HELICAL
Geotechnical Design/Build

WORKING PLATFORMS

PART II OF III: A QUCIK GUIDE FOR GEOTECHNICAL CONSULTANTS

This document is a follow-up to our prior Owner/Contractor-focused narrative Planning for Safe and Productive Sitework Working Platforms Part I: Must-Know Fundamentals for Owners and Contractors, which addresses the importance of safe working subgrades, or "Working Platforms". That narrative can be found here, including the following excerpt, which serves as a good introduction for this piece.

Planning for Safe and Productive Sitework Working Platforms Part II: The Project Geotechnical Consultant's Role is Critical.

"Stable Working Platforms are essential for safe, productive working conditions. In particular, inadequate subgrade conditions are common on piling and ground improvement sites, which often have poor soil conditions at shallow depths. These soil conditions are often not suitable for construction loads imparted by cranes, piling rigs, concrete trucks, and other heavy construction traffic. Even lighter equipment, such as lulls, can have problems traversing a poor Working Platform. Unstable Working Platforms can cause equipment/rig instability and tipping, which can lead to serious injury."

A lull is tipped over after attempting to traverse an unstable Working Platform.

Since Working Platforms consist of geo-materials (i.e. existing site soils, perhaps imported soils/stone, and perhaps geosynthetics), it begs the question: "When and how should the project geotechnical consultant be involved?" Our answer: "Early and at every opportunity, starting with the geotechnical report - it's the right thing to do!"

Working Platforms (WPs) are a geotechnical matter, similar to foundation support, slab/pavement support, lateral earth pressures, excavation support, fill compaction, and other geotechnical design and construction considerations. As such, WPs should be addressed in the geotechnical report and specifications (or clearly identified as an important consideration at a minimum), especially for piling and ground improvement projects where prevailing subgrade conditions may be poor and large equipment is often required.

ADDRESSING WORKING PLATFORMS IN THE GEOTECHNICAL DOCUMENTS HELPS ACCOMPLISH TWO IMPORTANT NEEDS:

1. It meets local practice of identifying key geotechnical considerations within the project documents.
2. It proactively raises awareness to a possible safety (and cost) issue early in the life of a project, especially if it is addressed in the geotechnical report which is typically one of the earliest project documents distributed to contractors.

Two Geopier® GeoConcrete® Column (GCC) rigid inclusion crews operate on a well-prepared Working Platform.

Thus, when a project is ready for pricing, WP considerations will be established within the project framework for all stakeholders to contemplate, including the General Contractor, Site Contractor, and Geotechnical Contractor. It helps ensure that contractors begin planning and budgeting for safe and productive working conditions early in the project and helps avoid WPs becoming an afterthought further down the road. As described in our prior Planning for Safe and Productive Sitework Working Platforms Part I: Must-Know Fundamentals for Owners and Contractors, this planning should include consultation with the Owner's geotechnical consultant to assist with WP design. Their recommendations may include feedback on dewatering, material type, thickness, and possibly geosynthetic reinforcement.

During construction, on-site observation and documentation of WP preparation by the project geotechnical consultant is important to help ensure consistency with the project planning phase. The geotechnical engineer's presence, observation, and documentation of WP preparation and maintenance is consistent with other geotechnical construction activities such as excavation support, ground improvement, pile installation, and subgrade preparation.

- In summary, early involvement by the project geotechnical consultant is important to help ensure safe, productive Working Platforms. Early communication and coordination are essential to help ensure that proper Working Platform measures (and associated costs) are implemented.

- For more information on sitework Working Platforms, view the EFFC/DFI Guide to Working Platforms. We would once again like to acknowledge and thank the International Association of Foundation Drilling (ADSC) for their ongoing efforts in championing this important safety matter at the regional and local levels. Thanks for your leadership EFFC, DFI and ADSC.