Haines Borough Lutak Dock Design and Development Concepts

Bill Seward – Borough Manager
Brad Ryan – Director of Public Facilities
Van Le, AICP – R&M Planning Lead
John Daley, P.E. – R&M Project Manager

www.LutakDock.com

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Project Objectives

- Lutak Dock has exceeded its useful service life and a scheduled replacement is required.
- This project will outline feasible alternatives for the replacement.
- At least three options will be considered:
  1. Encapsulation; New sheet pile wall outside of the existing cells
  2. Replace in kind with earth filled bulkhead
  3. Pile supported dock with sheet pile abutment

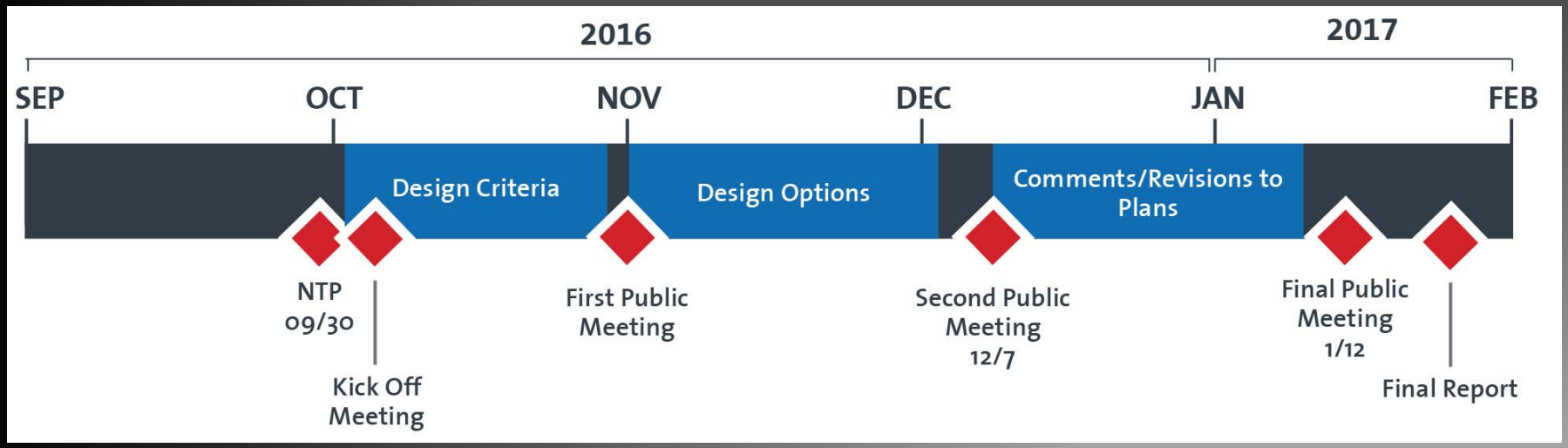
Schedule

- Frist Public Meeting to inform & to solicit input
  - November 1, 2016
- Alternatives and Infrastructure Concepts
  - November 1 through December 8, 2016
- Second Public Meeting to Present Draft Concepts
  - December 7, 2016
- Third Public Meeting to Present Final Concepts
  - January 12, 2017
- Final Report
  - January 25, 2017

Public Involvement

- Industry Stakeholder Coordination Meeting
  - November 1st, 2016
- Community Meeting 1
  - November 1st, 2016
- City & Local Government Coordination Meeting
  - November 2nd, 2016
- Community Meeting 2
  - December 7th, 2016
- Community Meeting 3
  - January 12th, 2017

Schedule



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Existing Site

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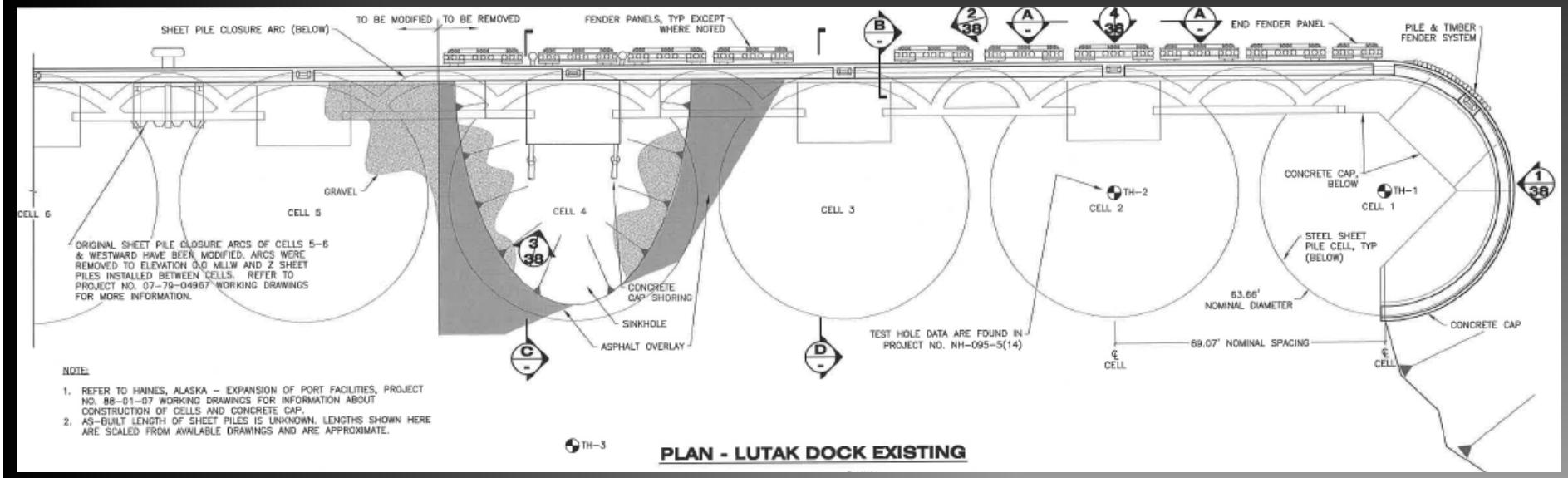
Existing Site



