

FLOAT-IN COFFERDAM FOR RUSKIN DAM MODIFICATION



PROJECT INFORMATION

Year of Completion: 2015
 Construction Cost: \$100M
 (Approx.)
 Client: Flatiron-Dragados
 Owner: B.C. Hydro

SERVICES PERFORMED

- ◆ Cofferdam Design
- ◆ Design of Temporary Sheet-Pile Bulkhead
- ◆ Construction Engineering for Cofferdam Installation

The Ruskin Dam and Powerhouse, located east of Vancouver, B.C., was originally constructed in 1930. BC Hydro required a major upgrade of the entire facility while maintaining normal operations. A major aspect of the work includes replacing the existing 7-bay spillway with a new 5-bay spillway while maintaining the same or greater flood routing capacity. To complete this task, while meeting BC Hydro's construction flood passage and earthquake design

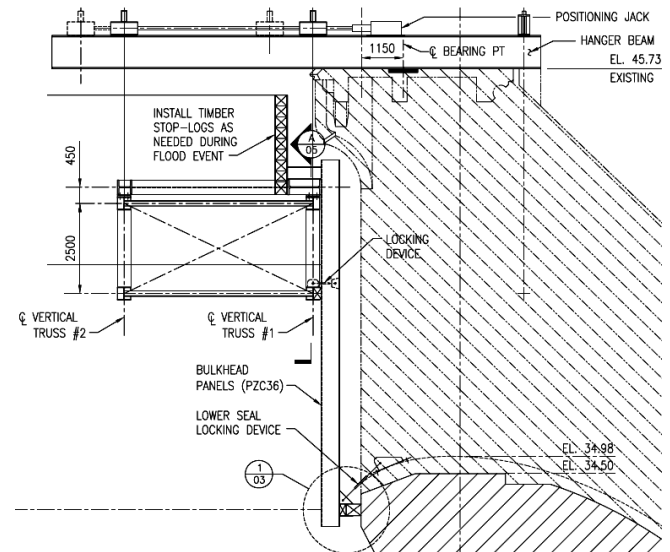
requirements, the contractor hired BSCE to design a movable cofferdam that could span 130-ft, or 3 gate bays, at a time. The entire spill retrofit replacement was done in three stages behind this metal bulkhead that bared against the existing piers and provided a watertight barrier in front of the workspace on the upstream face of the dam.

The design concepts provided in the bid documents required intermediate supports to transfer the large bulkhead

forces to the dam, especially under the design earthquake. This would have required an extended construction schedule in order to systematically remove and replace each pier and gate. BSCE developed an innovative design using a truss and hanger system for this challenging task that eliminated the need for intermediate supports and substantially shortened the construction schedule.



Installation of pre-assembled cofferdam



Cross-section of cofferdam at face of dam



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