing work due to the limited budget and hours approved as part of this work plan proposal):

- Respond to requests for information (RFI's) as directed by the CM team/BART PM.
- Review submittals typically within 5 working days of receiving the submittals, or as directed by the CM team/BART PM.
- Support the CM team/BART PM in preparing change notices by providing new and/or revised signed documents (specifications, drawings, sketches, etc.) and cost estimates. Provide a time estimate indicating when the supporting documents and estimates will be completed within 3 working days of being notified of the change.
- Support the CM team/BART PM in preparing punch lists during Final Inspection as needed.

Assumptions:

- BART PM to provide direction on priority of support tasks, as HDR/consulting team will provide on-call and additional support to the extent of the allocated budget pertaining to this work plan proposal. The additional DSDC support services will be discussed and coordinated with BART prior to commencing each requested task in order to achieve the required deliverable within the budget allocated with this work plan proposal.
- BART to provide formally the IFC set of contract plans for this project consulting team to use as a reference basis for future support requested by BART.
- BART to set up and facilitate meeting with BART project staff to discuss project details, design development approach along with critical design constraints, schedule and potential task requests.
 - Within 2 weeks of giving NTP to HDR/Consultant team
 - Meeting minutes to be taken by BART and submitted to team after
- BART to provide necessary documentation for consultant staff to attend site visits
 - Anticipated meetings on site are once per week during the timeframe of this work plan
 - Additional site requests are estimated to be once per week during the timeframe of this work plan
- Construction scheduled completed by BART to be provided to HDR for review simultaneously with contract plans for consultant DSDC support team.
- Project risk management by consultant is not part of this scope of work or deliverables.
 - HDR will attend meetings as request by BART and provide support on risk items identified by BART's Risk Management Program for the project.
- HDR/Consultant team will not be held liable for any construction, schedule or cost impacts that arise from the *Issued for Construction* Design Plans and Contract Manuals that were completed and signed/ prior to HDR being given the Notice to Proceed by BART for this DSDC support.
 - When HDR is requested to produce a field design change or change order per the request of BART, HDR will be responsible only for the details modified that pertain to the specific change order request.
 - A process will be developed to show what is being modified by HDR from the IFC plan set or contract manual per that specific change order request. This will be done by a clouding process of the details that have been modified on the pertaining sheets themselves and the respective volume cover page and table of contents.
 - Only what has been clouded will be what is reviewed by BART as modifications needed to address the specific change order request.
 - This will allow for control of changes to be done per change order, if comments are made outside of the clouds to details that do not pertain to the change order scope of work then that would be discussed separately on how to resolve at that

- time.
 - A document control system will be developed by BART's team to track and upkeep the overall composite set that contains the latest sheet modification per an RFI or change order.
- Construction progress meeting to be held by BART staff and maintenance team.
 - Construction progress meetings to be held bi-weekly or depending on BART staff.
 - Meeting minutes are to be completed by BART team
 - BART to provide advance notice (as best possible to HDR/consultant support team for on-site requests in order for the consultant team be able to confirm requests and be on site as requested.
- BART to provide necessary documentation and process to get HDR staff badges for site visits
- BART CM team to develop a Document Control Management Plan system and maintain it to provide complete organizational record keeping of the projects contractual documents and revisions that are needed throughout the DSDC support services done by HDR.
- The Quality Assurance and Quality Control (QAQC) plan set forth in the overall 34.5kV C-Line Replacement project Quality Management Plan (QMP) will be shared and followed by HDR design team during DSDC support.
- Submittal reviews and dispositions: **total of 10 submittals expected for review and disposition.**
 - Submittals will be reviewed and returned with disposition in 5 working days from being sent formally to HDR/Consultant team, typically.
 - submittals sent to HDR/Consultant for review will go through a max of two reviews.
 - submittal's that were found to be "not approved and resubmit"; the revised submittal returned for designer review/approval will have changes clearly depicted. Additional hours will be added if submittal revisions are substantial and require a full re-review.
 - Survey # of submittals_- Up to 5 submittals
 - Geotechnical # of Submittals – up to 5 submittals
- RFI review and responses: **total of 15 of RFIs expected for responses**
 - RFI's to be reviewed and returned in 3 working days, typically but dependent on the level of effort required per RFI, after the day it was formally sent to HDR/Consultant team.
 - Survey # of RFIs- Up to 5 RFIs
 - Geotechnical # of RFI's- up to 10 RFIs
- Change orders anticipated: **Estimated amount of change orders to be at two (2). Each change order scope will be identified and agreed to by BART along with the anticipate schedule and engineering cost to complete.**
 - Change Order Review Process and Approval:
 - Potential Design Change Order to be requested by BART and CM team
 - Each change order will be its own specific revised design package submittal for review and comment.
 - The modifications needed to address the change order request on the IFC plans or contract manual will be clearly depicted with clouds and revision triangles. The review and comments made by BART or CM team should only pertain to the modifications made by HDR and are within the clouds depicting the limits of change done.
 - All other design details or information shown on the sheets that are being revised due to that specific change order are not to be reviewed or commented on, as it does not pertain to the scope of the requested change order in hand for review and approval.
 - Design period will be based on the extent of the change order request. A design submittal schedule and cost estimate for each change order will be developed and submitted to BART for approval prior to commencing.

- Each change order will go through one revision at most.
 - First submittal will be sent to BART for review and approval
 - 10-day BART review (including reviews from Engineering, O&M team) time-period. BART to provide comments or approval to proceed with IFC issuance of the change order package.
 - If comments are received, HDR to review and respond to comments. HDR to be submit responses back to BART for review. BART will then schedule a Comment Resolution Meeting (CRM) to discuss and close out comments before proceeding with revising the package.
 - HDR will move forward with revising the design plans, specs and calcs pertaining to that specific change order and will resubmit to BART for formal approval.
 - BART will provide final approval of that specific change order and BART team will upload that change order set of revised plans and place within the document control system as part of the latest conformed set of project documents.

Prime: HDR

Subconsultant	Amount	DBE (Y/N)	SBE (Y/N)
Parikh	\$ 32,928	Y	N
Cinquini & Passarino	\$ 83,289	N	N

Total Work Plan Value: \$ 142,539