

Interceptor Sewer Trunk Main Manhole Construction Project 14-33

November 13, 2013
BKF No. 20130193-10

City of Mountain View
Interceptor Sewer Trunk Main
Manhole Construction

PHASE 1A – SCOPE OF SERVICES

PRELIMINARY INVESTIGATION

Task 1a. Attend Coordination Meeting

BKF will attend one coordination meeting with City staff to discuss available information, design concepts and constraints.

Task 1b. Drilling/Pothole Program

BKF will gather the available improvement plans and topographic information. A work plan and jobsite Health & Safety plan will be prepared for the drilling/potholing program. Prior to proceeding, BKF will submit these documents to the City of Mountain View for review comments and approval. If necessary, BKF will also obtain approval of the workplan from the CalRecycle and the Regional Water Quality Control Board. The drilling/pothole program will be utilized to locate the existing sewer line and determine whether the project will require work within either refuse cells or the clay cap.

Typically sewer lines are constructed on a direct path between manholes. Subtronic will run a sonde through the pipeline and use surface readings to identify the location of the pipe. They will then probe six locations along the pipe to verify horizontal accuracy of the sonde readings and determine the pipe depth.

A total of four geotechnical borings will be conducted at the proposed manhole locations to identify constraints related to existing refuse cells and to collect data for design recommendations for temporary shoring and manhole structural calculations. One boring will be performed at each of the four proposed manhole locations. Where refuse is identified, the depth of borings will be restricted to avoid impacts to the clay liner. Based on observations, an additional boring may be required at locations where refuse is observed. The additional borings will be included within Phase 1B when authorized.

An Initial Geotechnical Technical Memorandum (IGTM) will be provided documenting soil and refuse (if applicable) information collected as a part of the Phase 1A Drilling/Pothole program. The IGTM will not provide recommendations for soil loading and requirements for potential work within refuse cells at this phase. This information will be added during Phase 1B after discussion with the City on how best to proceed.

Deliverables: Subtronics Sonde Report and Initial Geotechnical Technical Memorandum (pdf File)

Task 1c. Survey Program

A total of one day of supplemental survey is planned. BKF will provide survey services to locate the drilling/pothole locations and confirm rim and invert elevations of the existing sewer line at the proposed manhole locations. Marks will be placed to assist in locating supplemental Phase 1B borings that may be needed.

Deliverables: Survey information will be incorporated into the construction documents.

Scope of Work

Phase 2

City of Mountain Sanitary Sewer Manholes

PROJECT ISSUES

The Mountain View Interceptor Sewer Trunk Main is a 42-inch diameter RCP gravity sewer pipe that was constructed in 1969 to transport sewage from the Shoreline Sewage Pump Station to the Palo Alto Regional Water Quality Control Plant. The trunk line includes a 2,100 foot section of sewer line with no intermediate access points. The proposed project is to construct three intermediate manholes along this sewer line and a manhole on the line immediately downstream to allow for maintenance, inspection and rehabilitation.

PHASE 1 PRELIMINARY INVESTIGATION

Site investigation including potholing, locating refuse and geotechnical drilling and report are completed. Following the Phase 1 analyses, the project team has agreed that the manholes will be installed using standard shoring in conjunction with dewatering of groundwater.

PHASE 2 DESIGN DEVELOPMENT AND CONSTRUCTION DOCUMENTS

Phase 2a Basis of Design

A Draft Basis of Design Report will be prepared based on the agreed upon standard shoring plan and groundwater dewatering that includes the recommended manhole locations, structural calculations supporting the dimensions of the manhole foundation, recommendations on pre-cast riser sections, a construction phasing plan, preliminary opinion of cost, schedule and documentation of likely disruptions to the golf course. The Basis of Design Report will include 30% Conceptual Design Plans, including structural plans and calculations (No specifications).

A preliminary review will be made of structures near the manhole location south of the Creek. Structures include Michael's Restaurant and the Pro Shop. If the preliminary review shows that detailed extensive structural review is

needed, the detailed review is outside of this scope of services but can be conducted as additional services.

The Basis of Design will address considerations for night time work to reduce golf course and restaurant impacts. The Basis of Design will also address considerations for equipment access for potential future repairs to the 42-inch diameter force main.

Deliverables:

Draft Basis of Design Report with 30% Design Plans (One hard Copy and pdf File)

Task 2b. Final Basis of Design Report

One meeting will be held at the project site to discuss the Draft Basis of Design Report. City comments will be incorporated into a Final Basis of Design Report that will be used as the basis for Construction Document Plans and Specifications.

Deliverables:

Final Basis of Design Report with 30% Design Plans (One hard copy and one PDF file)

Task 2c. 65% Specifications and 95% Construction Documents

A 65% Specifications set will be provided to the City. BKF will incorporate comments on the 65% specifications review into the 95% construction documents.

Construction documents will be prepared for the installation of the manholes. The 95% review plans will include plan views, profiles, control layouts and details. The plans will utilize existing City of Mountain View details and specifications, with site specific modifications as appropriate. The 95% Plans will include a Golf Course Operations Plan. We are expecting up to four sheets of Improvement Plans. Technical Specifications will be in CSI Format. Specifications will include restrictions associated with excavation in the vicinity refuse cells, wildlife habitats and golf course operations. The 95% submittal will be complete construction documents ready for bidding, but unsigned.

Construction quantities and an opinion of probable construction cost will be provided. A design review meeting is included for 95% submittal review.

Deliverables:

65% Specifications (One hard Copy and pdf File), 95% Plans, Specifications and Cost Estimates (One hard Copy and pdf File),

Task 2d. Incorporate City Comments and Provide 100% Submittal

City comments will be incorporated into a 100% Submittal that includes Plans and Specifications. The 100% submittal will be a complete signed construction document that is ready for bidding and will include the engineer's opinion of the construction cost.

Deliverables:

One Hard Copy and pdf File of Full Size wet-stamped 100% Plans and Specifications. Working documents used to develop the final set will be provided in the applicable format (AutoCAD, MS WORD, MS EXCEL, etc.)

Task 2e. Project Management

BKF will attend two coordination meetings with the City. All plans, specification and estimates will be reviewed by a senior engineer specialized in quality assurance and quality control prior to submitting to the City.

Interceptor Sewer Trunk Main Manhole Construction, Project 14-33
Design Cost Estimate by BKF Engineers

Phase 1 - Preliminary Investigation		
Task 1a	Attend Coordination Meeting	\$ 4,148
Task 1b	Drilling/Potholing Program	\$ 41,458
Task 1c	Survey Program	\$ 6,000
Task 1d	Project Management	\$ 4,324
	Reimbursables	\$ 2,870
	Subtotal	\$ 58,800
Phase 2 - Design Development and Construction Documents		
Task 2a	Draft Basis of Design Report and 30% Documents	\$ 9,708
Task 2b	Final Basis of Design Report and 30% Documents	\$ 5,102
Task 2c	65% Specifications and 95% Construction Documents	\$ 19,908
Task 2d	100% Construction Documents	\$ 6,554
Task 2e	Project Management	\$ 4,998
	Reimbursables	\$ 530
	Subtotal	\$ 46,800
	TOTAL	\$ 105,600