

Earth Mechanics, Inc.
March 20, 2018

General Geologic and Soils Information

The project site is located in the Los Angeles physiographic Basin which is a large, relatively flat, low-lying, coastal area surrounded by mountains on the north, east, and southeast. The western margin of the basin is bordered by the Pacific Ocean and the Palos Verdes Hills. The floor of the basin slopes gradually southwesterly from about 300 to 700 feet elevation along the margins of the surrounding hills to sea level along the coastline. The generally flat-lying nature of the Los Angeles Basin is disrupted by an alignment of northwest-southeast trending, low-elevation hills along the Newport-Inglewood Structural Zone. The areas on either side of the Newport-Inglewood Structural Zone are essentially flat and comprise the Downey-Tustin plain on the northeast and the Torrance Plain on the southwest. Major rivers within the basin are the Los Angeles, San Gabriel, and Santa Ana Rivers which enter the basin through gaps in the surrounding mountains and drain southerly across the basin floor.

The project site is located in the southeastern part of the Basin known as the Tustin Plain. Regional geologic studies indicate that Holocene-age, flood-plain sediments extend to a depth of a few hundred feet and overlie coarse sand and gravel of the Holocene-age Talbert aquifer. Quaternary-age sediments are about 2,000 feet thick in the region. The Quaternary sediments overlie Tertiary-age sedimentary rocks. The Mesozoic-age crystalline basement rocks are about 14,000 feet below the site.

The project site is relatively flat and situated at an elevation of about 100 feet. In the natural regime, the project site is within the Santa Ana River flood plain, and the portion of the river through the project area is confined to a concrete-lined channel.

Exploratory boreholes, drilled in years 2003 and 2004 at the project site, show that the area is underlain by non-indurated alluvial sediments ranging from clay to sand to gravel. The soils are Holocene-age flood-plain sediments of the Santa Ana River. Generally, the soils within the project consist of alternating, interbedded layers of sand with varying fines content, lean clay with varying amounts of sand, and few silt layers. The deeper sand layers include trace to moderate amounts of fine to coarse gravel.

Groundwater Information

Based on exploratory boreholes drilled in years 2003 and 2004, the groundwater elevation is shown to range between about +61 and +72 feet (about 25 to 30 feet below the Fairview Avenue grade).

Potential for Groundwater Dewatering

Foundation construction will likely involve driving concrete or steel piles, and therefore, with respect to driven pile construction, an extensive active dewatering program is not anticipated.

PRELIMINARY GEOTECHNICAL INFORMATION

Page 2

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Lowering the groundwater table locally, for a temporary period, to an elevation just below the pile cap elevation may be required (to construct the pile caps). If CIDH piles are used for deep foundations, pile construction will require the wet method (slurry) of construction or installing temporary casing. Whether slurry or casing is used, groundwater will be expelled from each pile hole due to slurry or concrete displacing the groundwater. The expelled groundwater will need to be temporarily stored, tested for contaminants, and properly disposed.