

For Ramp A5	Job no. 49633	Sheet no.
Made by LER	Checked by KDG	Backchecked by LER
Date 11/28/11	Date 11/29/11	Date 11/29/11

Abut. Modification - Pile Layout

The contractor has proposed to modify the pile layout such that the front and back rows of piles will be in-line (i.e. not staggered).

The current design ignored the stagger, therefore there will be no changes required to no. piles or est. pile length.

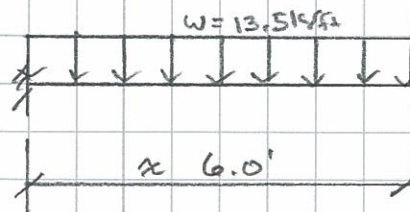
Shifting the front row of piles towards the west creates a larger cantilever on the east end of the abutment footing.

The girder reaction at this end aligns with the ϕ of the outermost set of piles.

Verify that the footing reinforcement will be adequate to support the DL of the abutment.

From the abut. design:

$$\begin{aligned} \text{Abut. DL} &= 10.7 \text{ k/ft} \\ \text{A.S. DL} &= \frac{2.8 \text{ k/ft}}{13.5 \text{ k/ft}} \end{aligned}$$

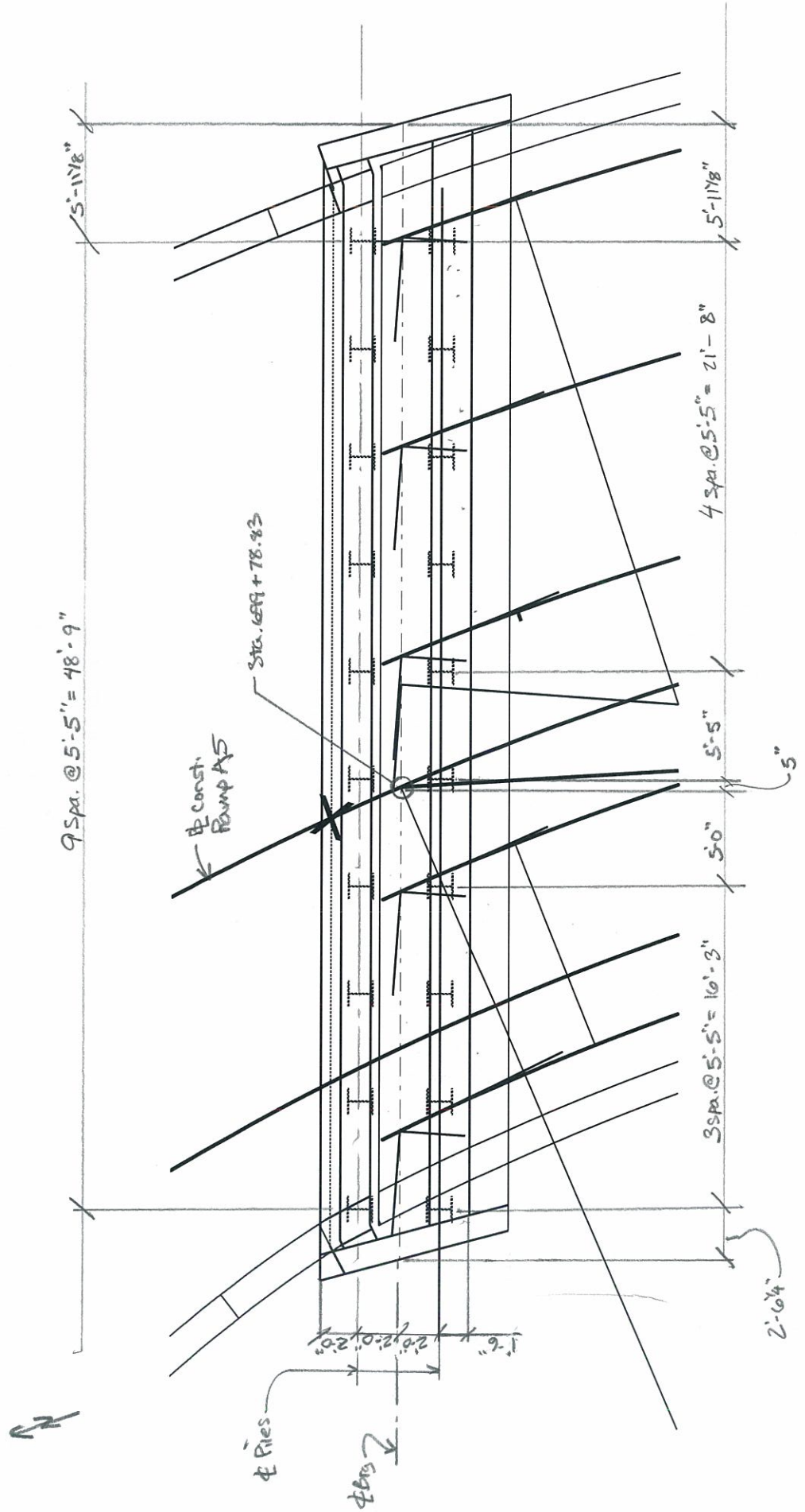


$$\begin{aligned} M &= \frac{1}{2} w l^2 = \frac{1}{2} (13.5) (6.0)^2 \\ &= 243 \text{ k}\cdot\text{ft} \end{aligned}$$

$$M_u = 1.25 (243) = \underline{304 \text{ k}\cdot\text{ft}}$$

$$\phi M_n = 770.8 \text{ k}\cdot\text{ft} \text{ (from design calcs.)}$$

OK



Ramp A5 - Abutment Pile Layout

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