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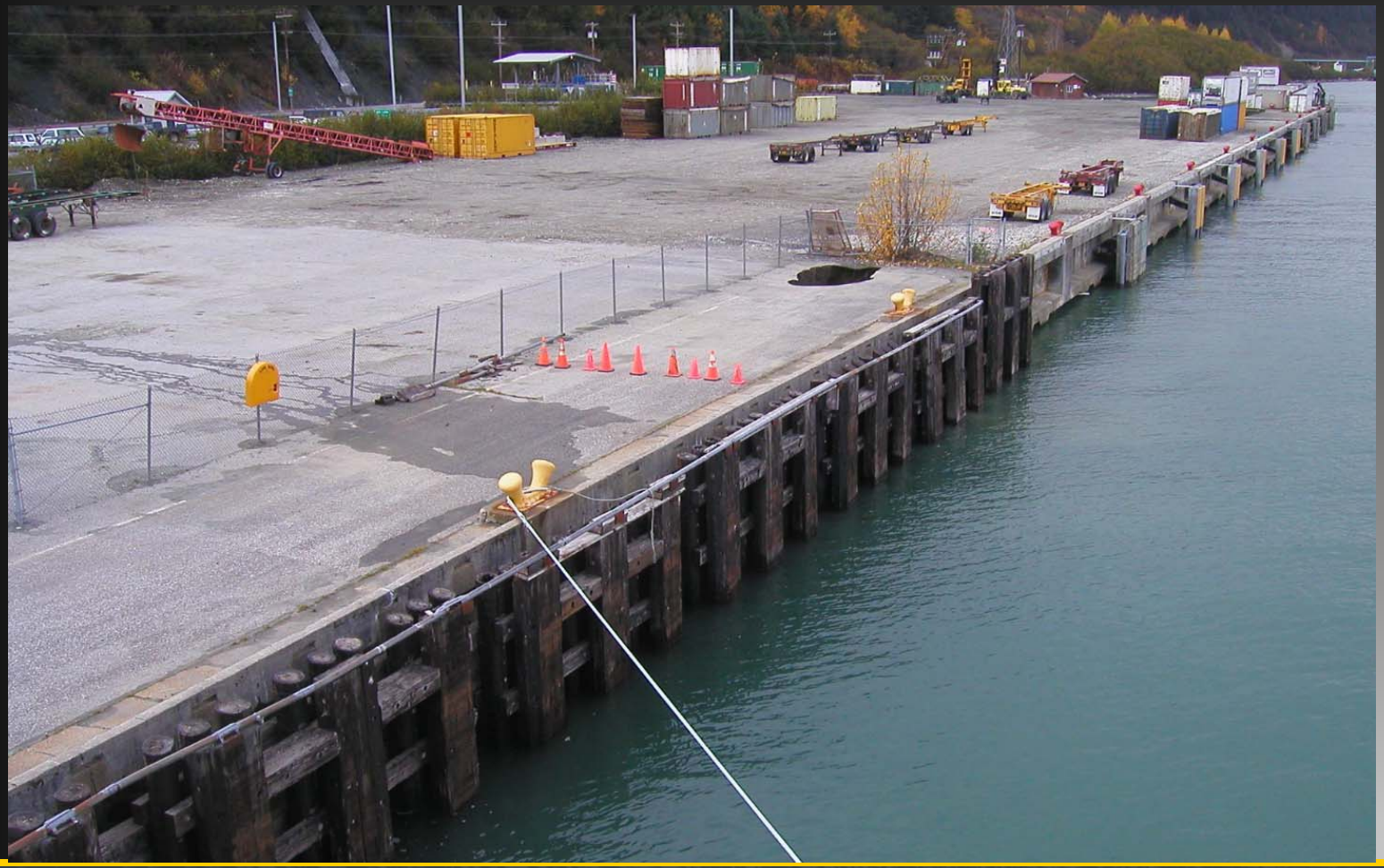
Existing Site



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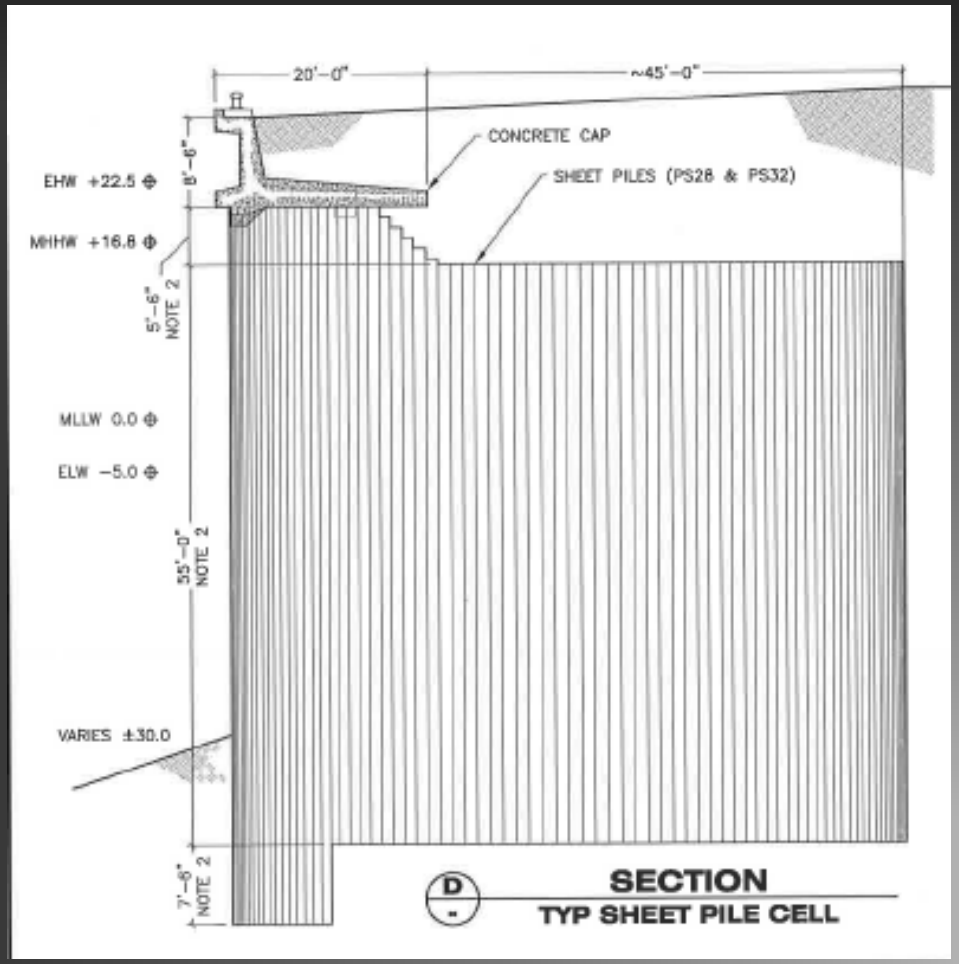
Existing Site



