1.4.1.a Deep Compaction (Vibro Compaction)

The Vibro Compaction technique, Fig. (1.22), is most suitable for medium to coarse grained Sand with less than 10 % material finer than 63 µm and clay content (particle size less than 0.002 mm) of less than 2%. Cohesive soils consisting of silt and clay material do not respond to vibratory compaction. The range of soils suitable for a vibratory technique is shown on, Fig. (1.19).

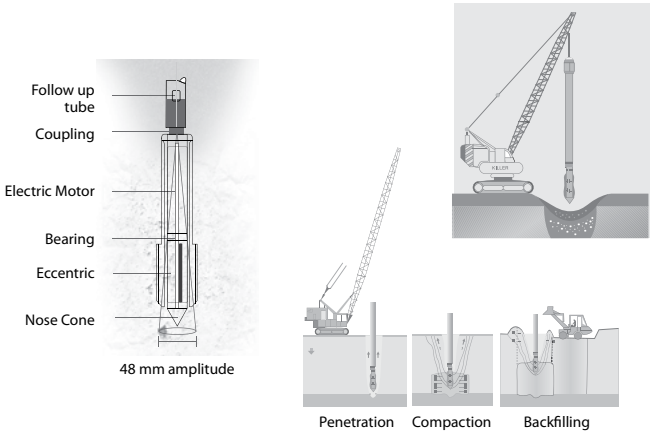

Fig. (1.22): Deep Compaction (Vibro Compaction) Technique

- The Vibro Compaction can increase the in situ density. Increase in soil density is achieved through compaction by an applied static or dynamic stress. The advantage of Vibro compaction is to mitigate liquefaction for depths up to 20.00m.
- The compaction pattern shall be proposed on a triangular pattern with maximum grid dimensions of (3.00 – 5.00) m or as recommended by the specialist. Smaller spacing may be tried in case of not reaching the specific test result. The re-compaction may be required in case of where compaction criteria have not achieved. Fig. (1.23) shows the vibro- compaction method statement.

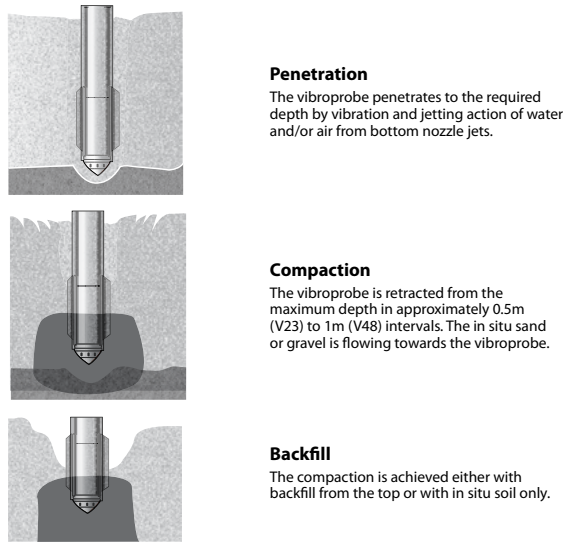

Fig. (1.23): Deep Compaction (Vibro Compaction) Method Statement

1.4.1.b Dynamic Compaction

Dynamic compaction, Fig. (1.24), involves lifting and dropping a heavy weight several times in one place. The process is repeated on a grid pattern across the site. Trials indicate that the masses in the range 5 to 10 tones and drops in the range 5 to 10m are effective for compacting loose sand.

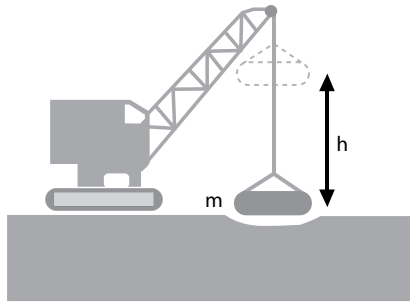

Fig. (1.24): Dynamic Compaction Technique