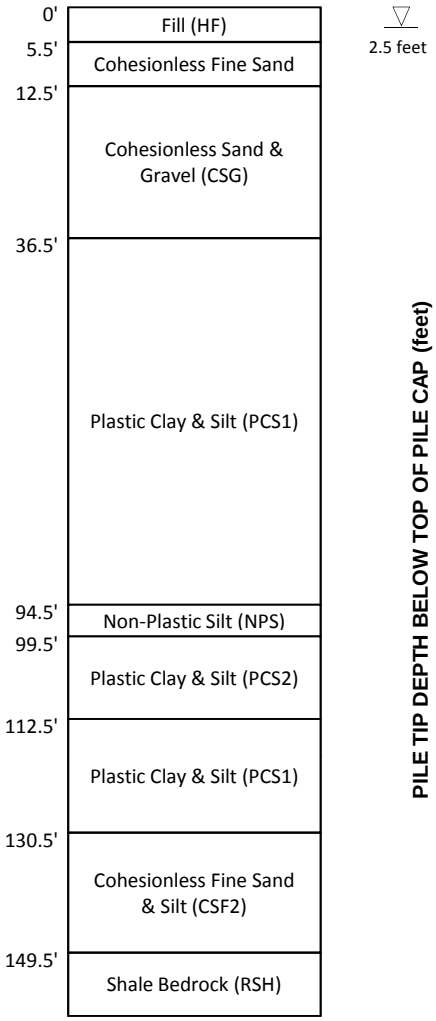
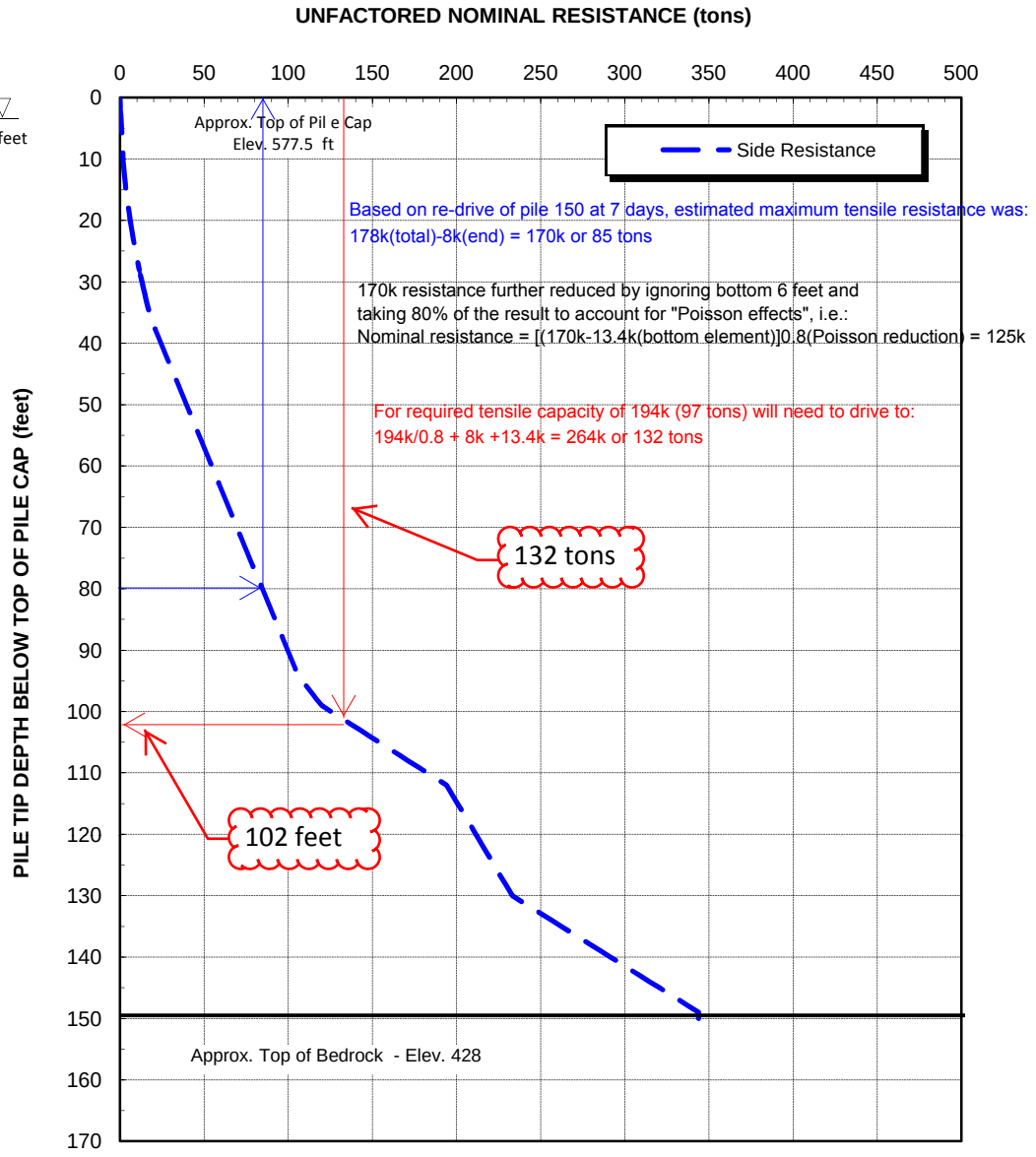
ASSUMED SUBSURFACE PROFILE

Based on Nearby Explorations:

B-039-1-10, B-039-0-09





NOTES:

1. The analyses were performed based on guidelines included in the AASHTO LRFD Bridge Design Specifications (Fifth Ed., 2010), ODOT Bridge Design Manual (2007 w/ updates through 10/15/10) and our experience. The analyses are based on a single pile and do not consider group action of closely spaced piles (closer than 2.5 pile widths, center to center). Once final pile group sizes and spacings are determined, the axial capacity of the pile group should be evaluated.
2. Total pile capacity is a summation of its side and base resistances. Unfactored nominal resistances shown on plots above are to be multiplied by the appropriate resistance factors (RFs). Per the ODOT Bridge Design Manual, a minimum of two dynamic tests are required per each pile size at each structure, and one static load test is required when total pile length for individual structure exceeds 10,000 ft (one additional static test required for every additional 10,000 ft of pile). Assuming that piles are installed according to CMS 507 and CMS 523, an RF of 0.70 may be used. Alternatively, if dynamic testing is performed in accordance with Section 10.5.5.2.3 of LRFD Specifications, Strength Limit State RF = 0.65 for side and base resistance is appropriate. Higher RFs may be used with static load testing (See Section 10.5.5.2.3 of LRFD Specifications). Without dynamic or static testing, an RF of 0.45 should be used for side and base resistance at the Strength Limit State. Resistance (in compression) of piles driven to refusal (20 blows per inch) on bedrock is governed by the Structural Strength Limit State (RF = 0.6). An RF of 0.35 should be used for uplift resistance at the Strength Limit State. For the Extreme Event Limit State, an RF of 1.0 should be used for base and side resistance, and an RF of 0.8 should be used for uplift resistance.
3. Analysis does not consider any sesimic strength reduction.
4. Downdrag loads due to potential settlement resulting from placement of fill have not been considered.

I-90 Innerbelt CCG1
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ESTIMATED AXIAL PILE UPLIFT RESISTANCE HP12X53 H-PILE GREEN BULKHEAD EAST BANK

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FIG. 2