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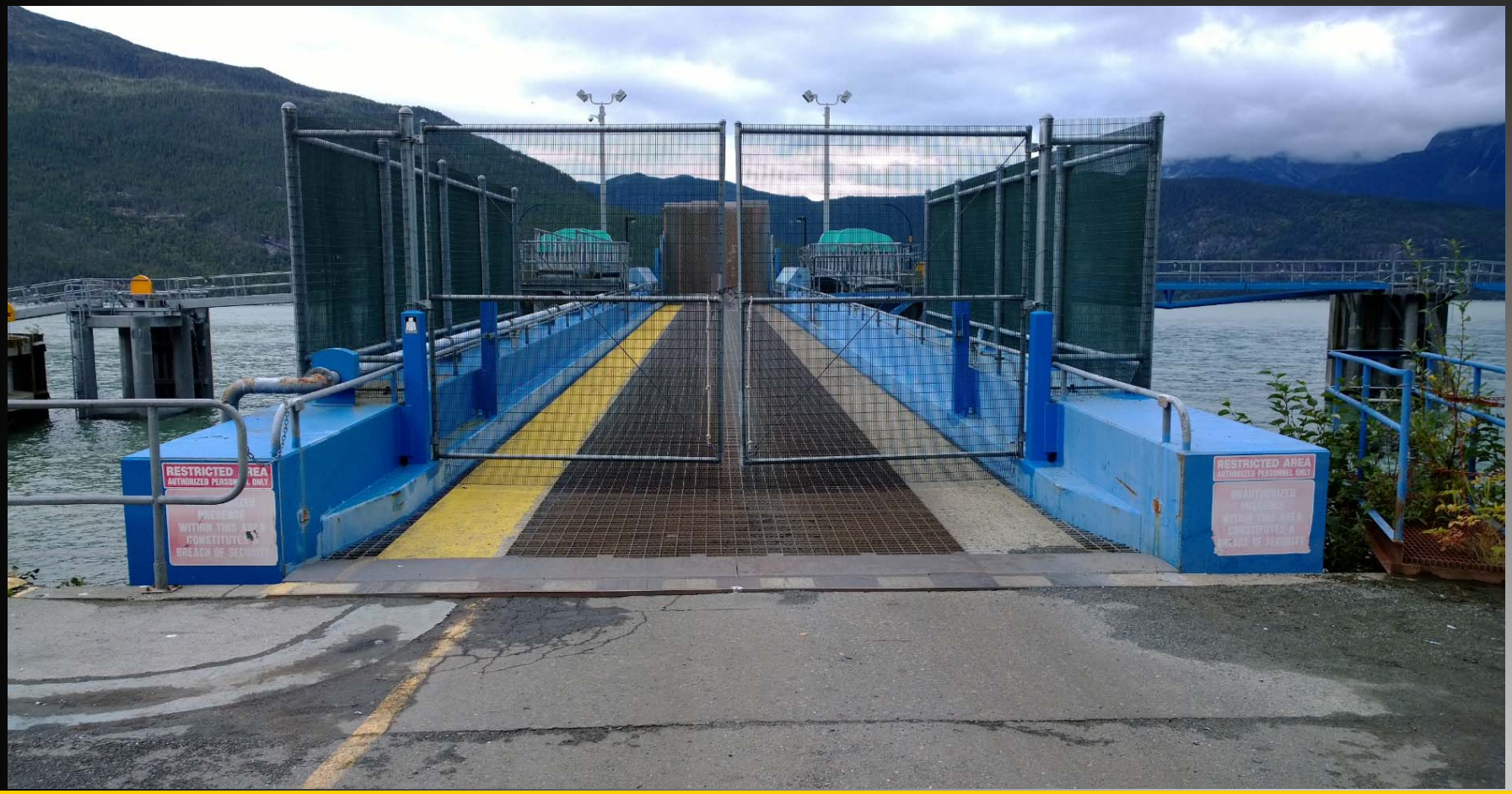

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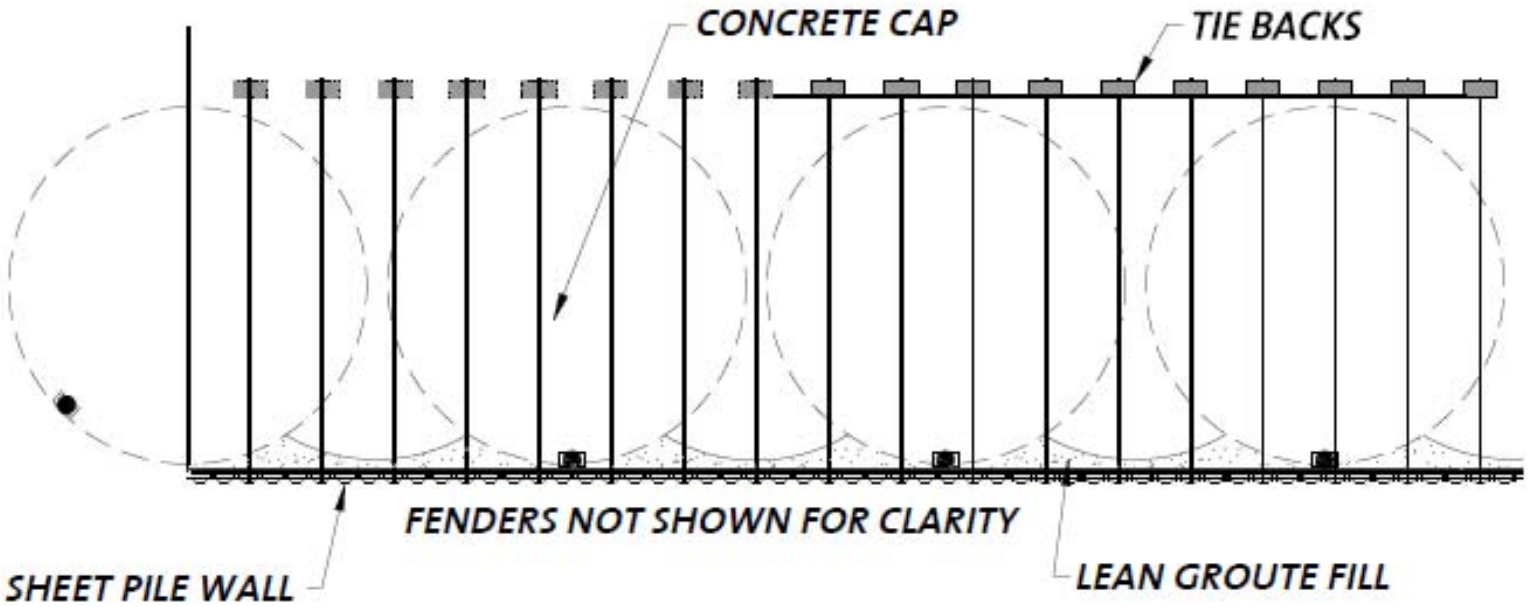
Base Line Information

- Plan sets from original construction through today
- Geotechnical reports
- Inspection reports
- ADOT plans and evaluation
- Haines Comprehensive plan

Design Option 1 Encapsulation



NEW SHEET WALL FORMED FROM
"COMBINATION" H PILING AND Z SHEETS.

Design Option 1 Encapsulation

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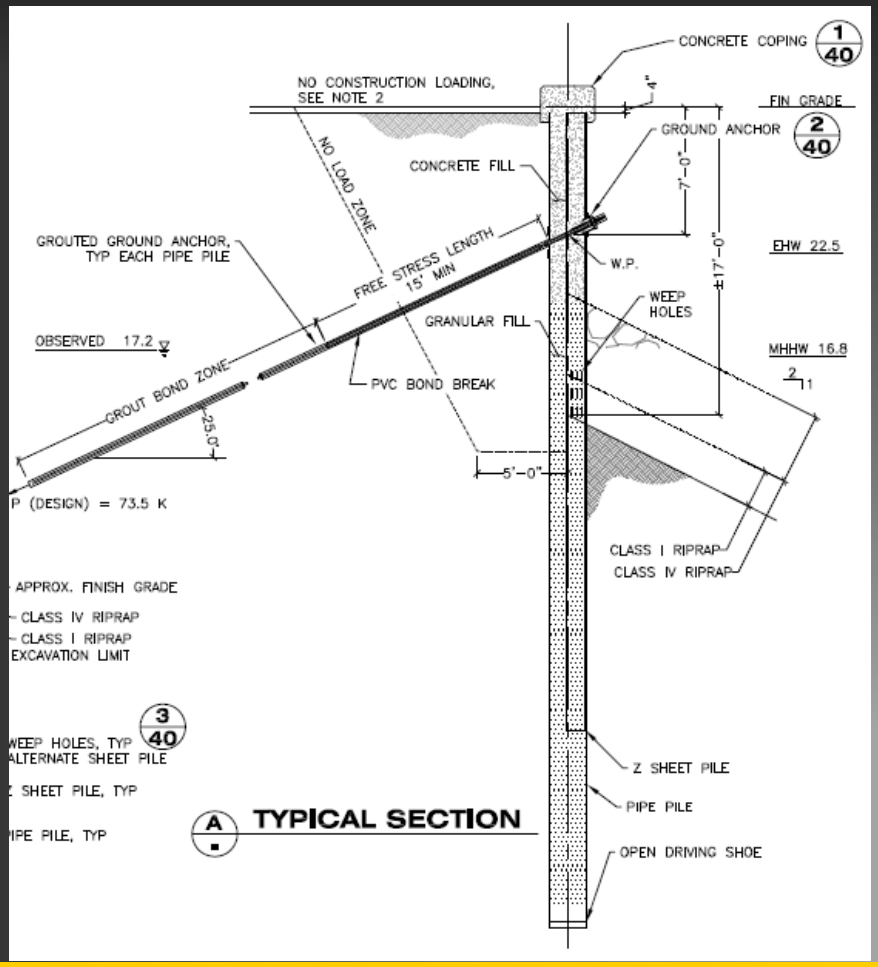
Design Option 1 Encapsulation



