Esquimalt Graving Dock Waterlot Phase 2 South Jetty Remediation Design and Construction Challenges

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Site Location

Multiphase Project Description and Objectives

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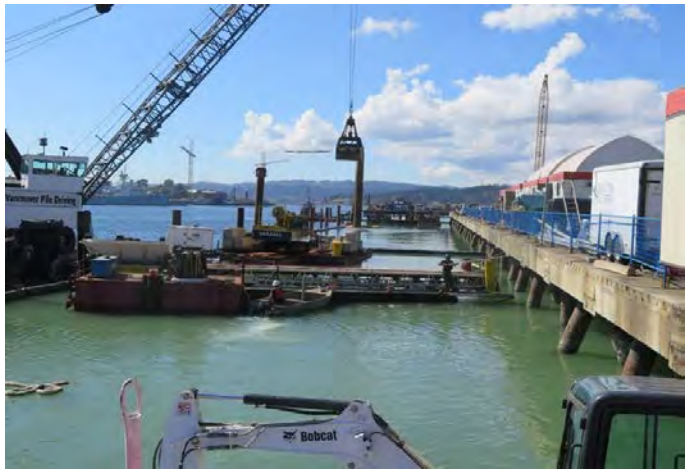
- Phase 2: Jetty demolition and under-pier remediation
  - 36,150 m^3 contaminated sediment removal
    - Required Dredging (with payable overdredge): 34,400 m^3
    - Missed inventory (contingency): 1,750 m^3
    - Hazardous waste removal volume: 200 m^3
  - 38,700 m^3 engineered capping material placement
    - Sand material: 24,750 m^3
    - Filter material: 6,050 m^3
    - Armour material: 7,900 m^3
  - Remediation activities performed in open-water and under-pier areas

Multiphase Project Description and Objectives

- Other activities
  - Timber jetty demolition and asphalt removal
  - Steel sheet pile wall re-drive
  - Temporary re-suspension barrier (TRB) installation and maintenance
  - Utility upgrades
  - Cathodic protection system re-installation
- Construction from October 2015 to December 2016
  - Remove maximum contamination practicable
  - Prepare site for jetty reconstruction
    - Project in tender now; construction to start late 2017

Design and Construction Challenges

- South Jetty demolition and asphalt removal/disposal
- Temporary re-suspension barrier
- Dredging access/material removal
- Residuals generation/management
- Engineered sediment cap construction



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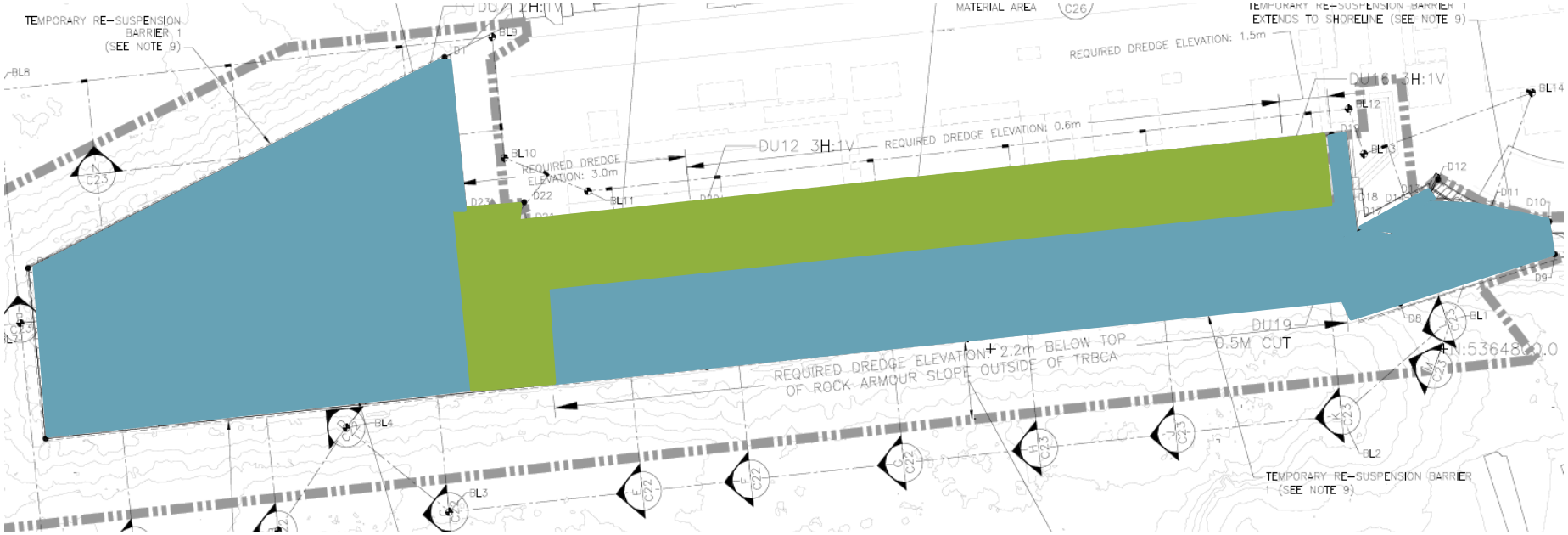

