



Sunnydale Auxiliary Sewer Project

LOCATION: San Francisco, CA

OWNER: San Francisco Public Utilities Commission (SFPUC)

OWNER CONTACT: Boon Lim, (415) 554-0745
525 Golden Gate Avenue, 12th Floor
San Francisco, CA 94102

ARCHITECT OR ENGINEER: Jacobs Associates
Attn: Rene Fippin, (415) 249-8219
fippin@jacobssf.com

CONSTRUCTION MANAGER: Glen Cross, (408) 242-2167
glen.cross@jacobs.com

PROJECT PROFILE

Installation of 5,400 feet of new tunnel pipeline was constructed using numerous methods to address various project specifics: (a) 75 LF of 104" pipe constructed by jet grouting and hand mining; (b) 180 LF of 104" pipe constructed by interlocked steel sheeting (for excavation shoring) and cut-and-cover method; (c) 3,070 linear feet of 144" I.D. precast segmented pipeline constructed by 168" O.D. EPB TBM (Earth Pressure Balance Tunnel Boring Machine); and (d) 2050 LF of 85" HOBAS pipe at 1.73% slope constructed by microtunneling method using our Akkerman Slurry MTBM.

Tunneling required the installation of five launching/receiving shafts and five manhole structures to tie into the existing sewer system. Two of the shafts were constructed with interlocked Steel Sheet piling in bay mud soils. They also required the using of jet grouting for supporting the launching and receiving of the tunnel machines.

Pilot Tube probing was used prior to performing the microtunnel installation to identify potential obstructions in the tunnel zone. It was suspected that there was a buried basement/sheeting wall in the path of the MTBM and pilot tube probing was used to identify its location.

In the hand mine/jet grouted section of the tunnel, we constructed a horseshoe style tunnel with ribs and lagging in the jet grouted section. We then installed the pipe and grouted the annulus, in essence doing a "two-pass" tunnel.

The Sunnydale Auxiliary Sewer Project included many design and construction challenges including an assortment of ground conditions, and various overlying urban infrastructure. Along the tunnel alignment, the subsurface conditions varied widely from soil deposits of bay mud, sand and clay, to Franciscan Complex bedrock.



PROJECT PROFILE

The EPB tunneling encountered a plume of contaminated soil and groundwater that was classified and treated as hazardous waste. Portions of the site were located outboard of the historic (1848) shoreline, and archeological findings were encountered – including two schooner ships from the 1840s. Under crossings included a major four-track commuter rail station (Caltrain), Union Pacific Railroad (UPRR) spur tracks, deeply buried gas and high-voltage electric utilities, and a culvert carrying ten-lane State Highway 101. Three of the launching/receiving shafts were constructed in a densely populated area of San Francisco where community outreach was necessary. Project specifications commanded a high level of environmental and geotechnical mitigation, including approval and implementation of a Storm Water Pollution Prevention Plan, biological and ecological monitoring, Dust and Air Monitoring, and Noise and Vibration Monitoring. Through heavy planning, constant communication, and team work, all of these challenges were met and overcome.

Additional work was added to our contract, but our base bid was completed on time and on budget. This project has received numerous awards including the ASCE Region 9 “Outstanding Collection System Project Award” for 2012.

TOTAL VALUE OF CONTRACT:
\$ 44,893,322

COMPLETION TIMELINE:
SEPTEMBER 21, 2010 - SEPTEMBER 25, 2012

COMPLETED AS:
PRIME CONTRACTOR