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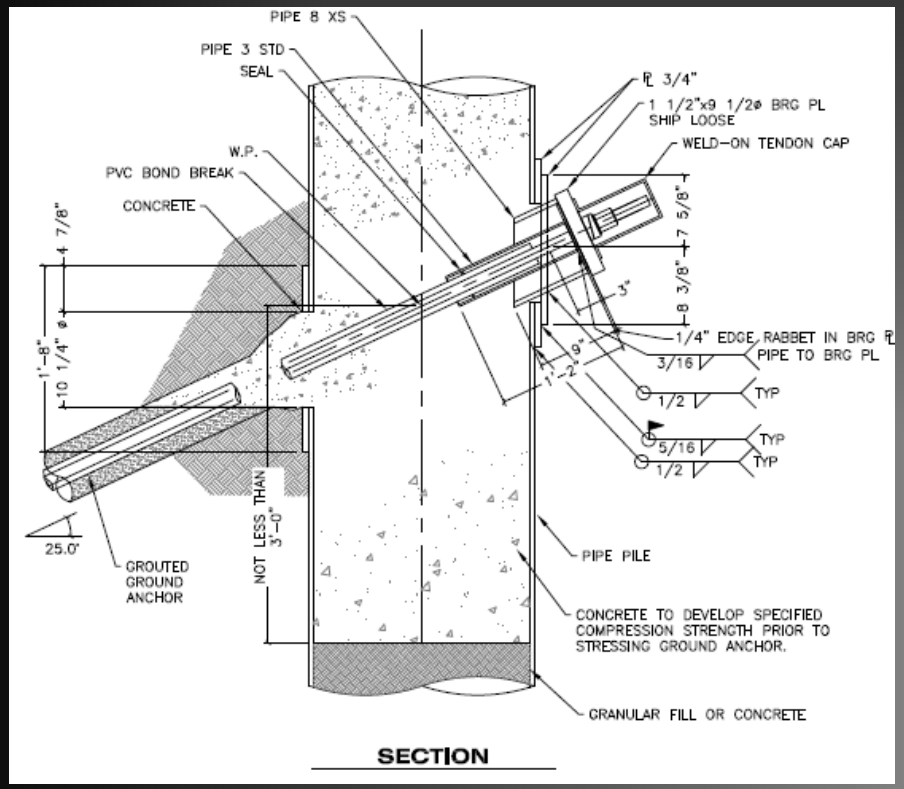
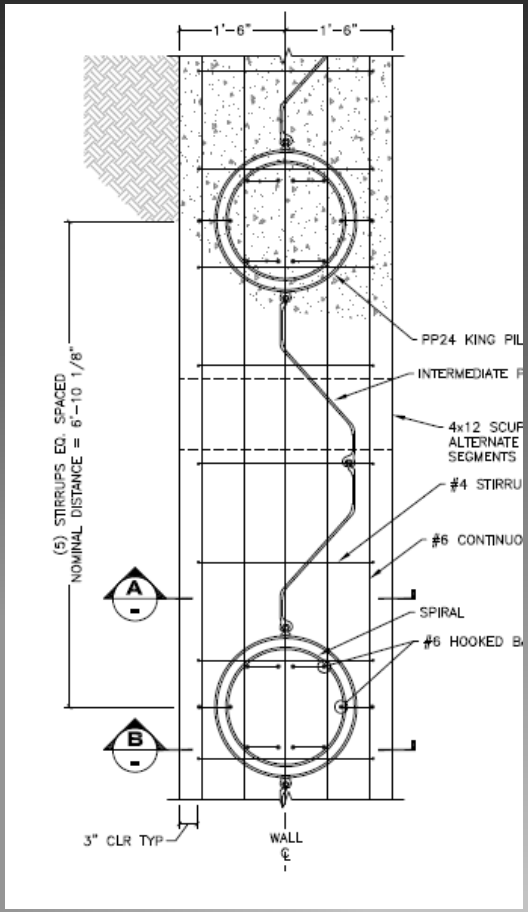
Design Option 1 Encapsulation





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Design Option 2 Replace in Kind

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Design Option 2 Replace in Kind

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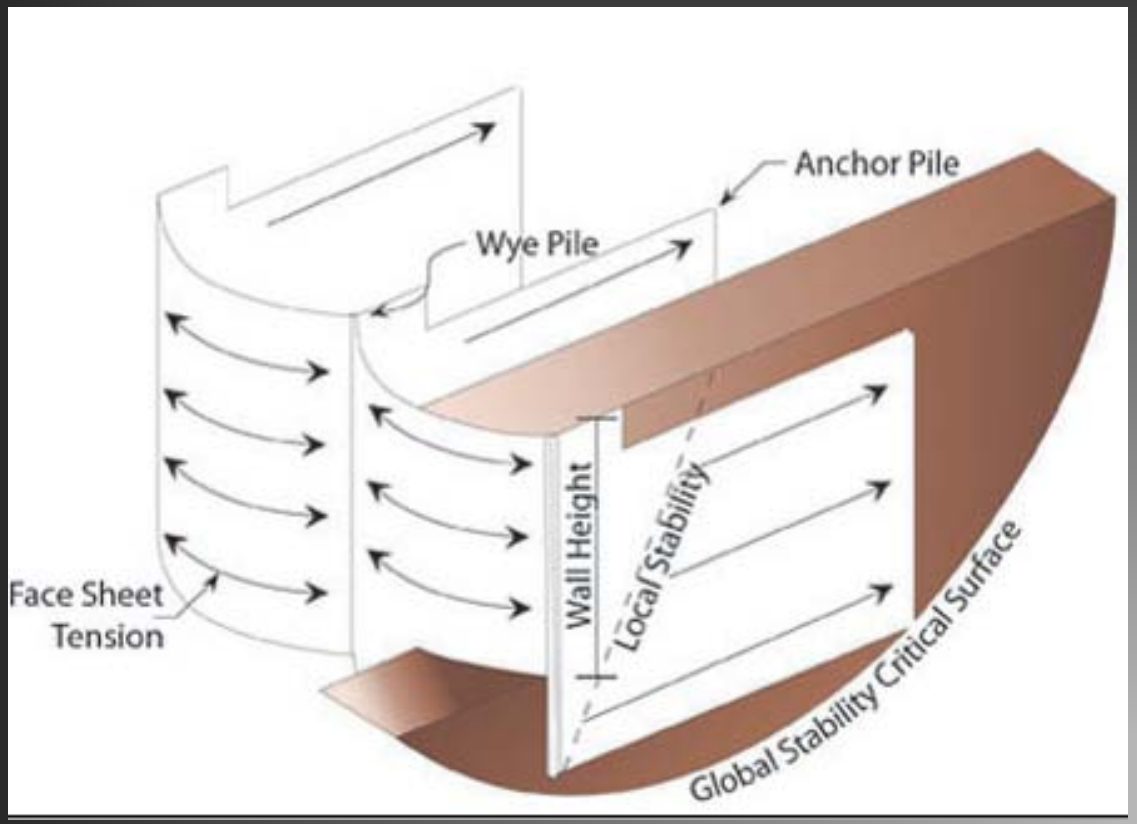
Design Option 2 Replace in Kind