Timber jetty to be demolished

Steel pile-supported jetty to be retained

Design and Construction Challenges

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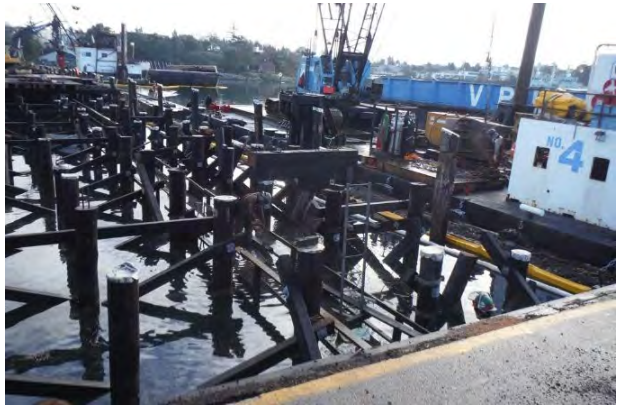
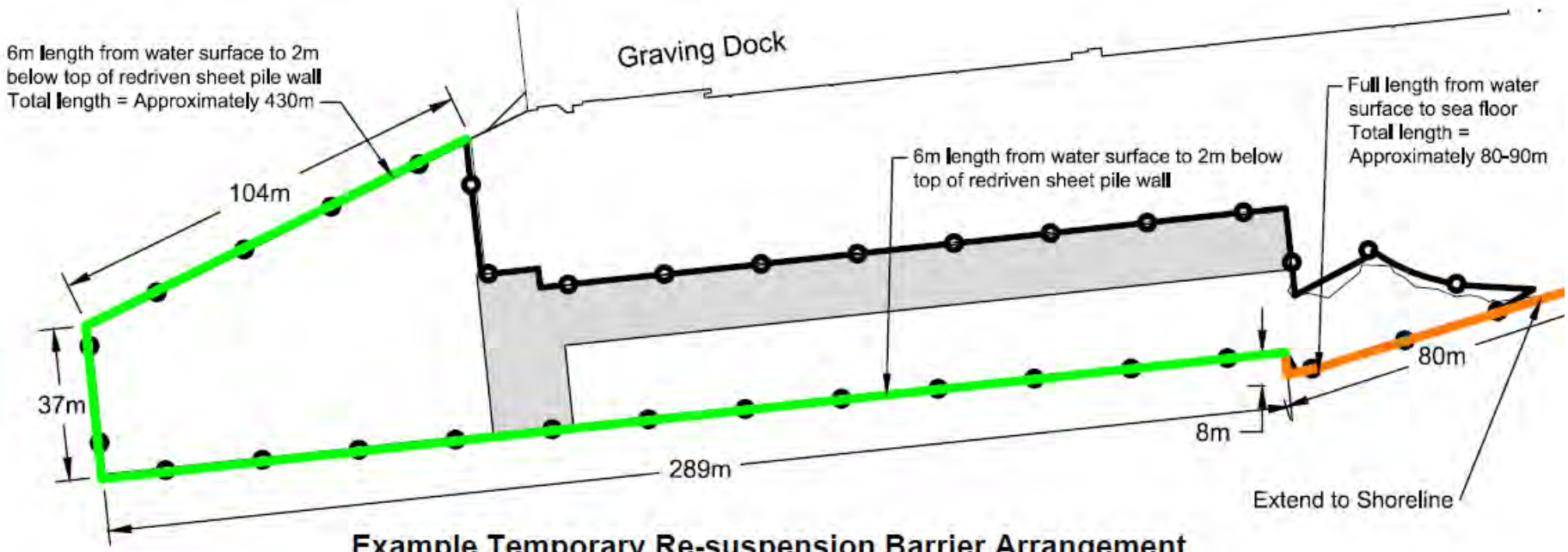


