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From: Gregory E. Sanders
Sent: Friday, October 05, 2018 11:19 AM
To: BRPM; BRSLE; BRSSE; BRSD; BRLLD
Subject: Development Section Bulletin No. 18-01-DSB-CPT Pile Capacity Graphs for CIP Friction Piles

<<Development Section Bulletin>>

No. 18-01-DSB-CPT Pile Capacity Graphs for CIP Friction Piles
Contact: Development Section
Effective: Immediately

CPT pile capacity graphs for anticipated/proposed CIP friction piles are now provided in the Foundation Investigation Geotechnical Reports (FIGR) on a trial basis. Pile capacity graphs are given in LRFD format showing factored pile geotechnical capacity with depth using different factored resistances for side friction and end bearing. They may be utilized for preliminary pile design when estimating a pile embedment length for cost estimating. Only pile geotechnical axial capacity is considered in these graphs. Many other pile conditions related to its geotechnical loading are not considered in these capacity graphs like lateral loading, scour, prebore, pile stability, long-term or worst case water elevations, downdrag, and minimum tip penetration.

Preliminary pile embedment length may be estimated using methods ranging from guesstimating based on engineering judgment when a small number of piles are required to a more accurate estimate of pile length based on estimated axial pile loads when a large number of piles are required.

CPT pile graphs may be used to determine the geotechnical axial capacity as part of final pile design. In fact, final pile design should validate the legitimacy of estimating the preliminary pile embedment length using the CPT pile graphs. But, because of other pile loading conditions as described earlier and the possible different limit states with different resistance factors, a refined geotechnical and structural analysis of CIP pile loadings is required for final pile design.

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