PND Engineers



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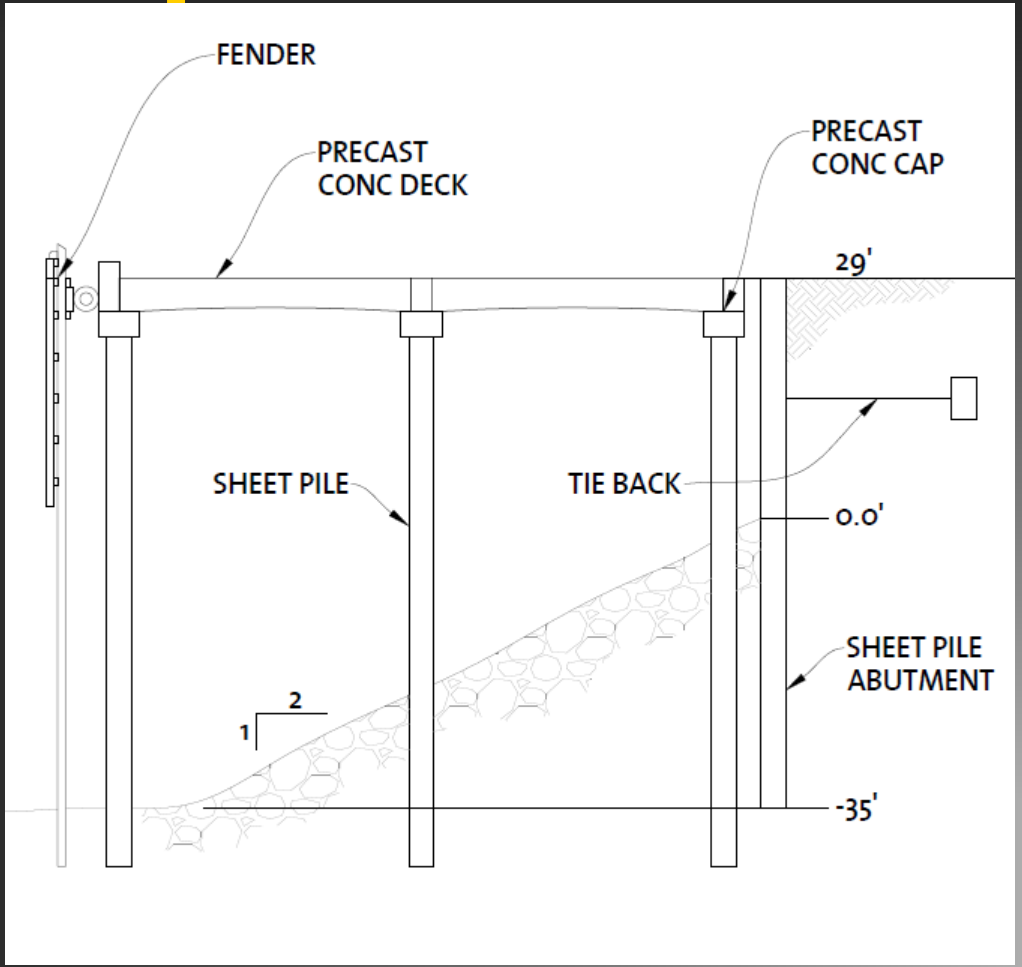
Design Option 3 Platform Dock



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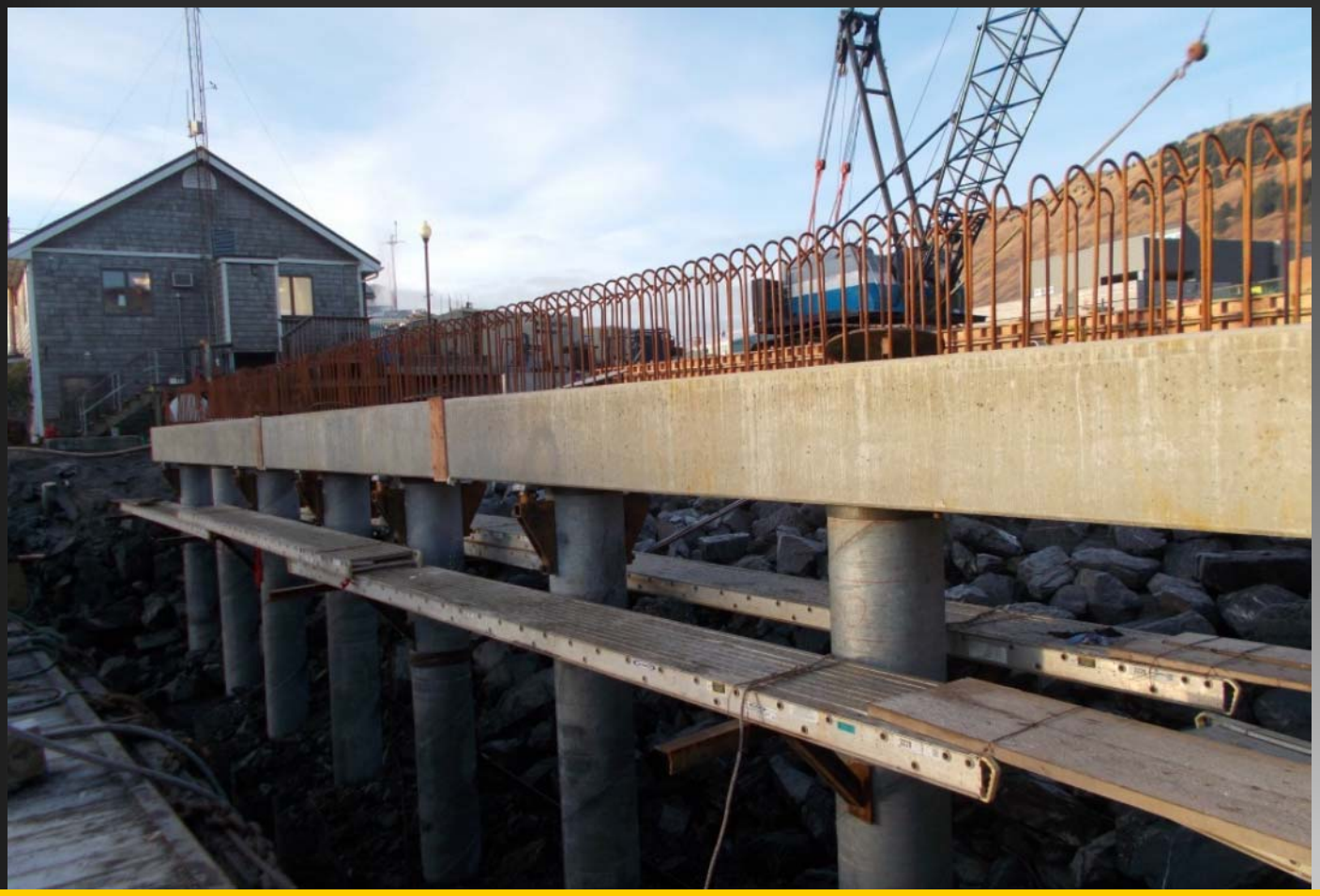
Design Option 3 Platform Dock