Design and Construction Challenges

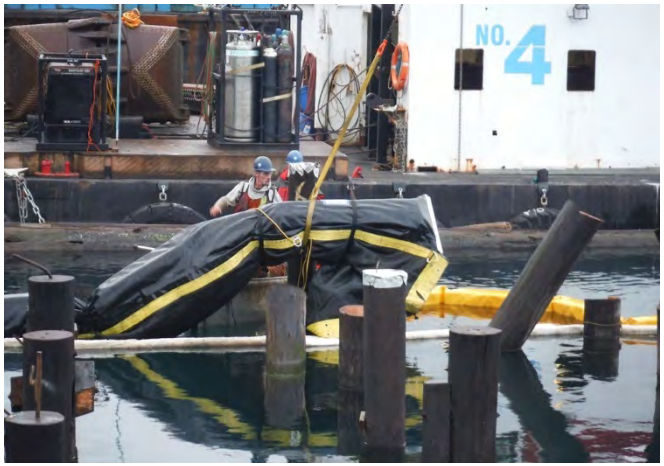
- Temporary re-suspension barrier

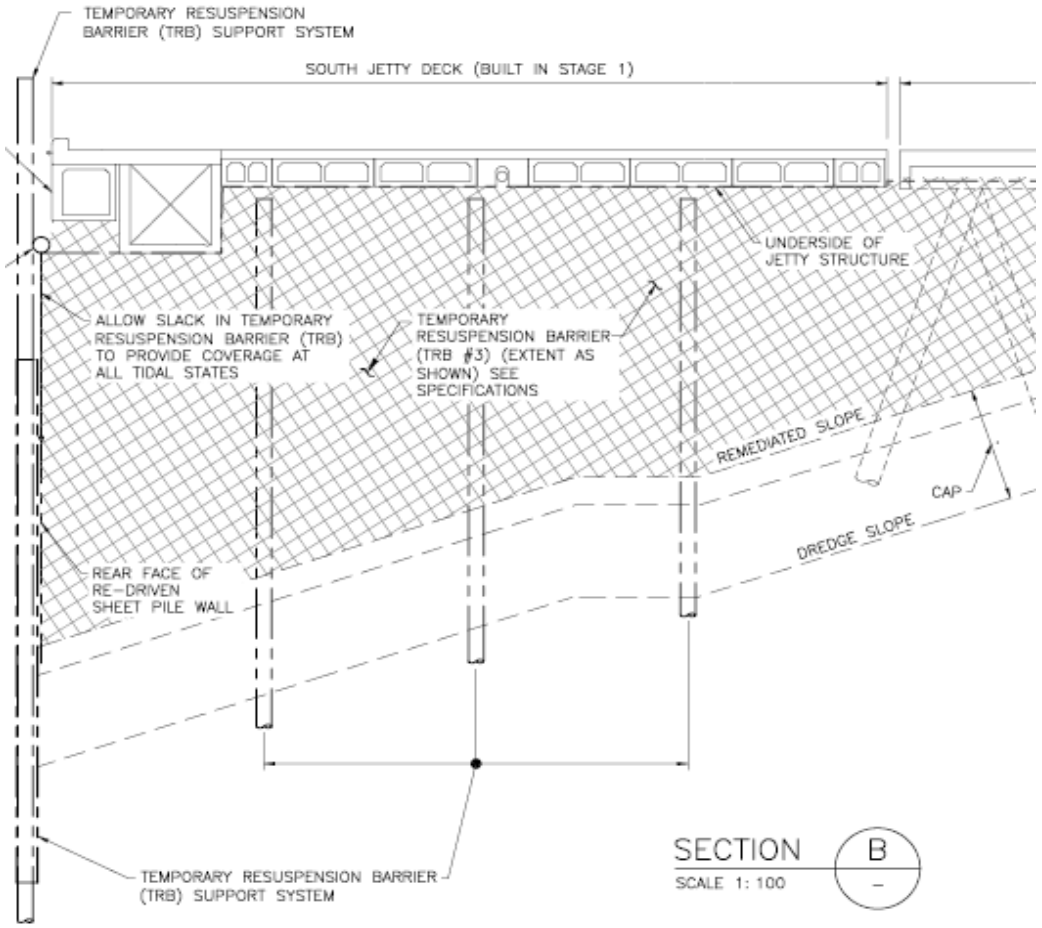


Example Temporary Re-suspension Barrier Arrangement (Single)

