



HELICAL

Geotechnical Design/Build

WORKING PLATFORMS

PART I OF III: A QUICK GUIDE FOR OWNERS AND CONTRACTORS

This document addresses a critical site safety and operational issue that is often overlooked during project planning and procurement. Proper design and construction of a stable working subgrade, or “Working Platform”, is essential for safe, productive working conditions.

Planning for Safe and Productive Sitework Working Platforms Part I: Must-Know Fundamentals for Owners and Contractors.

A critical site safety and operational issue that is often overlooked by contractors is the proper design and construction of a stable working subgrade, or “Working Platform”. 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 for concrete formwork is stuck after attempting to traverse an unstable Working Platform.



► Accident Involving a Piling Rig
Image source: Guide to Working Platforms By the Joint EFFC/DFI Working Platform Task Group 1st Edition December 2019

After numerous serious accidents attributed to inadequate Working Platforms, industry trade organizations at the national level recognized the critical nature of addressing Working Platform deficiencies. A joint effort between EFFC/DFI/ADSC developed thorough guidelines and recommendations detailing Working Platform design and performance. This document is intended to provide a high-level review of Working Platforms. Much greater detail can be provided by reviewing the reference guidelines, which can be found [here](#).



The Owner (via their General Contractor or Construction Manager) is responsible for providing safe working conditions for its subcontractors. Safe working conditions include a Working Platform consisting of a safe, dry, stable subgrade from which site construction activities can be executed. If early site construction activities include geotechnical construction such as pile driving/drilling or ground improvement (which are likely indicative of poor site soils), special considerations for the Working Platform are likely required.

Prior to sitework mobilization, a Working Platform (WP) plan should be developed by the General Contractor (GC) and the Owner's geotechnical consultant based on the site-specific geotechnical conditions and anticipated site-specific equipment, such as excavators, drill rigs, lulls, pile driving rigs, and ground improvement rigs. At a minimum, the plan should include:

1

A grading sketch designed to shed precipitation and eliminate the potential for pooling/puddling during heavy rain events.

2

A dewatering plan to maintain surface water (and groundwater levels if groundwater is shallow) sufficiently below the WP design elevation.

3

Depending on existing soil conditions at WP elevation, some WP designs may require the placement of well-graded gravel or crushed aggregate. In rare cases, layers of geogrid or geotextile reinforcement may also be necessary. If so, the WP design should include the thickness, gradation, grid specification, grid spacing, and compaction requirements for the gravel/aggregate.

4

A plan for inspecting and correcting local WP deficiencies if they are encountered during sitework.

In order for the GC to develop an effective WP design, they must know the details of the site equipment that will require support (based on the specified installation techniques) and should solicit equipment specifications from bidding site subcontractors. The equipment specifications should include the track/tire contact area and pressure for fully loaded (i.e. worst case) operating conditions. Site subcontractors play a critical role in this regard and need to provide concise information. Further consultation with the Owner's geotechnical consultant may also assist with Working Platform design.



A draft WP plan should be distributed to all sitework subcontractors prior to final bid preparation to help ensure complete and consistent subcontractor bids, including possible cost premiums associated with WP preparation. For example, bidding site contractors need to know whether well-graded gravel or crushed aggregate will likely be required. After the project is awarded to site subcontractors, the final WP plan should be distributed prior to sitework mobilization to help ensure safe working conditions. These simple, early measures will result in a stable WP and help ensure safe working conditions for workers.



▶ A Geopier® Rammed Aggregate Pier® crew operates on a well-prepared Working Platform

▶ In summary, a well-prepared Working Platform is critical to help ensure safe, productive working conditions for all workers. Early communication and coordination are critical to help ensure that proper Working Platform measures (and associated costs) are implemented.

▶ For more information on sitework Working Platforms, refer to the [EFFC/DFI Guide](#) to Working Platforms. We would 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!