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Design Option 3 Platform Dock

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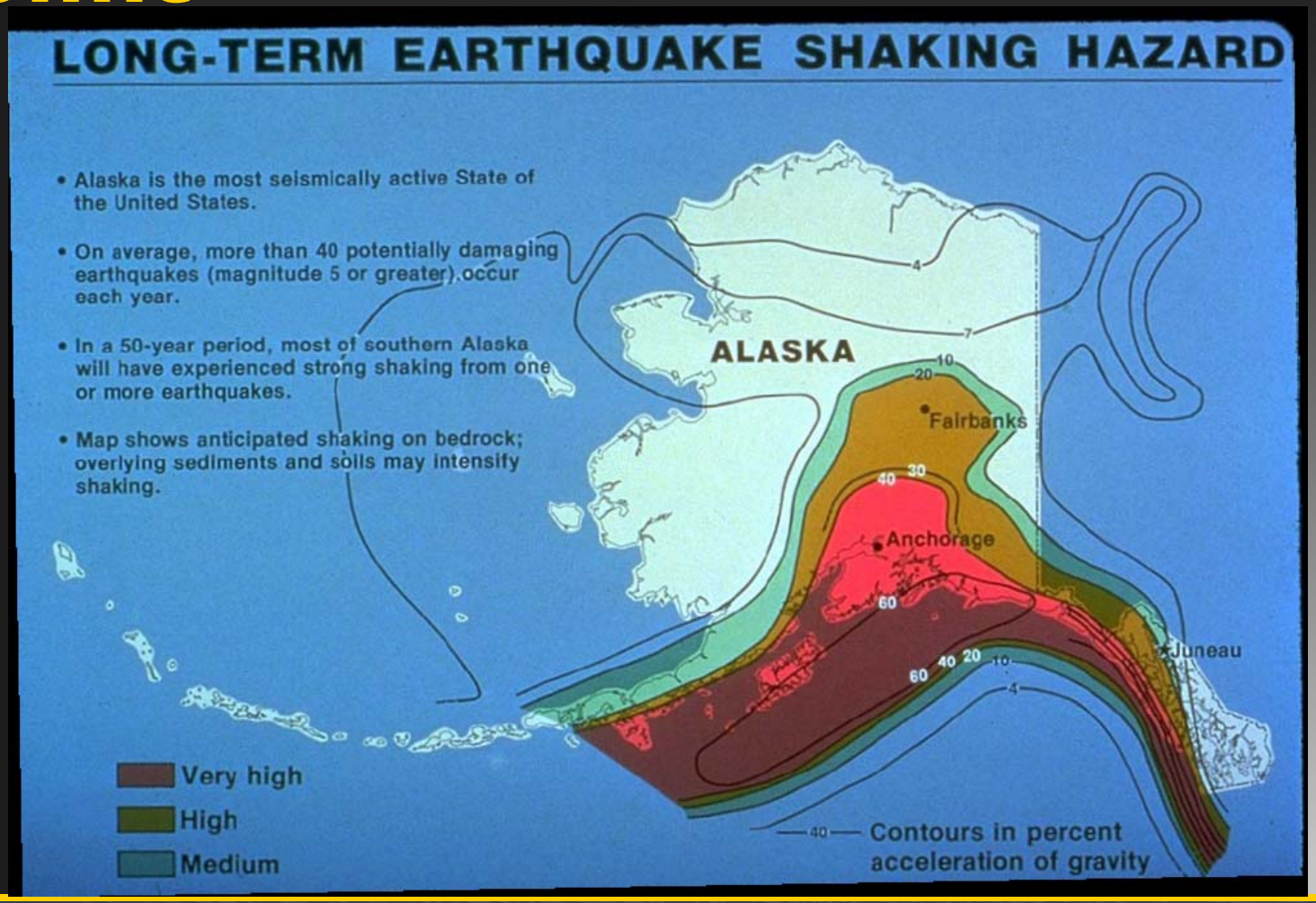
Seismic



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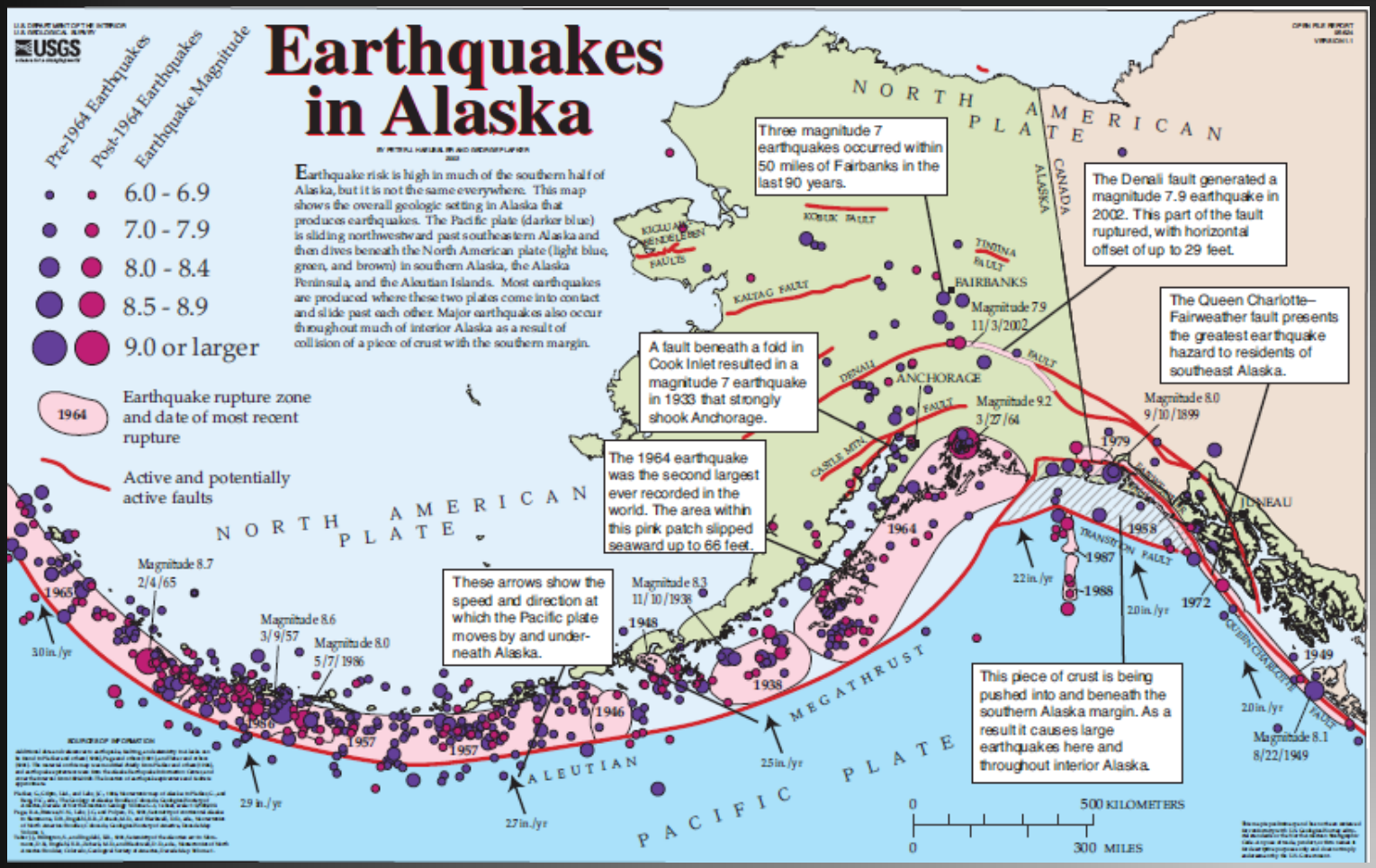
Seismic