Design and Construction Challenges

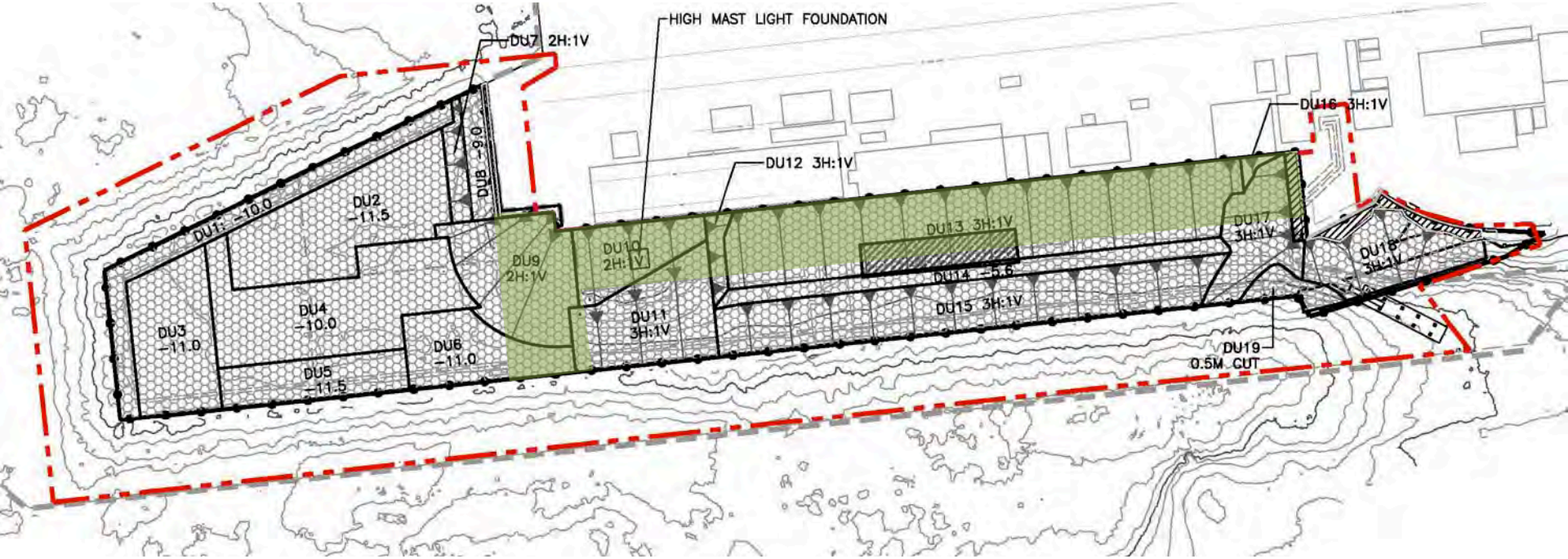
- Temporary re-suspension barrier





Design and Construction Challenges

- Dredging access/material removal



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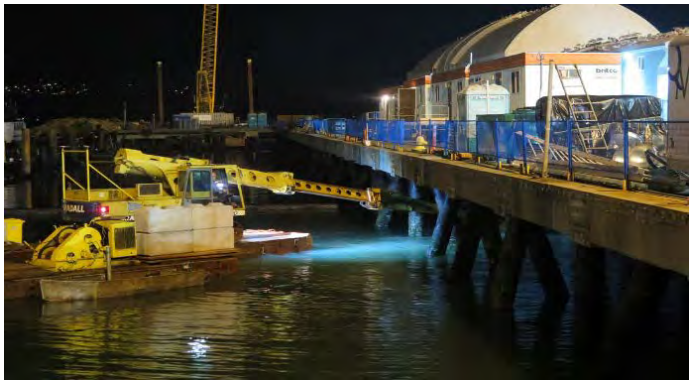

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Design and Construction Challenges

