

Certification Update: PEN 1 & PEN 2 Levees

Field Investigation Phase

PEN 1

- 62 borings total
- 49 borings on land, 13 overwater
- Avg. spacing between boring groups = 1,030 feet
- Borings average 30 to 60 feet in depth, with a few up to 100 feet



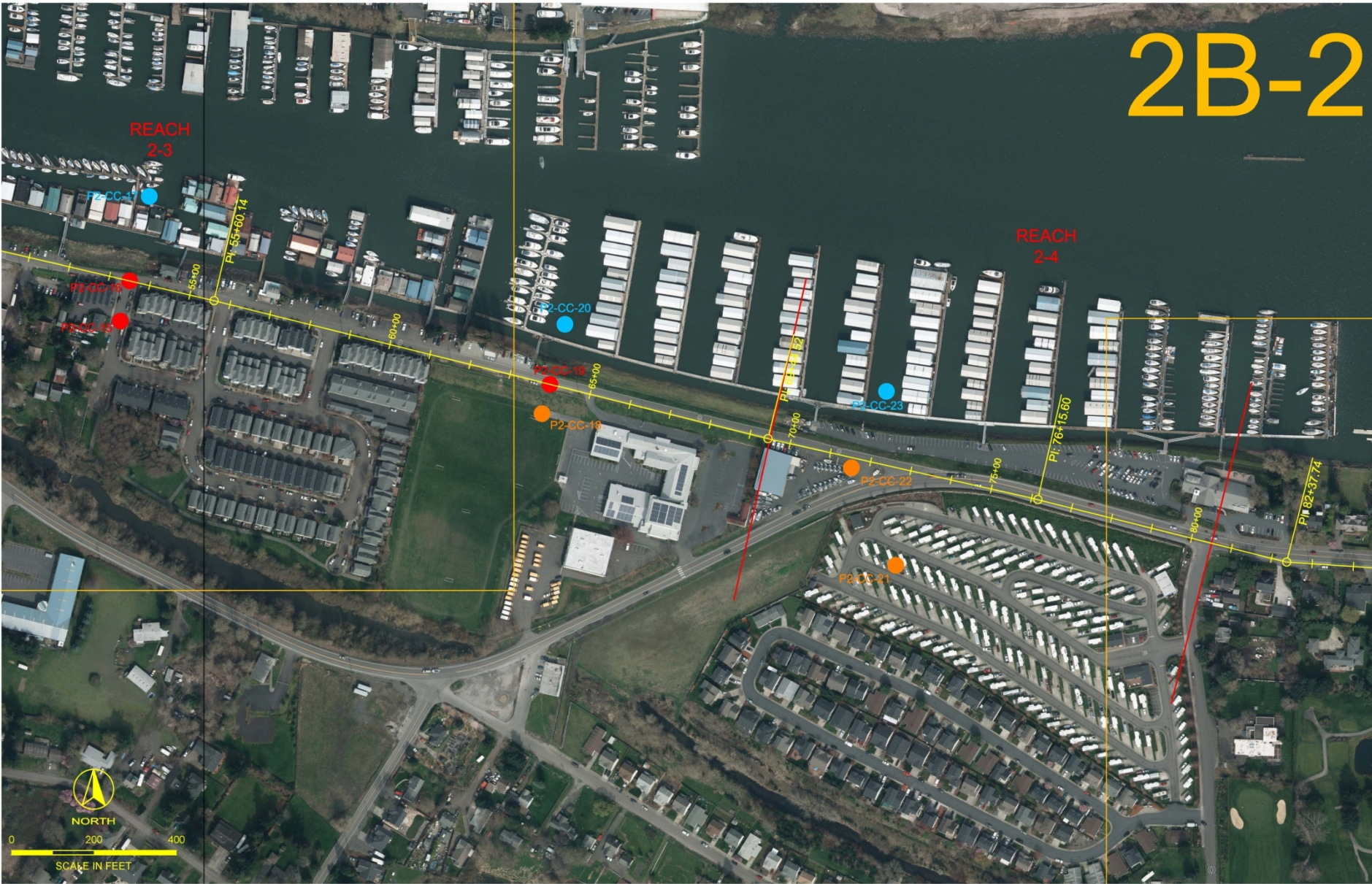
PEN 2

- 74 borings total
- 51 borings on land, 23 overwater
- Avg. spacing between boring groups = 1,010 feet
- Borings average 30 to 60 feet in depth, with a few up to 90 feet