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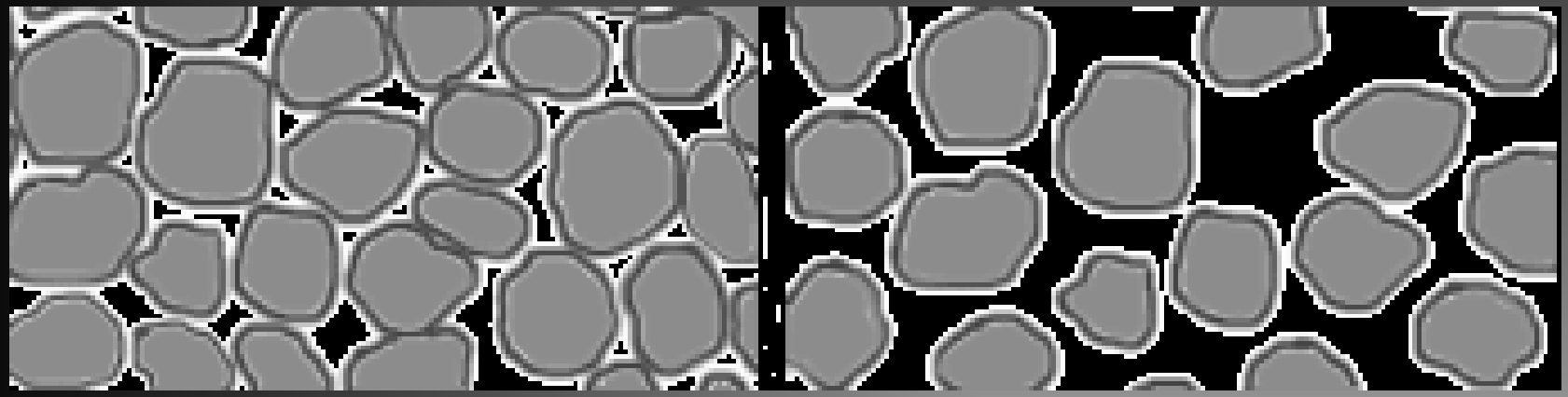
Seismic Liquefaction

Particles touching



Pore pressure between particles

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Seismic Liquefaction

King Harbor Marina 1994 Northridge M 6.7

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Seismic Liquefaction

Kobe Japan 1995 M 7.2

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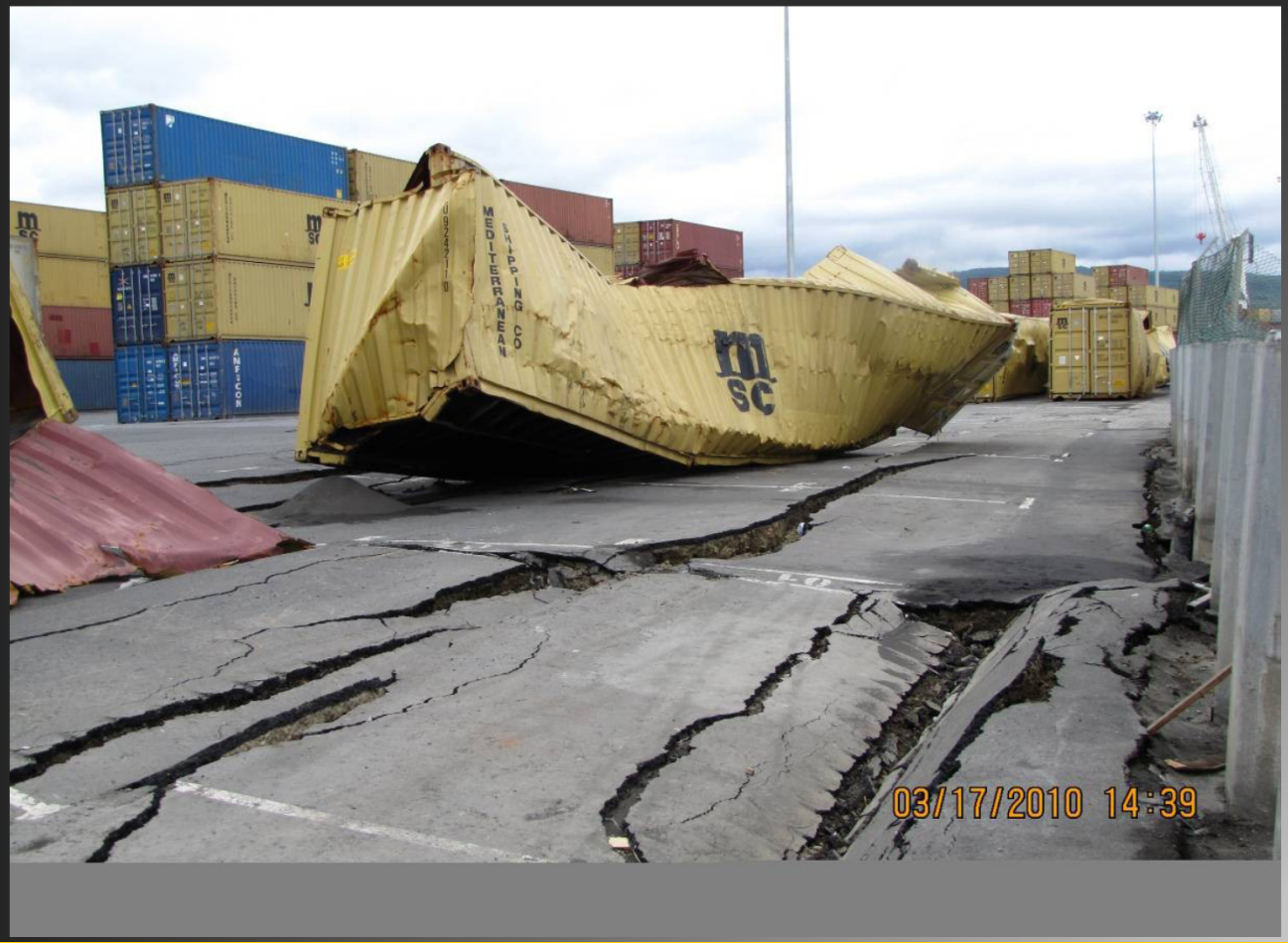
Seismic Liquefaction