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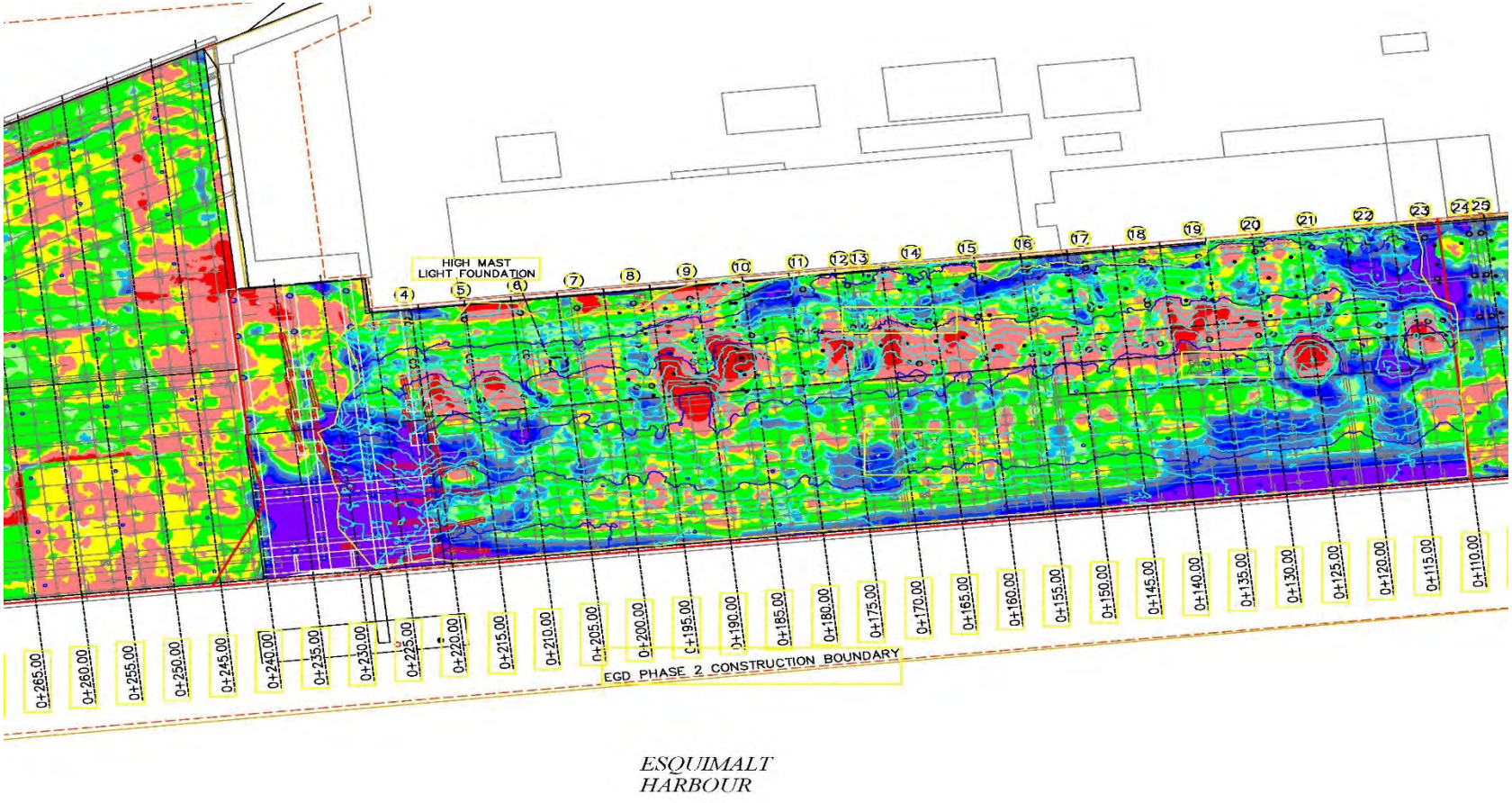

