

**Report Review**  
**GEOTECHNICAL REPORT OF SAMANGAN'S 50 BED HOSPITAL, CH08-0003-SC**  
**report dated April 12, 2010**  
**WO-A-0028**

Comment #	Reviewer	Reference	Comment	Response Code	Response	Back-Check
<b>GEOTECHNICAL REPORT REVIEW</b>						
1	RT	page 18	The method of drilling or excavating the hole/ pit should be described in Section 5.			
2	RT	page 18	Backfilling of the pit should be described in Section 5.			
3	RT	page 19	There were no consolidation tests performed in Section 6.			
4	RT	page 17	For structural design of a hospital a design response spectra is required. Since the 2006 IBC the response spectra should be based on MCE ground motions. The report provides a PGA for 10% probability in 50 years which is not sufficient for developing a response spectra needed for the hospital design. The PGA, should be used for liquefaction or slope stability analyses, should they be needed. We recommend a maximum credible earthquake (MCE) be determined for the site.			
5	RT	page 17	Since this is an IBC defined critical structure we recommend a straightforward procedure for preparing an IBC-like response spectra. The design response spectra can then be determined as 2/3 of the response spectra. If this site were in the U.S., a site specific response spectra (not the standard IBC) would be needed which is a fairly significant undertaking.			
6	RT	page 20	The log should include descriptions of the soil types beyond the USCS classification. Items such as soil type (i.e. Clay) and modifiers (silty, sandy etc.) stiffness or density, moisture, color etc. should be included. Also the type of bedrock should be listed. SPT values should be recorded and presented for 6" intervals not 12" intervals			
7	RT	page 21	The bearing capacity calculations are correct, but do not take into account consolidation settlement of the foundation bearing material. Since there were no consolidation test performed the analysis is not sufficiently conservative to model actual foundation performance. We recommend an allowable soil bearing pressure of 3,000 psf for footings bearing at least 1 meter below the ground surface. For footings at a basement level we recommend an allowable bearing pressure of 4,500psf			

**Report Review**  
**GEOTECHNICAL REPORT OF SAMANGAN'S 50 BED HOSPITAL, CH08-0003-SC**  
**report dated April 12, 2010**  
**WO-A-0028**

Comment #	Reviewer	Reference	Comment	Response Code	Response	Back-Check
8	RT	page 21	Typical geotechnical foundation recommendations that are not included: minimum strip and column footing widths, conclusion on allowable settlement (3/4"), effect of wetting of foundation soils, reinforcing requirement for spanning soft footing areas (10'), lateral resistance of spread footing foundation systems, and need for a subsurface drainage system if the structure contains a basement level			
10	RT	page 24	This section is confusing and does not relate to IBC design methodology. We recommend using an allowable increase of 1/3 for bearing pressures under transient load combinations in accordance with IBC table 1804.2 note on page 346 of the 2006 code.			
11	RT	page 29	This section is confusing and does not relate to IBC design methodology for lateral loads for soil pressure. We recommend using an allowable increase of 1/3 for resisting lateral pressures under transient load combinations in accordance with IBC table 1804.2 noted on page 346 of the 2006 code. Ka should be calculated for the clayey sand material and result in an equivalent fluid pressure of 40 pcf. The Kp should be factored down to a lower value (200 pcf) to account for strain compatibility with the active earth pressure. The Ko is acceptable.			
12	RT	page 32	Section 14 states the foundation will be over-excavated a depth of 1 meter below the footing. The over-excavated area will be backfilled with silty gravel with sand compacted to a minimum of 95% of Maximum Modified Dry Density. This is a good idea. The excavation should extend at least 1 meter laterally beyond the footings.			
13	RT	Annex A	% particles should be reported to integer percentages (no decimals), water content should be reported to one decimal place, qa should be reported to the nearest 100psf			
14	RT	General	We have a comment on selection of values for Ss and S1. There were not values in the report we received. The Ss and S1 values can be taken directly from the recommended spectral analysis			
15	ABH	General	Geo Report: No significant issues with data, other than the fact that all data has been generated from a single test pit. This is statistically risky			
16	ABH	Water Test Results	Bacteria/Yeast count very high from well location PTTC - was the well purged adequately prior to sampling?			
17	ABH	Water Test Results	Why were there no tests for Zinc (+ Copper) from well location PTTC?			