Port of Coronel, Chile 2010 M 8.8



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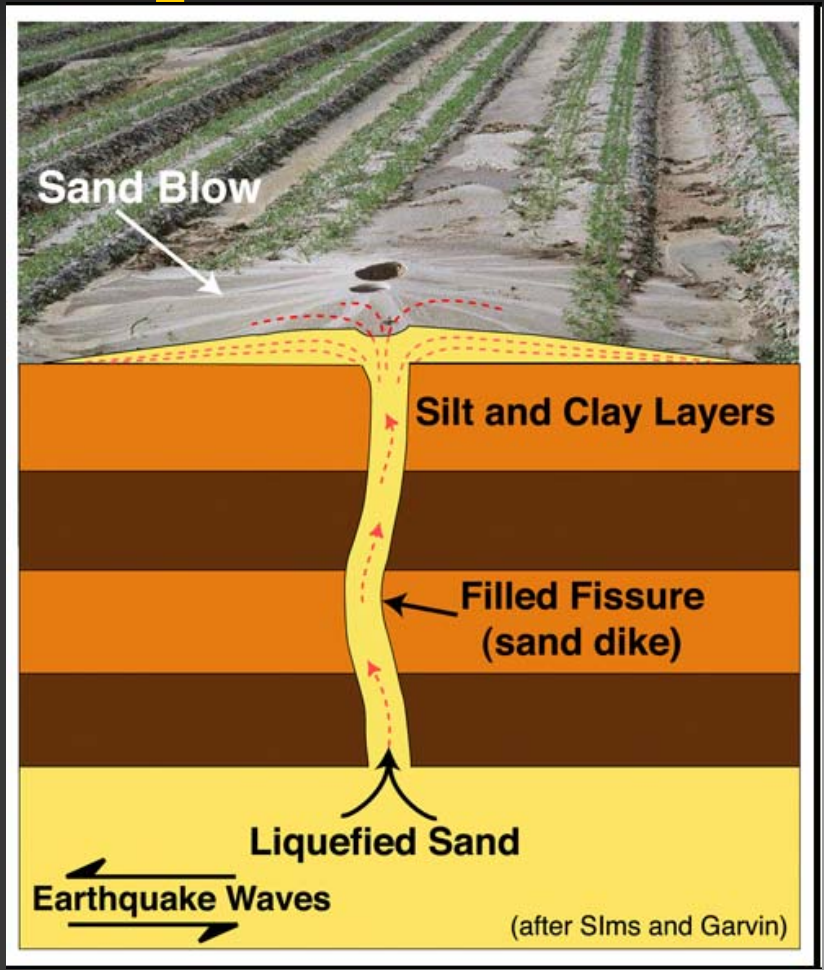
Seismic Liquefaction



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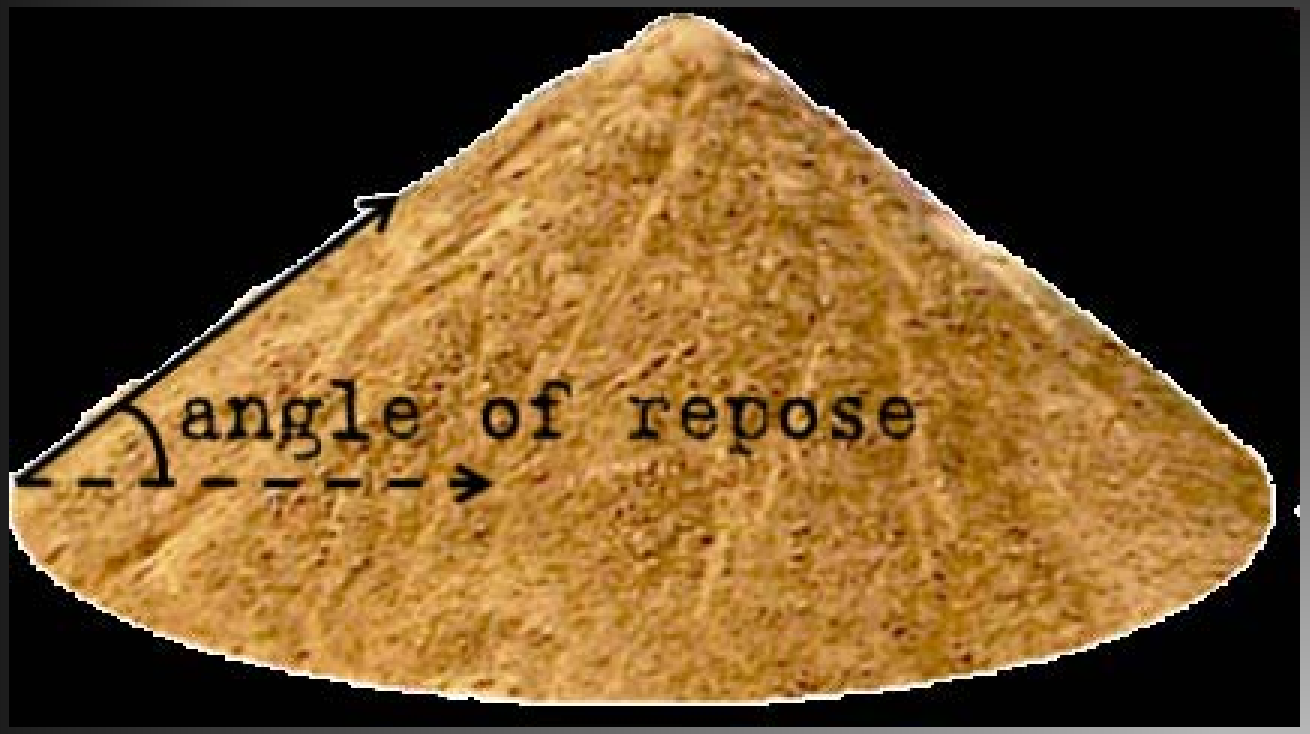
Soils – Friction Angles



Soils - Friction Angles

Very Loose	<30
Loose	30 - 35
Medium	35 - 40
Dense	40 - 45
Very Dense	>45

Soils – Friction Angles

Very Loose	0
Loose	0 - 10
Medium	10 – 15
Dense	15 - 25
Very Dense	25 - 35

Soils - Quarry Spalls - Best

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Soils – Silty Sand - Worst

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Questions?

- Visit the project website
  www.LutakDock.com

- The study team is available for follow on meeting(s) if required.

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Questions?

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