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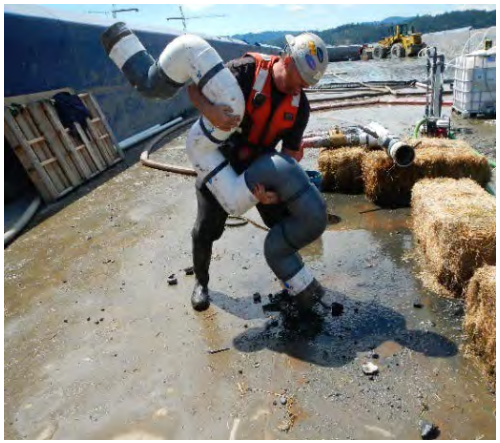
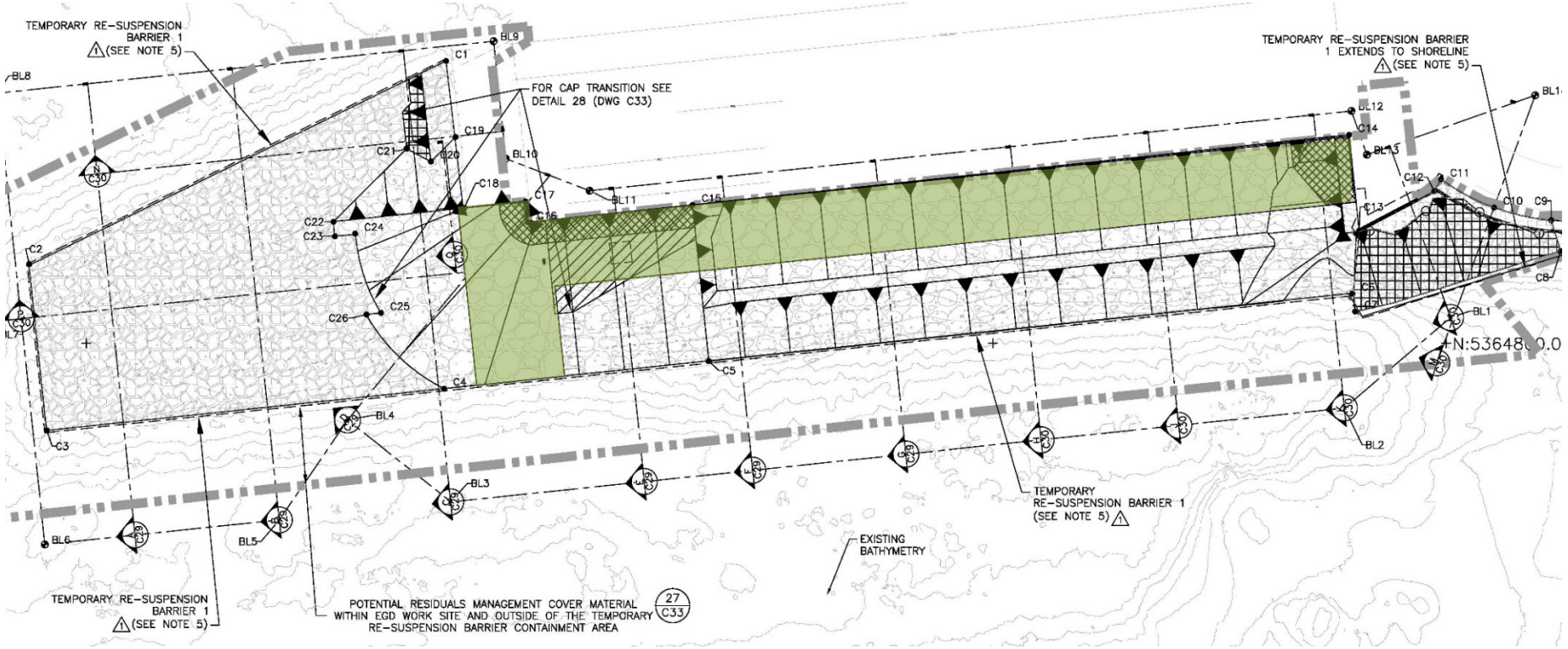


Design and Construction Challenges

- Engineered sediment cap construction



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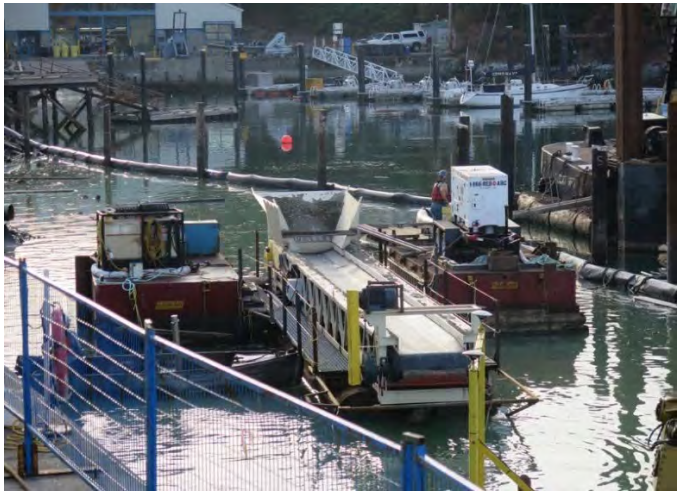

Design and Construction Challenges

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Lessons Learned

- Assess/evaluate contingency approach during design and project tender
- Evaluate project schedule with conservative production rates and contingency allowances
- Conduct thorough cash flow forecasting and quantity balancing on routine (i.e., monthly) basis
- Work adaptively with contractor
  - Maintain design intent
  - Achieve remediation objectives

Questions

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