

BART Agreement Number: 6M8142

Approval Date: 12/29/22

Work Plan No. B.33-01 15TC010 M-Line Tunnel Design Services

Scope:

This work plan includes the following anticipated effort for tunnel water intrusion mitigation for the M-Line, approximately MP 7.484 – MP 10.493:

- IFB drawings, specifications, and cost estimate for steel tunnels prepared by HNTB and GZ and administered by AECOM (Task 1)

Ancillary Task: Administration and Project Management

The Project Management Team will perform the following activities in support of the project:

- Coordinate work plan activities
- Work plan communications/meetings/record keeping
- Work plan progress reporting
- Subconsultant management

- Monthly progress reports and agreement administration

Team Coordination and Technical Meetings

The Design Team (GZ) will conduct bi-weekly coordination meetings in person or via conference call over the approximate 36 week design duration consisting of:

- Bi-weekly internal team coordination meetings – 18 estimated
- Design Review meeting – 1 estimated

Task 1: IFB - Design Phase – M-Line Steel Tunnel

This effort will be for GZ to provide IFB drawings, specifications, and construction cost estimates.

Structural Plans and Details

The following items are included in this task:

- Prepare IFB design level structural documents. The Pre-IFB submittal will include plans, elevations, details, and technical specifications for the structural portion of work. The specifications will be based on BART's Facilities Standards, with special provisions added as required.
- Provide IFB bid item list to be used to develop specifications and support cost estimation.
- Perform quantity take off calculations to support the preparation of the cost estimate.
- Perform IFB level QA/QC reviews of the structural work.
- Coordinate plans with the team (GZ & HNTB) as necessary.
- Participate in 1 comment resolution meeting and respond to BART's IFB submittal comments.
- Assemble the specifications.

Assumptions:

- Drawings will be generated in AutoCAD.
 - BART to provide CAD drawings including all pertinent ROW, easements and temporary construction easements necessary to identify the limits of the work.
 - BART to provide CAD alignment files for the limits of the work.
 - Progress plan sets will be produced for QA/QC review.
 - Field verifications will be only for the elements included in the scope.
 - The Design Team (GZ & HNTB) will not impact the existing drainage system or any items related to the drainage system.
 - Remediation work will be focused on tunnel leakage, and will only address stations, cross passages, and ventilation structures as necessary to halt water intrusion into the tunnel.
 - BART is carrying out non-destructive testing and evaluation of corrosion of steel lining. The Design Team (GZ) will assist in finding representative locations for tests and type of testing (e.g., Ultrasonic testing, radiography to determine the extent of corrosion, corrosion mapping if required). Test results to be available 4-5 weeks after NTP.
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- BART is responsible for coordination with other agencies including MUNI and the City and County of San Francisco. BART is responsible for coordination with environmental agencies, if needed for project approval, including SFBCDC and other Bay Area Clean Water Agencies.

Exclusions:

- No work is related to San Francisco Municipal Transportation Agency (SFMTA/MUNI) train system.
- The Design Team (GZ) is not performing any inspection of the existing drainage system or any items related to the drainage system of BART.
- No assessment of ground condition in terms of geology around the tunnels and impact of structure.
- No assessment of hydrological condition around the tunnels in terms of water chemistry and impact on structure.
- Assessment and evaluation of corrosion on steel lining (e.g., based on core samples from flanges or core main steel plate with coating on exterior side).
- No structural or seismic evaluation will be performed on the existing tunnels and other cut-and-cover underground structures.
- No water intrusion remediation will be performed on the tunnel cross passages.
- PS&E for Civil, Mechanical, Electrical, Plumbing, Trackwork, Communications, Utilities, Train Control are excluded from this work plan.
- Preparation of Permits and Agreements is excluded from this work plan.
- Design Services During Construction.

Specifications

- Specifications will be prepared.

Cost Estimate - Quantities and Estimate

- A IFB construction cost estimate will be compiled.

QA/QC Review and Documentations

Design team members shall submit the appropriate QA/QC documentation for the IFB design submittal and comply with the procedures outlined in the Quality Management Plan. QA/QC documentation will be submitted to BART upon request.

Revisions after Plan Review

Up to one round of revisions will be allowed for incorporation into the IFB design documents.

Prime: AECOM

Subconsultant	Amount	DBE (Y/N)	SBE (Y/N)
Gall Zeidler	\$ 167,361	N	N

Total Work Plan Value: \$ 195,710