Dynamic Load Testing Services

**Benefits of Dynamic Load Testing**

GRL Engineers analyze dynamic measurements from an impact event delivered by an APPLE Load Testing System modular ram or pile hammer to provide:

- Shaft, Toe, and Total Mobilized Capacity
- Shaft Resistance Distribution
- Simulated Static Load Test Load-Movement Curve

**What is Dynamic Load Testing**

Dynamic Load Testing is a fast, reliable and cost effective method of evaluating foundation bearing capacity. GRL engineers can perform Dynamic Load Testing on driven piles, drilled shafts, auger-cast piles, micropiles, helical piles, and other cast-in-place foundations. It is often possible to conduct several dynamic load tests in a single day.

In addition to bearing capacity, Dynamic Load Testing provides information on the soil or rock resistance (shaft resistance distribution and end bearing) and evaluates the relative shape and integrity of the foundation element.

**Test Procedure**

Dynamic Load Testing requires applying an impact load to the top of the foundation from an APPLE Load Testing System modular ram, a pile driving hammer, or other specially-built device. In a dynamic load test, the weight of the ram is typically between 1% and 2% of the required test load. The guide frame is positioned over the foundation and evenly supported on the ground. After the drop weight is raised to the desired drop height, a hydraulic clamp first transfers the load to the frame and then releases it, causing a free ram fall. Force and velocity records are acquired as the APPLE ram impacts the pile or shaft.
**Data Analysis and Reporting**

Following dynamic load test data collection, selected test data is analyzed with the CAPWAP® software to determine the mobilized capacity, as well as the shaft and toe resistances, the shaft resistance distribution, and simulated load-set curve for the pile head and pile toe. For a Dynamic Load Test, a composite load-movement curve is generally prepared for each pile tested using CAPWAP analysis results from multiple blows. The GRL test engineer prepares a final report summarizing the dynamic load test details, test results, and pertinent recommendations.

For additional information on Dynamic Load Testing Service or any other GRL Engineers service please contact info@grlengineers.com or visit us at www.GRLengineers.com.