Pen 2



2B-2



Geologic Section

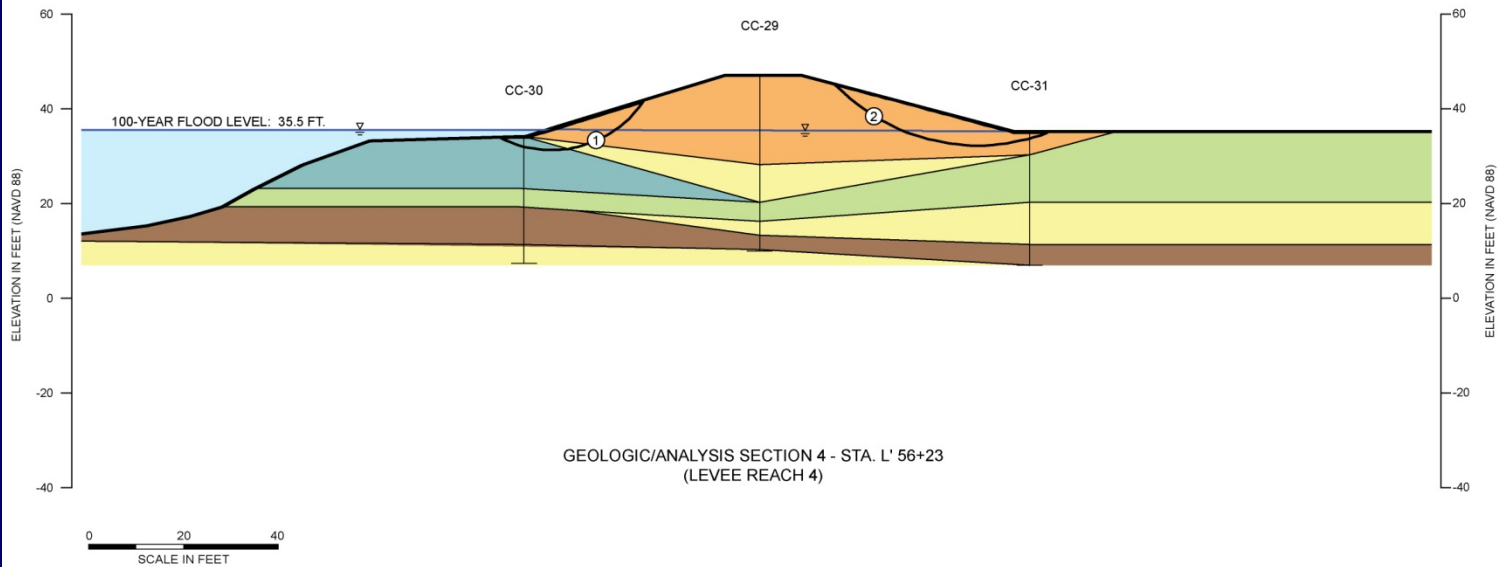
- Embankment SAND to slightly silty SAND
- Foundation SAND to slightly silty SAND
- Foundation SILT to fine sandy SILT
- Foundation Silty GRAVEL
- Foundation Slightly clayey SILT
- Foundation Clayey SILT to silty CLAY

SLIP SURFACE	CALCULATED FS	MEETS REQUIRED FS*
1	2.487	✓
2	3.150	✓

*MINIMUM ALLOWABLE FS=1.4, USACE, EM 1110-2-1913

CALCULATED EXIT GRADIENT AT TOE OF LANDWARD SLOPE = 0.2**

**RECOMMENDED MAXIMUM EXIT GRADIENT = 0.5, USACE, EM 1110-2-1913



PEN 1 – Landward Toe



PEN 1 – Landward Toe



PEN 2 – Riverward Toe



PEN 2 – Landward Toe



PEN 2 – Crest Boring

