

## **Work Plan A.04-01 BART Constructability, Biddability and Estimate Review for Powell St Substation**

### **Scope:**

#### **Task 1 - Project Management:**

- Project management support throughout the schedule outline in this work plan proposal.
- Coordinate HDR's project staff with BART's project staff.
- Attend weekly construction progress meetings set up by BART staff.
- Take meeting minutes.
- Attend HDR kick-off meeting with BART staff and CM team.
- Design Quality management process for project deliverables
- Develop project schedule and update accordingly
- Internal design team document control process to be coordinated with BART's team process

#### **Task 2 – Powell Station Substation – C&B Review:**

The Scope of services will include provision of design/construction engineering expertise to perform the following services at the request of BART.

- Constructability/Biddability review of contract design at the 95%/100%/IFB design stage, including but not limited to the following tasks:
  - Become familiar with all drawings, specifications, estimates, schedules, and other contract documents to evaluate whether all details of the scope can be built per plans, specifications and schedule; that the contract documents will facilitate the receipt of reliable, responsive bids; and minimize post-bid contract changes.
  - Attend meetings with the design team to discuss and understand the project details, including scope, work locations, and known constraints. At this stage, provide review of available developed design at a depth commensurate with the level of detail provided.
  - Field visits and inspections to understand existing conditions and potential construction/design issues.

- Assess the possibility of differing site conditions and whether any additional field investigation/survey/potholing/GPR is recommended to better identify potential construction conflicts. Suggest alternatives for possible routes, equipment locations, footing modifications, and excavations to avoid or limit the possibility of conflicts in areas where excessive hidden obstacles or other differing site conditions can be anticipated.
- Review site access restrictions, space requirements for equipment and construction activities, and alternate routing of utilities to conserve space or limit material quantities.
- Review provisions of allowable access times associated with access to the ROW or access to adjacent roadways, including traffic control. Review construction phasing to ensure plans and specifications provide a feasible option for construction.
- Confirm that occupants in or near the facility being constructed have been consulted about potential construction impacts. Contract documents should include mitigations for any impacts of the work including access restrictions.
- Ensure the scope of work is clear and consistent across all contract documents to eliminate any ambiguities and maximize the biddability of the contract.
- Evaluate the construction schedule assumptions for reasonableness, recommending modifications as appropriate based on potential deficiencies identified.
- Identify hours of work (day shift, night shift), staging areas, and required District support.
- Review unresolved comments provided by previous reviewers and provide recommendations for comment resolution.
- Contribute to the existing risk register by including any documented concerns that may impact project performance by working with the project manager. Therefore, the risk can be managed from bid to closeout phase of the contract.
- Other technical support or other services as required.

- Cost estimate peer reviews of contract design at the current 95% / 100% / IFB design stage, including but not limited to the following tasks:
  - Assess schedule and estimate for assumptions.
  - Review estimate mark-ups and suggest adjustments for current bid market if needed.
  - Check estimate for pricing.
  - Identify any scope missing from the estimates.
  - Check Bid Schedules for the typical BART Items and Allowances.

## **Assumptions:**

### *General*

- HDR will not be held liable for any construction, schedule or cost impacts that arise from the *Issued for Bid* Design Plans and Contract Manuals that were completed and signed by their respective design consultant.
- HDR is not accepting or approving design submittals in lieu of BART
- Constructability and Biddability Review to be performed by HDR team to provide feedback and comments that may help avoid future conflicts and construction schedule impacts.
  - HDR to confirm with C&B review that contract documents completed by original design consultants meet BART Facility Standards and additional design standards, guidelines and requirements that were agreed to be followed by BART and original design consultant for each project.
  - Project Schedule will be developed that would include the following:
    - 95% Design Submittal C&B Review period performed by HDR
      - Assume design package is less than 100 sheets
      - 2 week review period by HDR

- Submit comments and C&B checklist to BART for review
  - Comment Resolution Meeting between HDR review team and Original Design Consultant, this meeting is to be set up by BART.
  - Backcheck round of review performed by HDR to confirm comments were addressed adequately by comparing the comment response and update drawing sets provided by each of the original design consultant
    - Provide final C&B Checklist and summary to BART
    - BART approval that comments were addressed and provide direction to original design consultant to progress to next submittal milestone.
- Similar CB&E review schedule will be followed for the 100% and IFB design submittal milestones as detailed for the 95% CB&E review schedule above.
- BART to provide additional valuable information to HDR to perform a thorough Constructability and Biddability Review of each of the Station elevator projects mentioned above.
  - For example, BART to provide variances and RFI's applicable to this project, BART to provide basis of design report indicating summary of codes and their respective version followed for this project.
- HDR to receive the following contract documents, at the minimum, but not limited, in order to perform the Constructability and Biddability Review:
  - Contract design plans, specifications and cost estimate for each submittal milestone (95%, 100%, IFB)
  - Project design and construction schedule
  - Latest BART design review comments made on the respective design submittal milestone
  - Design variances and/or rfi's submitted for each project
  - Summary of issues and previous design conflicts/directions forward that were done during design progression between original design consultant and BART.
  - Basis of Design reports
  - Scope of Work/Project Requirements Summary requested by BART
  - Risk Matrix pertaining to respective project
- HDR to provide feedback and comments based on the review, HDR will set up a meeting to go over potential construction and schedule impacts with BART staff and CM team.
- BART to provide responses and direction forward to HDR for each comment or potential conflict found from the constructability review.
- Major construction impacts found from the constructability review will be documented as part of BARTs risk management for tracking and closure.
- HDR will support that comments are closed appropriately by original design consultant that were made on their project contract documents.
  - BART to formally approve that comments have been closed appropriately and/or have a path forward that BART accepts.
- BART to provide necessary documentation and process to get HDR staff badges for site visits
  - One (1) site visit assumed, eight (8) HDR review team members to attend
- BART to provide:
  - BART Constructability and Biddability Review Checklist for this project
  - BART Comment Review Form at each deliverable milestone submitted for review (95%, 100%, IFB)
  - BART Design Review Checklist associated with Constructability, Biddability, Construction Schedule and Cost Estimate
- Design Variances needed (if any) have already been identified by the original Design Consultants during their design progression and in progress to be approved or already approved.

- Risk Management & Mitigation process has been developed and updated by BART
- Project Construction Schedule and updates from BART to be shared with HDR.
- HDR team to attend bi-weekly meetings with BART team to provide project progress and go over any issues/concerns that are found during project progression.
- Up to 6 comment resolution meetings expected to have HDR team attend.
  - Two (2) for each deliverable milestone submitted for review (95%/100%/IFB)
  - Option for some team members to attend virtually
- HDR to have access to discuss/communicate with original design consultant about their respective project design to be able to expedite certain responses and feedback needed by HDR during C&B review.
- Assumed no fire life safety, architecture, civil utility scope of work under this BART work plan.

**Prime: HDR**

**Subconsultants: None**

**Total Work Plan Value: \$ 175,438**