

WTP4 RAW WATER INTAKE - LAKE TRAVIS, TX

Construction Engineering for Installation

The Raw Water Intake at Lake Travis, outside of Austin, TX, was constructed as part of the City's new Water Treatment Plant #4 (WTP4). The Intake is capable of supplying 300 million gallons of water per day to the residents of Austin.

PROJECT INFORMATION

Year of Completion: 2012

Construction Cost: \$61.9 Million

Client: Obayashi - Manson JV

Project Owner: Austin Water

SERVICES PERFORMED

- ◆ Structural Steel Framing Analysis & Design
- ◆ Construction Engineering

BSCE provided Construction Engineering Services for the installation of the Raw Water Intake. The installation was complicated due to a steeply sloping rock surface and water depths exceeding 140 feet. The Intake structure itself consisted of a 12-ft diameter vertical riser pipe and a diagonal pipe following the slope of the grade to support three separate intake structures. The upper structures were founded on steel piles and the deepest structure was supported by a vertical riser which was grouted

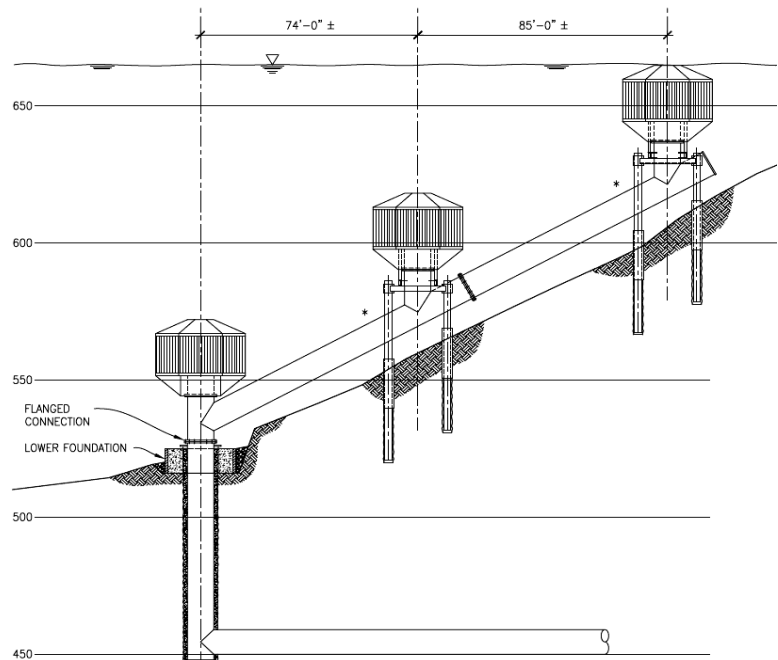
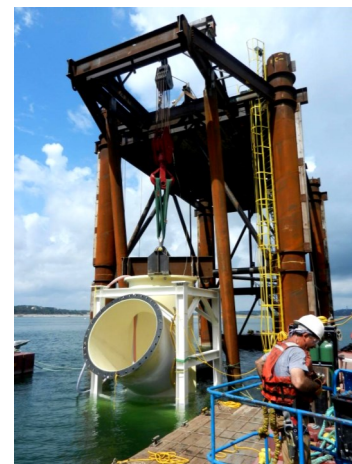


in place directly to the underlying rock formation.

For the construction of the upper foundations, BSCE devised a floating moonpool configuration and designed steel guide frames for pile installation. The piles were installed into the rock by driving, and relief drilling was required to reach required tip elevation. After pile installation, the guide framing for the piles was also used to erect the permanent structure saddles during grouting operations.

For the construction of the vertical riser, BSCE designed a pile supported platform which was utilized for multiple construction activities. First the platform was used to install and support a 13-ft diameter casing. The platform was then used to support a pile-top drill for construction of a 12-ft diameter vertical shaft into the rock below. After the shaft was constructed the casing was removed, and the platform was used to suspend the 300 ton vertical riser pipe.

For the riser and intake pipe installation, BSCE provided extensive analysis and design of lifting components and rigging. The Intake pipe was hung from a barge mounted ringer crane and connected the vertical intake pipe. A lowering system, designed by BSCE, was mounted on the pile supported platform and used in conjunction with the crane to lower the assembled riser and intake pipe to final grade so it could be grouted in place.



Completed Intake and Tunnel



BITTNER-SHEN CONSULTING ENGINEERS, INC.

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921 SW Washington St., Suite 765, Portland, OR 97205