analysis shall indicate the areas prone to liquefaction and recommend the compaction of the location or parts thereof; based on that the secondary and local liquefaction areas inside limited depths shall be indicated, and an evaluation shall made on the potential implications resulting from the following factors:

2.1 Liquefaction causing settlement of foundations and footings near the surface.

2.2 Settlement of the surface.

2.3 low/reduced soil bearing capacity for foundations and footings near the surface.

2.4 low/reduced bearing capacity for vertical and lateral pile forces.

3. Calculation Assumptions:

3.1 Compliance with the following recommended procedures and applying the instruction manual for the analysis and reduction or liquefaction risks in the state of California (DMG Special Publication-117).

3.2 Earthquake loads (CSR) occurring in the soil due to earthquakes shall be calculated, earth movement factors shall be calculated by referring to structural conditions in article (54) of this regulation pertaining to seismic loads.

3.3 Soil strength (CRR) shall be calculated based on the results of site tests such as Soil Penetration Test (SPT) or Cone Penetration Test *(1996 NCEER workshop on Liquefaction Evaluation).*

3.4 Evaluation of liquefaction ability by calculating the liquefaction safety factor resulting from seismic load and soil strength where the liquefaction factor shall not be less than 1.25 or F.S = CRR/[(1.2-1.5)CSR.

3.5 Ground water level selected for liquefaction analysis shall be based on the peak of the deign lifespan to accommodate natural changes such as (Tide spring peak) and change of land use (increase of ground water levels due to irrigation or global warming).

3.6 Incase of liquefaction analysis based on Cone Penetration Test, the soil shall be classified based on (Robertson 1996) to determine the locations of high fineness content. Liquefaction analysis used shall be based on the standard penetration test or similar methods. In case of liquefaction analysis by electronic programs/software, copy of valid license of the software and updated instruction manual shall be submitted.

3.7 Amplification factor and Shell correction factor shall be calculated based on the type and classification of the soil.

3.8 Liquefaction can be calculated by methods approved n the mentioned codes.

4. Soil Improvement technologies