

THE MAGAZINE FOR THE PEOPLE  
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# CONSTRUCTION

TODAY

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Shimmick Construction  
joins Skanska USA to  
expand a subway system.

**HAWAII AND BEYOND:**  
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# Rising to Challenges

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# Rising to Challenges

THE FREMONT CENTRAL PARK SUBWAY PROJECT IS A GOOD FIT FOR SHIMMICK. BY JIM HARRIS

The Fremont Central Park Subway project in California's Bay Area is exactly the sort of job Shimmick Construction Inc. thrives on performing. The \$136.7 million project involves underground excavation, temporary relocation of parkland and retention ponds, extensive coordination of schedules and sub-contractors and other complex elements that call for the kind of experience the Oakland, Calif.-based civil construction and engineering firm brings to its jobs.

"One of Shimmick's specialties is taking on jobs that are not cookie-cutter jobs and require additional ingenuity to build them," Project Manager Todd Majors says. "We believe we are the right contractor for this job for those reasons."

Shimmick Construction and Skanska USA are teamed in a joint venture as general contractors on the project, which includes building nearly 1 mile of subway and associated transition structures in anticipation of 1.5 miles of new railway. Work started in August 2009 and will conclude in March 2013, he adds.

The Fremont Central Park Subway project is the first phase of client Bay Area Rapid Transit's (BART) projected \$890 million Warm Springs Extension project. The extension will add 5.4 miles of new tracks from an existing station in Fremont south to a new station in the city's Warm Springs district, Shimmick Construction says.

Contracts for future phases of the Warm Springs Extension have not yet been awarded.

## Current Progress

The Shimmick Skanska Joint Venture is currently constructing a cut-and-cover tunnel, 4,600-foot-long underground double barrel box structure for the subway. One section of the excavation support system is supported by cement deep soil mixing (CDSM) cut off walls, while sheet pile walls support another section.

The bottom of the walls are filled in with a grout plug designed to keep the excavation free of water. The excavation support system is designed to separate subway construction operations from the existing aquifer.

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### *Shimmick Construction - Fremont Central Park Subway*

*www.shimmick.com*

- *Project cost: \$136.7 million*
- *Location: Fremont, Calif.*
- *Employees on site at peak: 110*
- *Scope of work: Subway extension*

*"One of Shimmick's specialties is taking on jobs that are not cookie-cutter projects." -Todd Majors,*

*project manager*



Shimmick Construction is working with Skanska on a subway project in California.

» Part of the project involved excavating through a stormwater retention site.



To form the walls, crews are using a travelling concrete forming system developed by vendor EFCO. The form system is hydraulic and self-driven, which allows sections of the walls and deck to be formed monolithically and faster than conventional forming methods, Majors and project engineer Mike Wathen say.

In addition to the subway box structure, crews are also installing 2,000 feet of transition structures on each end of the box that will bring the track from underground to at-grade level, Majors says. They include ventilation structures, retaining walls and sump pump structures.

### Qualified Teammates

Major subcontractors on the project include Schnabel Foundation Co., which installed the CDSM walls, and Layne GeoConstruction Services, which performed the grout plug work. Harris Salinas Rebar, Rosendin Electrical, Best Contracting Services and Sierra Mountain construction

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also are key subcontractors on the project.

Soil and concrete testing are performed on site in facilities provided by subcontractor Twining, Inc.

In order to assist the project and minimize delays, Twining, Inc. is providing Shimmick with one of Twining's unique on-site laboratories which performs immediate soil classification testing to confirm requirements for the various types of fill and tests early age concrete samples. This provides the construction team with real-time test results which the JV can leverage for greater project flexibility.

### Environmental Challenges

The project's location in Fremont Central Park presents a number of challenges, as crews have needed to excavate through the east lobe of Lake Elizabeth – a stormwater retention area. The project site also passes through Mission Creek.

Crews set temporary cofferdams to de-water the eastern lobe of the lake and diverted the creek to facilitate construction of the subway box. Crews also installed a temporary pedestrian access across the cofferdam to allow Fremont residents to continue to use the walking path around the park, Majors says.

The joint venture also constructed a new dog park and basketball courts for the City of Fremont. Crews installed temporary pedestrian access across the subway trench to allow people to walk directly between the softball fields and parking lots.

The park presents a number of scheduling challenges, as it is located in an environmentally sensitive area that can't be disturbed during the winter months. "We've learned that coordination and maintaining good relationships with the owner, public, subcontractors and

involved third parties are critical to having a successful project," Majors says.

### Focus on Safety

The Fremont Central Park Subway project – like many of Shimmick's projects – presents potential dangers by its very nature. The company has an extensive safety program to address these, Majors says.

"As a company we approach safety from the top down and the bottom up," he adds. "Our goal is to be world-class in safety."

Tailgate meetings and supervisor safety and training meetings are held weekly. Meetings address pre-task planning and include a job hazard analysis.

Round robin safety workshops are held bi-yearly. On-site foremen, superintendents and office staff facilitate a variety of hands-on safety training for the entire project.

"We stress that safety comes from each individual on the job," Majors says. "We believe we can have zero accidents and incidents every day we work, and that's the message we send."

Company-wide, every Shimmick employee is asked and expected to contribute to the company's safety program, and each worker's contribution is evaluated in their annual review, according to the company.

All salaried employees are required to complete nine safety related courses: Alcohol and Substance Abuse Training, Competent Person



(Trench) Training, Confined Space Training, Crane Safety Training, Fall Protection Competent Person Training, First Aid/CPR Training, OSHA 10/30 Hour Training, Rigging Competent Person Training and Fleet Safety Training.

For larger or longer-term jobs, outside trainers are brought in to present specialized training for employees.

A quarterly safety incentive program offers extra cash to all operators, foremen and supervisors whose crews work without incidents that involving lost time, modified duty or equipment damage exceeding \$5,000.

"Our safety program also incorporates a disciplinary policy that we diligently enforce," the company explains. "We believe that employees found performing work in an unsafe manner shall be subject to discipline or termination."

### Company Experience

Shimmick Construction Co. Inc. was established in 1990. The company has extensive experience on bridge, highway, waterway, electrical and railway projects. "We believe in building the people and projects that improve America's infrastructure," Majors says.

The Fremont Central Park Subway project is the latest collaboration between Shimmick Construction and BART. Other past and present clients include the Golden Gate Bridge Authority, Alameda Corridor Transportation Authority, LA Metropolitan Water District, City of Los Angeles Department of Public Works, Union Pacific Railroad, San Francisco Public Utilities Commission, city of West Sacramento, East Bay Municipal Utilities District, San Francisco Muni, BART and the Port of San Francisco. ♦

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