Appendix C: Geotechnical Data

Associated Soils Engineering May 31, 2013
John Whitney Proj. No. 13-6400

SIXTEENTH STREET LIVE/WORK PROJECT DUE DILIGENCE
PRELIMINARY GEOTECHNICAL REVIEW SUMMARY

General
▪1620-1644 Whittier Avenue, Costa Mesa, California
▪Proposed development- 69 attached live/work units; and 33 detached live/work units

Site Description
▪Site is comprised of 5.5 acres located on marine terrace at an approximate elevation of 105 feet above sea level. The surface gradient drops approximate 10 feet over 630 feet from north to south across the site. Four industrial buildings surrounded mostly by asphalt pavement currently exist on the site. Reports or maps describing the grading of the site are not known to exist.

Proposed Grading
▪Final grade elevations are unknown; assumed maximum cuts and fills will be less than 10 feet.

Investigation by Associated Soils
▪Review of permit files at the City of Costa Mesa Building Division
▪Subsurface exploration by ASE consisting of 9 hollow-stem borings to a maximum depth of 35.5 feet in the parking areas surrounding the existing buildings. The interior subsurface of the existing buildings were not explored.
▪Laboratory testing in progress including moisture/density, consolidation, shear strength, expansion index, corrosivity and R-value

Site Soils & Geology
▪Terrace Deposits: silty-sandy clay and silty sand, dense, dry to moist
▪Although not identified in the borings, undocumented fill may exist near the south property boundary.
▪Active Newport-Inglewood fault zone less than .5 miles to southwest
▪Groundwater not encountered in borings; reported by Ninyo & Moore to be at a depth of 50 feet; historically high groundwater level is estimated to be more than 30 feet below surface.

Remedial Grading
▪Demolish and remove from the site all existing structures, pavements, and utilities. The existence of any underground structures is unknown.
▪Complete removal of any fill materials encountered during grading
▪ Minimum surficial soil removals: the deeper of 3 feet from existing grades, 3 feet from bottom of proposed foundation, and 5 feet from final grades.
▪Excavations should be at least 5 feet from existing walls and buildings on or near property boundaries.
▪All site materials can be excavated with conventional earth moving equipment.

Remedial Grading (continued)
▪Shrinkage: 10% to 15%
▪Bulking: None

Foundation Design
▪Conventional foundations or post-tensioned slabs acceptable
▪Expansion potential: “Very Low” to “Low” (tested E.I. range of 11 to 39)
▪Differential settlement: up to 1 inch with a maximum angular distortion of 1/360.
▪For 3-story buildings, allowable bearing pressure is 1500 psf for continuous footings having a minimum 24-inch embedment and 30-inch square planar dimension.
▪Active pressure: 52 pcf for level backfill, 72 pcf for 2:1 backfill
▪Passive pressure: 200 pcf
▪Friction coefficient: 0.30
▪Sulfate exposure: “Moderate”

Surface Water Infiltration Rate
▪0.04 inches/hour