10Sept.08
Memo

To: ADSC SE Chapter
c/o Bruce Long, Long Foundations
From: Dan Brown
Re: Load Test Predictions for Nashville

After evaluating the boring information from three potential load test sites, the site at Long Foundations' yard was selected as the most suitable. Boring logs and core photos from this site are available separately. Rock was encountered about 16ft below grade and 20ft of core was obtained from each boring. Recovery was typically 90%+ in each, and RQD was 46%-65% as indicated on Figure 1 below. A total of 8 compressive strength tests were performed, indicating q_u values generally in the 5000-8000 psi range. The uppermost test in each was higher, suggesting a bit of harder caprock.

The plan for the first test is illustrated below on Figure 1. Note that the plan includes a 54" casing to rock, a 48" socket, and a 36" diameter "bearing seat" for the O-cell. This plan provides for the base resistance to act against a 36" diameter area and the side shear reaction to act against a 48" diameter socket. The end bearing can thus be mobilized by utilizing a larger diameter socket for side shear reaction. A second test is planned and the final dimensions of the second test socket will be established based on the results of the first test. The O-cells are in Nashville and ready for installation.

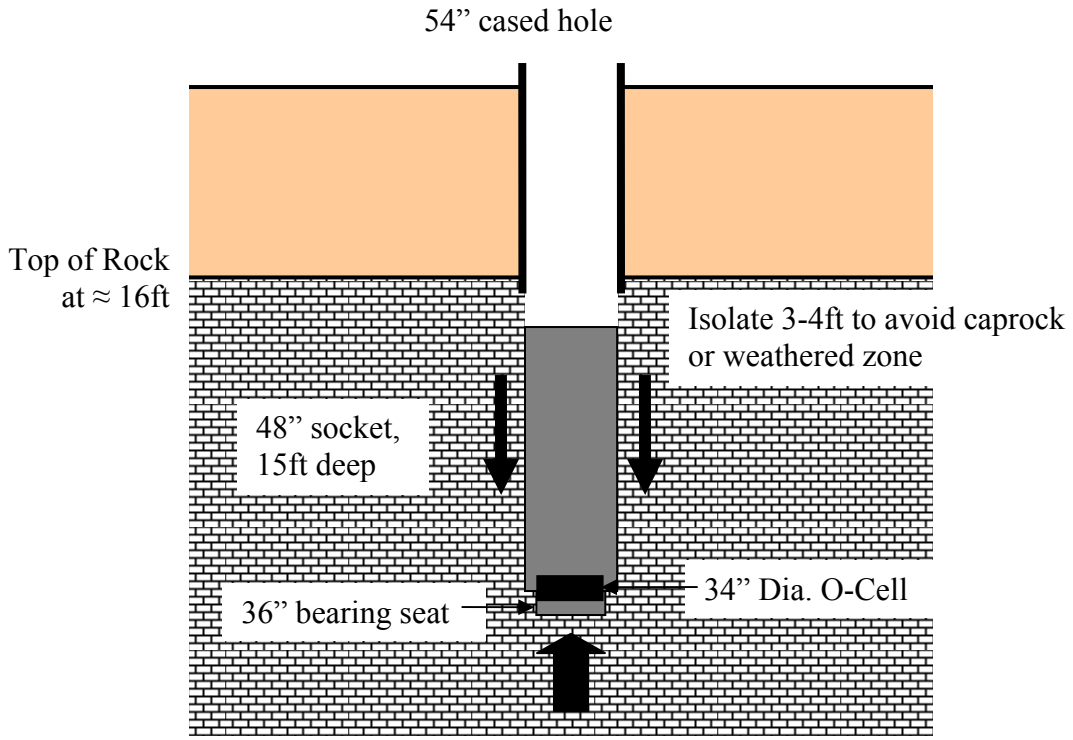

Figure 1 Schematic of Proposed Test No. 1, Nashville Site

I understand that the schedule is as follows:

- Sept. 16-17: Install Test Shaft No. 1
- Friday, Sept. 26: Perform Load Test No. 1 in morning
  Install Test Shaft No. 2 in afternoon
- Friday, Oct. 3: Perform Load Test No. 2
  Discuss Results at ASCE meeting in Smyrna

I understand that we will have a prediction contest on the first test and the ADSC or Loadtest (or both) are going to have fabulous prizes for the winners? We should also have one on the second test, and maybe we'll all do a lot better! Below is a form that interested participants can use, with several things to predict. Note that the O-cell has a 6000 kip capacity at 10,000 psi, but often can be loaded to 15,000 psi (9000 kips) before the seals let go.

1. Maximum average unit base resistance in the rock.

   Prediction:

2. Maximum average unit side shear in the rock socket.

   Prediction:

3. Unit base resistance at ½ inch displacement.

   Prediction:

Name: