Converse Consultants
Geotechnical Engineering
Environmental & Groundwater Science
Inspection & Testing Services

GEOTECHNICAL INVESTIGATION REPORT

501/601 EAST COMPTON BOULEVARD MIXED USE PROJECT

501 AND 601 EAST COMPTON BOULEVARD
COMPTON, CALIFORNIA

CONVERSE PROJECT NO. 20-31-295-01

Prepared For:
KBK ENTERPRISES
Ms. Jamie Coleman
1300 Brighton Road, Suite 1
Pittsburgh, Pennsylvania 15233

Presented By:
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November 18, 2020

Converse Consultants
Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

November 18, 2020

Ms. Jamie Coleman
KBK Enterprises
1300 Brighton Road Suite 1
Pittsburgh, Pennsylvania 15233

Subject: **GEOTECHNICAL INVESTIGATION REPORT**
501/601 East Compton Boulevard Mixed Use Project
501 and 601 East Compton Boulevard
Compton, California 90221
Converse Project No. 20-31-295-01

Dear Ms. Coleman:

Converse Consultants (Converse) has prepared this geotechnical investigation report to present the findings, conclusions, and recommendations to assist with the design of the proposed 501/601 East Compton Boulevard Mixed Use Project located in Compton, California.

The purpose of the study was to investigate the geotechnical site conditions and provide recommendations for the 501/601 East Compton Boulevard Mixed Use Project at the above-referenced project sites. Our services were performed in accordance with our proposal dated September 21, 2020.

Based on our field exploration, laboratory testing, geologic evaluation and geotechnical analysis, the site is suitable from a geotechnical standpoint for the proposed project, provided our conclusions and recommendations are implemented during design and construction.

We appreciate the opportunity to be of service to KBK Enterprises. If you should have any questions, please do not hesitate to contact us at (626) 930-1275.

CONVERSE CONSULTANTS

Siva K. Sivathasan, PhD, PE, GE, DGE, QSD, F. ASCE
Senior Vice President / Principal Engineer

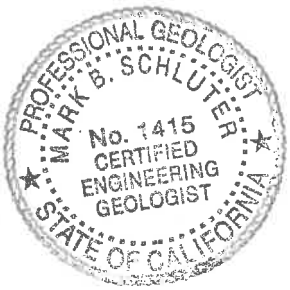
BA/MBS/SKS/jjl

PROFESSIONAL CERTIFICATION

This report for the proposed 501/601 East Compton Boulevard Mixed Use Project located in the City of Compton, California, has been prepared by the staff of Converse under the professional supervision of the individuals whose seals and signatures appear hereon.

The findings, recommendations, specifications, or professional opinions contained in this report were prepared in accordance with generally accepted professional engineering and engineering geologic principles and practice in this area of Southern California. There is no warranty, either expressed or implied.

In the event that changes to the property occur, or additional relevant information about the property is brought to our attention, the conclusions contained in this report may not be valid unless these changes and additional relevant information are reviewed, and the recommendations of this report are modified or verified in writing.



Mark B. Schluter, PG, CEG, CHG
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EXECUTIVE SUMMARY

The following is a summary of our geotechnical investigation, conclusions and recommendations as presented in the body of this report. Please refer to the appropriate sections of the report for complete conclusions and recommendations. In the event of a conflict between this summary and the report, or an omission in the summary, the report shall prevail.

- The proposed project development consists of construction of a new mixed use building at 501 and 601 East Compton Boulevard. The lot size of the proposed 7-story building at 501 address is approximately 42,000 square feet, and at 601 address is approximately 51,000 square feet. Height of building is limited to 85 feet above grade level. There is a planned basement level below grade for parking use. The bottom of basement level is approximately 15 feet below ground level.

- Six (6) exploratory borings (BH-1 through BH-6) were advanced within the project site on October 26, 2020 and October 27, 2020. All borings were advanced using a truck mounted drill rig with an 8-inch diameter hollow stem auger to a maximum depth of 51.5 feet below the existing ground surface (bgs). Each boring was visually logged by a Converse geologist and sampled at regular intervals and at changes in subsurface soils. Two (2) Cone Penetration Tests (CPT-1 and CPT-2) were advanced to depths of approximately 100 feet below ground surface within the project site on October 28, 2020 by Kehoe Testing and Engineering using a 30-ton (4 axle) CPT rig. The test holes were stopped at plan depths.

- The earth materials encountered during our investigation consist of existing fill soils placed during previous site grading operations and natural alluvial soils to a maximum explored depth of 100 feet bgs. Undocumented fills, ranging from 7 to 11 feet in thickness were encountered in the borings. Deeper artificial fill may exist at the site. The fill encountered consists primarily of silty sand and Sandy Silt. The alluvial soil deposits below the fill primarily consist of clay, silt, silty sand, sandy silt, and sand.

- Groundwater was encountered at depths ranging from 44.5 to 47.2 feet below ground surface in Borings BH-1 through BH-6. These groundwater depths correspond to approximate elevations of 13 to 17 feet. Based on review of *Historically Highest Groundwater Map*, Plate No. 1.2 in the Seismic Hazard Zone report for the South Gate 7.5-minute Quadrangle (1998), the historic high groundwater level is approximately 8 feet below existing ground surface. Groundwater level of 8 feet bgs is assumed for liquefaction analysis in this report.

- The project site is not located within a currently designated State of California Earthquake Fault Zone for surface fault rupture. No surface faults are known to project through or towards the site.

- The project site is located within a mapped Seismic Hazard Zone for liquefaction. The results of liquefaction analyses indicate the site soils are susceptible to liquefaction. The estimated potential seismically induced settlement ranges from approximately 1.2 to 1.5 inches with potential differential settlement ranging from approximately 0.6 to 0.75 inches in 30 feet. The project structural engineer should consider the effect of these settlements on foundation design.

- The pH value and chloride content of the sample tested is in the “non-corrosive” range. However, the resistivity is in the “severely corrosive” range to ferrous metals.

- We recommend the proposed 501/601 East Compton Boulevard Building be founded on pile foundations bypassing the upper liquefaction zone for sufficient structural support. In this case, slab should be designed as structural slab to minimize the adverse effect of differential settlement between foundation and slab. Flexible utility connections can be used to minimize the damage on utilities during seismic event. Due to groundwater encountered at depths between 44.5 feet and 47.2 feet bgs, and sandy soil layers present at various depths below ground surface, moderate to severe caving conditions should be anticipated during construction of drilled pier foundation.

- Remedial grading consisting of over-excavation and compaction is required for the surficial soils to provide structural support.

- The earth materials at the site are predominately silty sand, sandy silt, silt, sand, and clay. These material types should be excavatable with heavy-duty earth moving, drilling, and trenching equipment.

Results of our study indicate that the site is suitable from a geotechnical standpoint for the proposed development, provided that the recommendations contained in this report are incorporated into the design and construction of the project.

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1.0 INTRODUCTION

This report contains the findings and recommendations of our geotechnical study performed at the site of the new proposed 501/601 East Compton Boulevard Mixed Use Project located in Compton, Los Angeles County California, as shown on Drawing No. 1, *Site Location Map*.

The purpose of the study was to investigate the geotechnical site conditions and provide recommendations for the 501/601 East Compton Boulevard Mixed Use Project at the project sites.

This report is written for the project described herein and is intended for use solely by KBK Enterprises, City of Compton and their design team. It should not be used as a bidding document but may be made available to the potential contractors for information on factual data only. For bidding purposes, the contractors should be responsible for making their own interpretation of the data contained in this report.

2.0 SITE AND PROJECT DESCRIPTION

2.1 Site Description

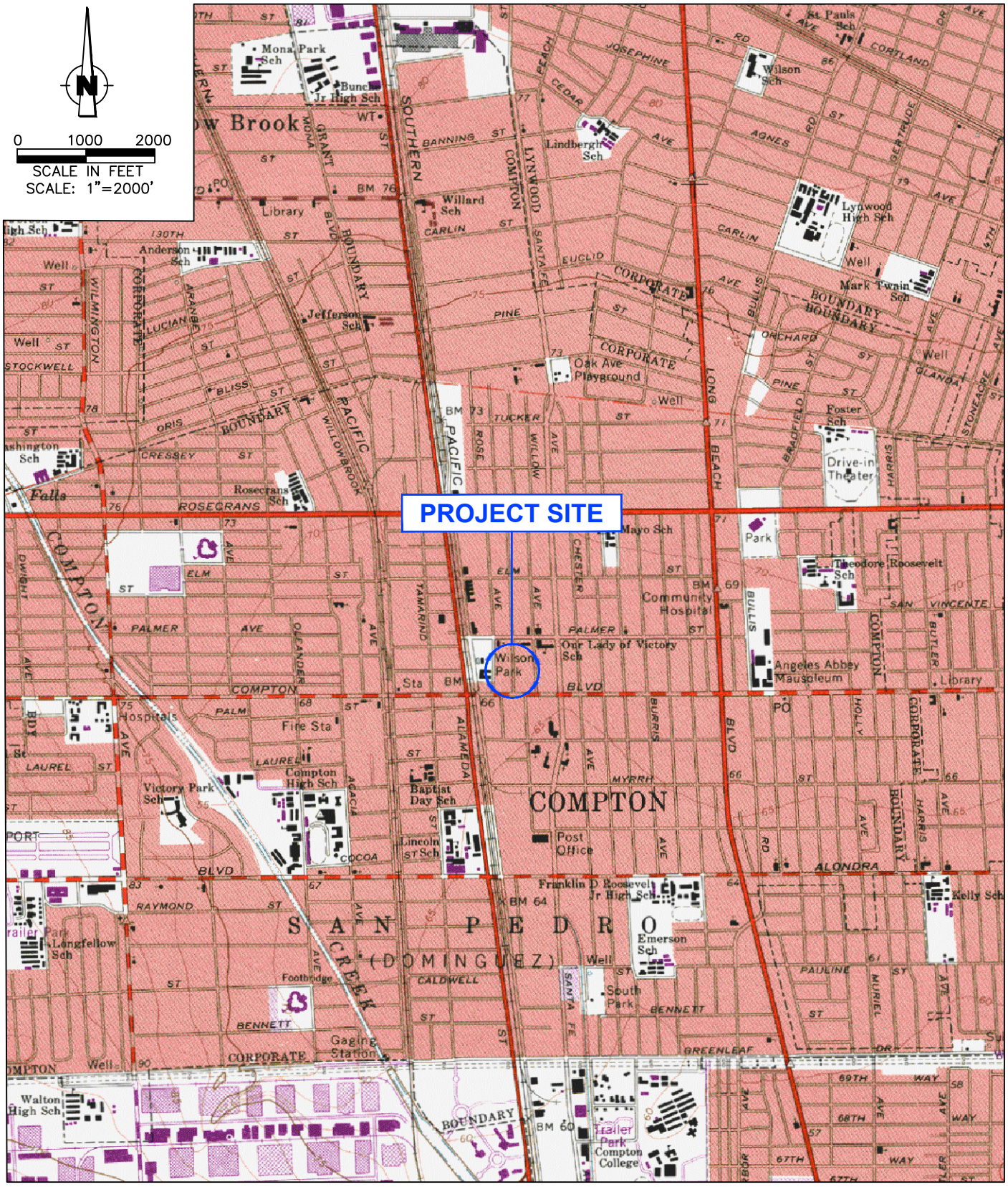
The proposed 501/601 East Compton Boulevard Mixed Use Building will be constructed in Compton, California. It is planned to be situated at 501 and 601 East Compton Boulevard as shown on Drawing No. 1, *Site Location Map*.

The project site is currently occupied by some one-story buildings. Older buildings which once occupied the site have been demolished and removed leaving floor slabs, footings and parking lot areas. The project site is located north of East Compton Boulevard, east of the North Spring Avenue and west of the North Santa Fe Avenue. The 601 block of building is going to be connected to 501 block crossing the North Willow Ave. The subject site is relatively flat and has surface elevations ranging from approximately 61 to 62 feet relative to mean-sea-level (MSL).

The site coordinates for the proposed Project are: 33.8964 degrees North Latitude, -118.217095 degrees West Longitude. The site coordinates were centered on the subject sites and used to calculate the earthquake ground motions.

2.2 Project Description

The proposed project development consists of construction of a new mixed use building at 501 and 601 East Compton Boulevard. The lot size of the proposed 7-story building at 501 address is approximately 42,000 square feet, and at 601 address is approximately 51,000 square feet. Height of building is limited to 85 feet above grade level. There is a planned basement level below grade for parking use. The bottom of basement level is



SITE LOCATION MAP

Mixed Use Project
501/601 East Compton Boulevard, Compton, CA

Project No.
20–31–295–01

Drawing No.
1

Converse Consultants

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approximately 15 feet below ground level. The upper floor levels will bridge over North Willow Avenue and connect two buildings. It is expected that the building foundations are to be deep foundations. The estimated maximum loads are as follows: Gravity loading on the basement walls footings or grade beam Dead Load = 6.3 klf, Live Load = 3 klf, Gravity Load on the basement column footings or pier caps: Dead Load = 270 kips, and Live Load=160 kips. These loads are Service Level loads and include Gravity loads only, and do not include seismic loads. The project site is shown on Drawing No. 2, *Site Plan and Field Exploration Map*.

3.0 SCOPE OF WORK

Our scope of work consists of the tasks described in the following subsections.

3.1 Site Reconnaissance

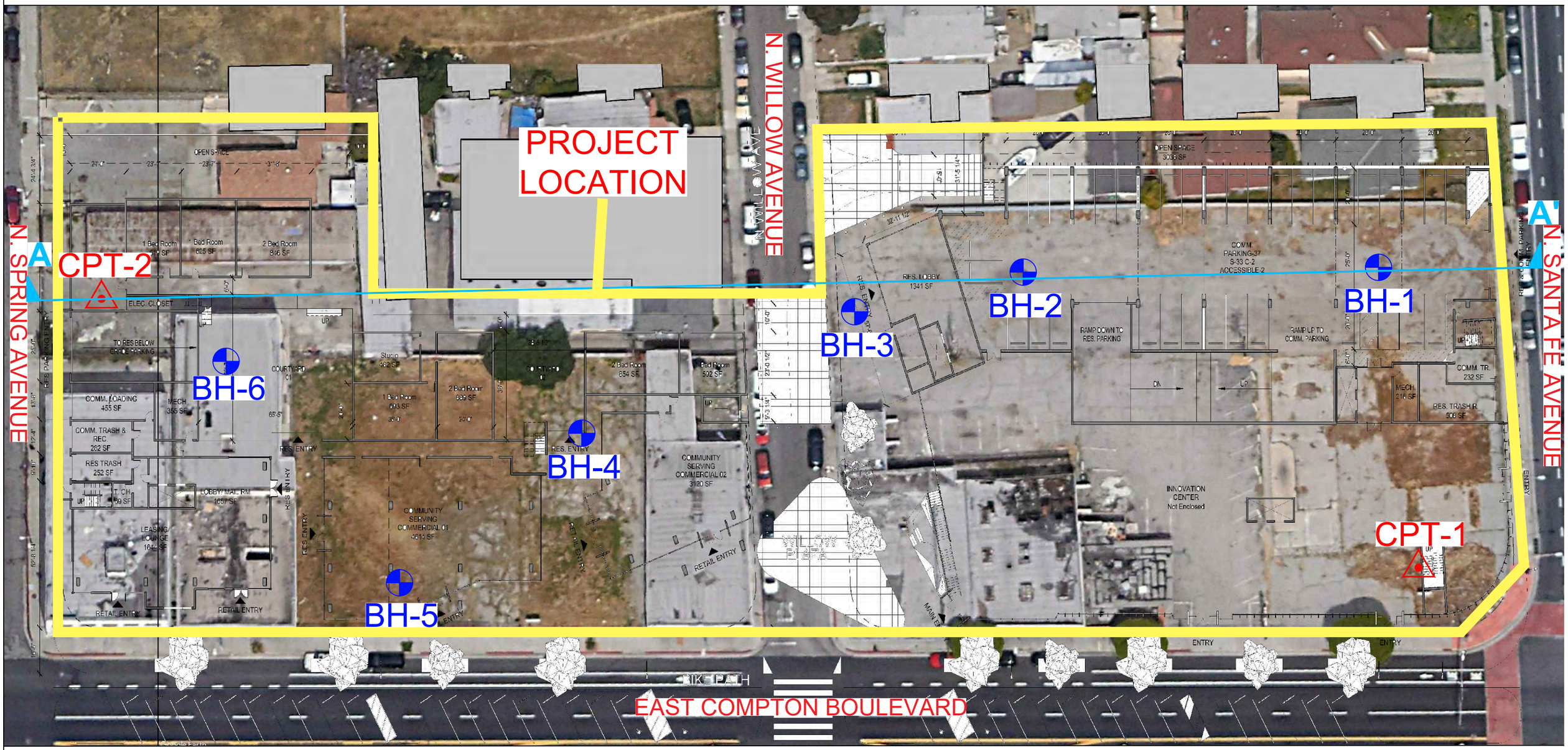
Our field exploration included a site reconnaissance by a member of the Converse staff on October 15, 2020. The purpose of the site reconnaissance was to observe surface conditions and to mark exploratory boring locations, so that drill rig access to all the locations was available. Underground Service Alert (USA) was notified at least 48 hours prior to drilling to clear the boring location of any conflict with existing underground utilities.

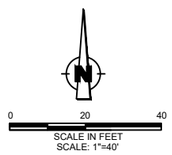
3.2 Subsurface Exploration

Six (6) exploratory borings (BH-1 through BH-6) were advanced within the project site on October 26, 2020 and October 27, 2020. All borings were advanced using a truck mounted drill rig with an 8-inch diameter hollow stem auger to a maximum depth of 51.5 feet below the existing ground surface (bgs). Each boring was visually logged by a Converse engineer and sampled at regular intervals and at changes in subsurface soils. Detailed descriptions of the field exploration and sampling program are presented in Appendix A, *Field Exploration*.

Relatively undisturbed California Modified Sampler (Ring samples), Standard Penetration Test samples, and bulk soil samples were obtained for laboratory testing. Standard Penetration Tests (SPTs) were performed in borings at selected intervals using a standard (1.4 inches inside diameter and 2.0 inches outside diameter) split-barrel sampler. Borings extending into groundwater or deeper than 10 feet were backfilled with cement grout and capped to match existing surface conditions.

Two (2) Cone Penetration Tests (CPT-1 and CPT-2) were advanced to depths of approximately 100 feet below ground surface within the project site on October 28, 2020 by Kehoe Testing and Engineering using a 30-ton (4 axle) CPT rig. The test holes were stopped at plan depths. The test holes were backfilled with bentonite crumbles, periodically hydrated with clean water, and tamped at the surface. The top portion of the test hole was then patched with asphalt patch, rapid set concrete or soil to match existing





SITE PLAN AND FIELD EXPLORATION MAP

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Mixed Use Project
501/601 East Compton Boulevard, Compton, CA

PROJECT NO. 20-31-295-01

DRAWING NO. 2

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surface conditions. The Cone Penetration Test (CPT) test logs are presented at the end of Appendix A. The Boring and CPT locations are shown on Drawing No. 2, *Site Plan and Field Exploration Map.*

3.3 Laboratory Testing

Representative samples of the site soils were tested in the laboratory to aid in the classification and to evaluate relevant engineering properties. The tests performed included:

- In situ moisture contents and dry densities (ASTM Standard D2216, and D7263)
- Soil corrosivity tests (Caltrans 643, 422, 417)
- R-value (ASTM Standard D2844)
- Fines Content/Passing No. 200 Sieve (ASTM D1140)
- Expansion Index (ASTM Standard D4829)
- Grain Size Distribution (ASTM Standard D6913)
- Atterberg Limits (ASTM Standard D4318)
- Maximum dry density and optimum-moisture content relationship (ASTM Standard D1557)
- Direct shear (ASTM Standard D3080)
- Consolidation (ASTM Standard D2435)

3.4 Analyses and Report

Data obtained from the exploratory fieldwork and laboratory-testing program were analyzed and evaluated with respect to the planned construction. This report was prepared to provide the findings, conclusions and recommendations developed during our study and evaluation.

4.0 GEOLOGIC CONDITIONS

4.1 Regional Geologic Setting

The 501/601 East Compton Boulevard Mixed Use Project site is located within the central portion of the Los Angeles Coastal Plain, a broad sediment filled basin located at the convergence of the Transverse Ranges and Peninsular Ranges geomorphic provinces of California. The Los Angeles River and Rio Hondo drainage tributary have deposited stream and flood sediments across the coastal plain during the Quaternary time (0-2.6 million years ago) to form a relatively flat and broad alluvial flood plain. Soils underlying the project site consist of fine to coarse grained silts, sands, and gravel sediments deposited over time by the Los Angeles River and Rio Hondo drainage tributaries. Theses river systems are now controlled by dams, debris basins and flood control channels that collect surface runoff and convey storm water runoff to the ocean.

Drawing No. 3, *Regional Geologic Map*, has been prepared to show the location of the 501/601 East Compton Boulevard Mixed Use Project site with respect to the regional geology.

4.2 Subsurface Profile of Project Site

The earth materials encountered during our investigation consist of existing fill soils placed during previous site grading operations and native alluvial soils to the depth explored. The project site area is covered by a layer of fill soils underlain by native alluvial soils. These earth materials consist primarily of silts, sandy silts, silty sands and clays. Each of these earth materials is described in more detail below.

3.2.1 Fill Soils

An undocumented fill layer of was encountered in all the soil borings drilled and sampled on October 26, 2020 and October 27, 2020 within the subject site. The depth of the existing fill ranged from approximately seven (7) feet to eleven feet (11) in thickness in boreholes BH-1 through BH-6. Deeper fill soils may be encountered at the project site. The observed fill soils consist primarily of silty sands and sandy silts with trace gravel.

3.2.2 Alluvium

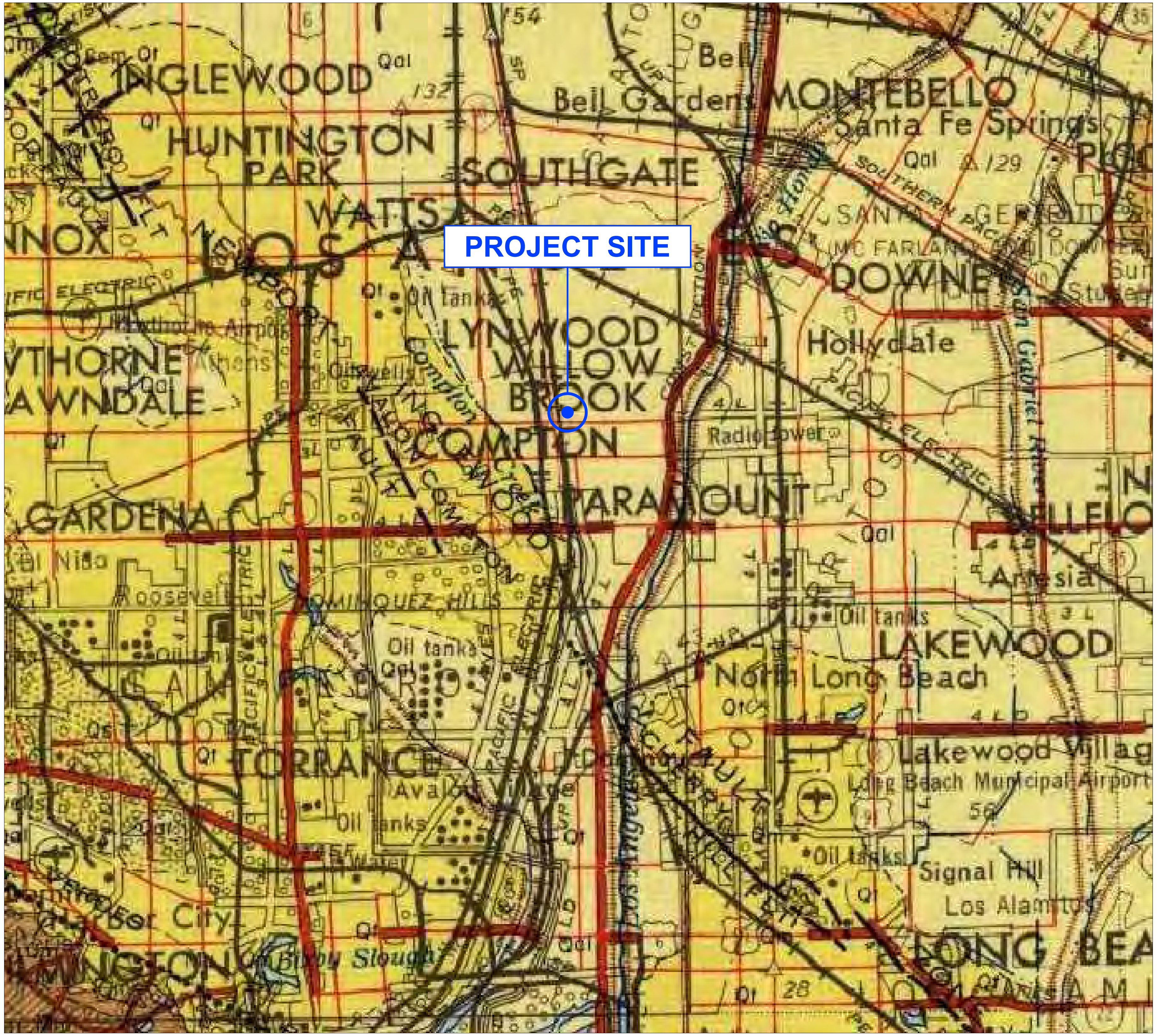
Alluvial deposits were encountered underlying the fill materials at the project site. The native alluvial soils encountered in the borings consists of silty sands, silts, sands, sandy silts, and clay deposits. The depth of the alluvium extended to the maximum explored depth of 100 feet.

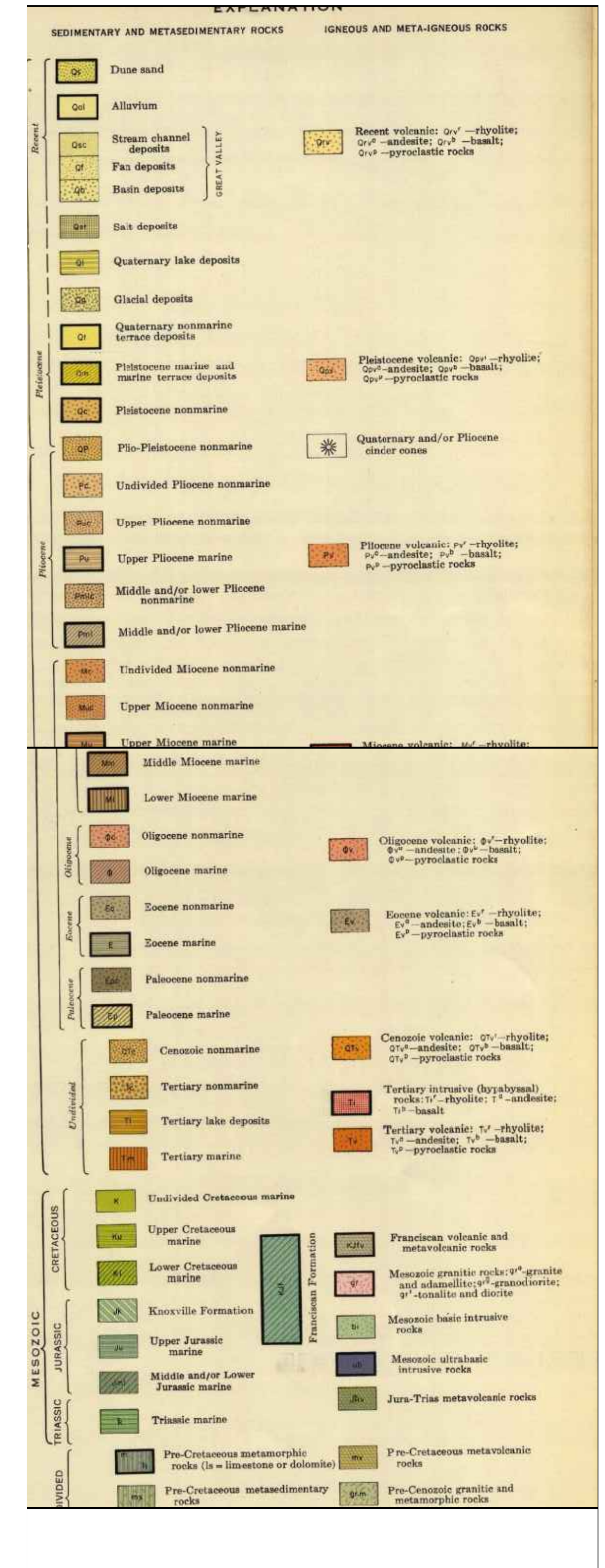
Drawing No. 4, *Geologic Cross Section A-A',* has been drawn across the subject site to illustrate the subsurface conditions beneath the project site. For additional information on the subsurface conditions, see the Logs of Boring Data in Appendix A, *Field Exploration*.

4.3 Groundwater

During current exploration, groundwater was encountered at depths that ranged from approximately 44.5 feet to 47.2 feet in deeper boreholes BH-1, BH-2, BH-4 and BH-6 during drilling. These groundwater depths correspond to approximate groundwater elevations of 13 to 17 feet. The California Division of Mines and Geology (CDMG) does show data for historically highest groundwater contours at approximately 8 feet below ground surface on Plate 1.2 of the Seismic Hazard Zone Report for the South Gate Quadrangle (1998). The regional groundwater table is not expected to be countered during planned grading and construction near surface, however, the groundwater table will be encountered during deeper pile foundation installation and construction and should be anticipated.

Wet weather periods may produce groundwater seepage along less permeable layers from infiltration of rainfall, surface flow, runoff and storm water recharge and should be





REGIONAL GEOLOGIC MAP

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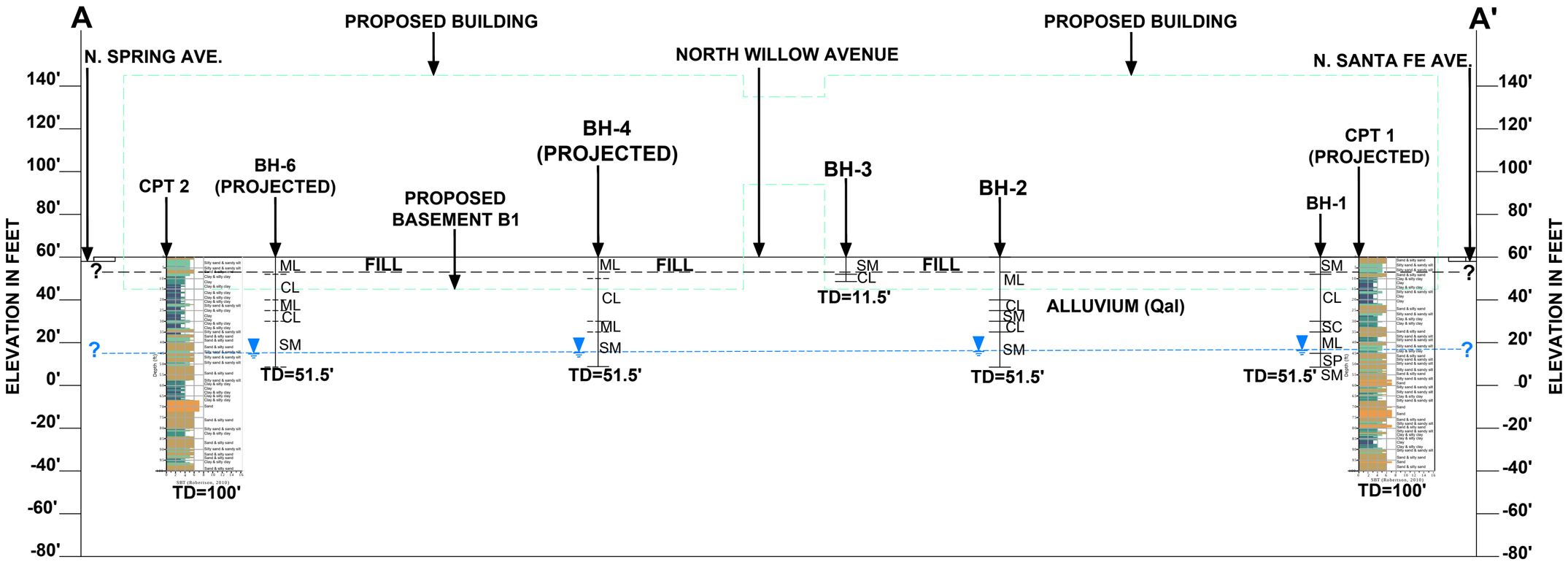
Mixed Use Project
501/601 East Compton Boulevard, Compton, CA

Project No.	Drawing No.
20-31-295-01	3



0 20 40
SCALE IN FEET
SCALE: 1"=40'

GEOLOGICAL CROSS SECTION A-A'

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MIXED USE PROJECT
501 / 601 EAST COMPTON BOULEVARD
COMPTON, CALIFORNIA

PROJECT NO. 20-31-295-01

DRAWING NO. 4

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anticipated during grading and construction. Local zones of perched groundwater may be present within the near-surface deposits due to buried alluvial channel features, channel remnants, local recharge conditions or during the rainy season. In general, groundwater levels fluctuate with the seasons. Groundwater conditions below any given site vary depending on numerous factors including seasonal rainfall, local irrigation, storm water recharge and groundwater pumping, among other factors.

4.4 Subsurface Variations

Based on results of the subsurface exploration and our experience with the subject area, some variations in the continuity and nature of subsurface conditions within the project site are anticipated. Because of the uncertainties involved in the nature and depositional characteristics of the earth material at the site, care should be exercised in interpolating or extrapolating subsurface conditions between or beyond the boring locations. If, during construction, subsurface conditions different from those presented in this report are encountered, this office should be notified immediately so that recommendations can be modified, if necessary.

5.0 FAULTING AND SEISMIC HAZARDS

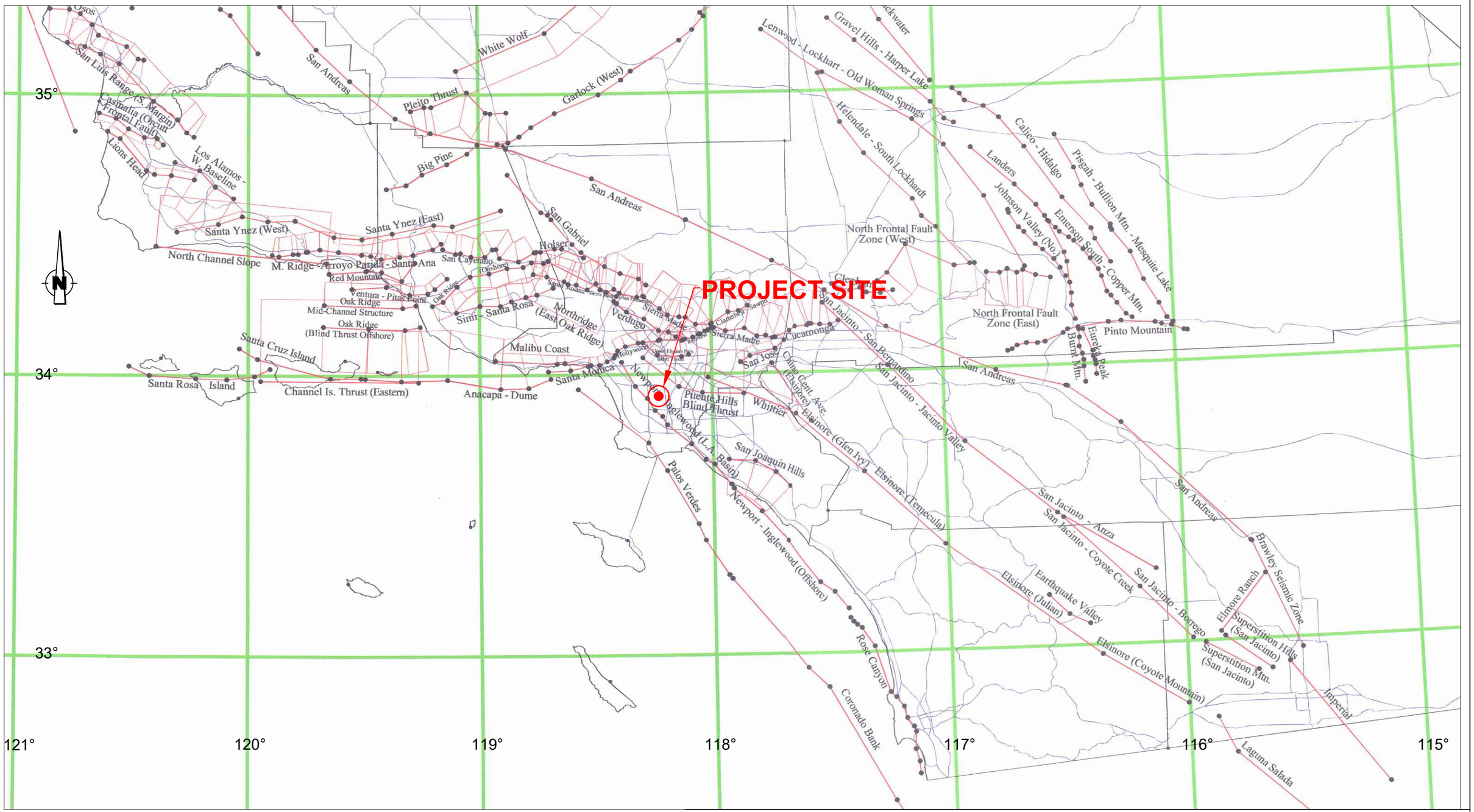
The project site lies along the central portion of the Los Angeles coastal plain in the Peninsular Ranges Geomorphic Province of California. The Peninsular Ranges province is characterized by northwest trending valleys and mountain ranges which have formed in response to regional tectonic forces along the boundary between the Pacific and North American tectonic plates. The Peninsular Ranges geomorphic province extends southward from the Transverse Ranges province at the north end of the Los Angeles basin to the southern tip of Baja California Peninsula. The geologic structure is dominated by northwest trending, right-lateral faults, most notably the Newport-Inglewood fault, Whitter-Elsinore fault, San Jacinto fault and San Andreas fault. The approximate location these local and regional faults with respect to the project site area shown on Drawing No. 5, *Southern California Regional Fault Map.*

Geologic hazards are defined as geologically related conditions that may present a potential danger to life and property. Typical geologic hazards in Southern California include earthquake ground shaking, fault surface rupture, liquefaction and seismically induced settlement, lateral spreading, landslides, earthquake induced flooding, tsunamis and seiches, and volcanic eruption hazard.

Results of a site-specific evaluation for each type of possible seismic hazards are discussed in the following sections.

5.1 Seismic Characteristics

The subject site is situated within a seismically active region. As is the case for most areas of Southern California, ground-shaking resulting from earthquakes associated with



REFERENCE: PORTION OF CGS 2002 CALIFORNIA FAULT MODEL MODIFIED FOR USE WITH FRISKSP AND EQFAULT BY THOMAS F. BLAKE, AUGUST 2004

FAULT SOURCES

BLIND THRUST FAULT, POLYGONS INDICATE RUPTURE PLANES AND DIP DIRECTION

SOUTHERN CALIFORNIA REGIONAL FAULT MAP

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Mixed Use Project
501/601 East Compton Boulevard, Compton, CA

Project No. 20-31-295-01
Drawing NO. 5
Date OCT 2020

nearby and more distant faults may occur at the project site. During the life of the project, seismic activity associated with active faults can be expected to generate moderate to strong ground shaking at the site.

The project site is not located within a currently designated State of California Earthquake Fault Zone (formerly Alquist-Priolo Special Studies Zones) for surface fault rupture. No surface faults are known to project through the site.

5.1.1 Newport-Inglewood Fault

The nearest State of California Earthquake Zone of Required Investigation is for the Newport-Inglewood fault zone, located approximately 2.5 miles west of the project site as shown on Drawing No. 5, *Southern California Regional Fault Map*. The Avalon-Compton fault segment of the Newport-Inglewood fault zone is mapped as an active fault trending northwestward on the eastern edge of the Inglewood Quadrangle (1999) and Torrance Quadrangle (1999) maps approximately 13,000 feet west of the project site. The Newport-Inglewood fault zone is the closest major active fault zone to the project site. The Newport-Inglewood fault is approximately 41 miles long on shore and extends northwest from Huntington Beach through Long Beach to Culver City and the Cheviot Hills. The Newport-Inglewood fault continues offshore to the southeast of Huntington Beach and makes landfall in La Jolla as the Rose Canyon fault in San Diego. The Newport-Inglewood fault is characterized by a series of uplifts and anticline hills including Newport Mesa, Huntington Beach Mesa, Bolsa Chica Mesa, Alamitos Heights and Landing Hill, Signal Hill, Reservoir Hill, Dominquez Hills and Baldwin Hills.

Several earthquakes have occurred along the fault zone including the March 10, 1933 “Long Beach” earthquake of M6.4, with its epicenter off Newport Beach, and smaller earthquakes at Inglewood on June 20, 1920 (M4.9) and May 17, 2009 (M4.7), Torrance on October 21, 1941 (M4.8), Gardena on November 14, 1941 (M4.8), and Newport Beach on April 7, 1989 (M4.7). These earthquakes show evidence of right-lateral strike slip focal mechanisms.

5.1.2 Puente Hills and Elysian Park Blind Thrust Faults

Potential for damage from earthquakes along a zone of north-dipping blind thrust faults in the Los Angeles basin was illustrated by the M5.9 Whittier earthquake event on October 1, 1987 and the M6.7 Northridge earthquake event on January 17, 1994. Blind thrust faults are low angle reverse faults which generally have no surface trace and express tectonic deformation as folding and uplift of ridges and hills. Examples of blind thrust fault landforms include the Elysian Hills, Repetto Hills, Montebello Hills and Puente Hills.

Details concerning the Puente Hills and Elysian Park thrust faults are limited by the fact that the thrust fault is buried below ground surface – thus the term “blind” thrust fault. Conventional fault finding trenches, boreholes and paleoseismic dating methods used at the surface have limited use for study of these deeply buried thrust fault structures. The geometry and location of the blind thrust fault structures and thrust ramps are based on

interpretation of oil well data, seismic and strong motion data solutions, high resolution geophysical data, paleoseismic studies and structural model analyses. Recent revisions to the fault parameter models have replaced the lower Elysian Park Blind Thrust Fault with the Puente Hills Blind Thrust and Upper Elysian Park Blind Thrust. Seismic hazard fault models for the Los Angeles basin and vicinity will continue to be refined as new information and technology develops and becomes available through time.

The Puente Hills Blind Thrust fault has been interpreted to be approximately 42 km long and 19 km wide with a depth range of 3 km to 13 km below ground surface. The thrust fault dips northward from the Montebello Hills and Puente Hills. Paleoseismic studies of the Puente Hills Blind Thrust have indicated the occurrence of at least four large Mw 7.2 to 7.5 earthquakes of this fault during the past 11,000 years.

Table No. 1, Summary of Regional Faults

Fault Name and Section	Approximate* Distance to Site (kilometers)	Slip Rate (mm/yr)	Slip Sense	Max. Moment Magnitude (M_{max})
Puente Hills (LA)	3.41	0.7	thrust	7.00
Elysian Park (Upper)	4.96	1.3	reverse	6.70
Hollywood	9.13	1	strike slip	6.70
Newport Inglewood Connected alt 2	9.2	1.3	strike slip	7.50
Raymond	10.73	1.5	strike slip	6.80
Santa Monica Connected alt 1	13.85	2.6	strike slip	7.30
Verdugo	14.08	0.5	reverse	6.90
Puente Hills (Santa Fe Springs)	18.38	0.7	thrust	6.70
Elsinore	20.77	n/a	strike slip	7.85
Sierra Madre Connected	21.09	2	reverse	7.30
Malibu Coast, alt 2	23.72	0.3	strike slip	7.00
Palos Verdes	24.5	3	strike slip	7.70
Puente Hills (Coyote Hills)	25.91	0.7	thrust	6.90
Anacapa-Dume, alt 2	26.25	3	thrust	7.20
Sierra Madre (San Fernando)	27.25	2	thrust	6.70
Clamshell-Sawpit	29.6	0.5	reverse	6.70
San Gabriel	31.67	1	strike slip	7.30
Northridge	32.37	1.5	thrust	6.90
San Jose	35.96	0.5	strike slip	6.70
Santa Susana, alt 1	38.32	5	reverse	6.90
Anacapa-Dume, alt 1	39.8	3	thrust	7.20
Chino, alt 2	48.27	1	strike slip	6.80
Chino, alt 1	48.32	1	strike slip	6.70
San Joaquin Hills	48.61	0.5	thrust	7.10
Simi-Santa Rosa	49.62	1	strike slip	6.90
Holser, alt 1	49.87	0.4	reverse	6.80

5.2 Seismic History

Drawing No. 6, *Epicenter Map of Southern California Earthquakes (1800–1999),* shows the mapped location of earthquake epicenters with magnitude 5.0 or greater in Southern California during the past 200 years. This historical seismicity map was prepared using the southern portion of Map Sheet 49, *Epicenters and Area Damaged by M≥5 California Earthquakes, 1800 – 1999, CGS, Toppozada and others 2000.*

5.3 Surface Fault Rupture

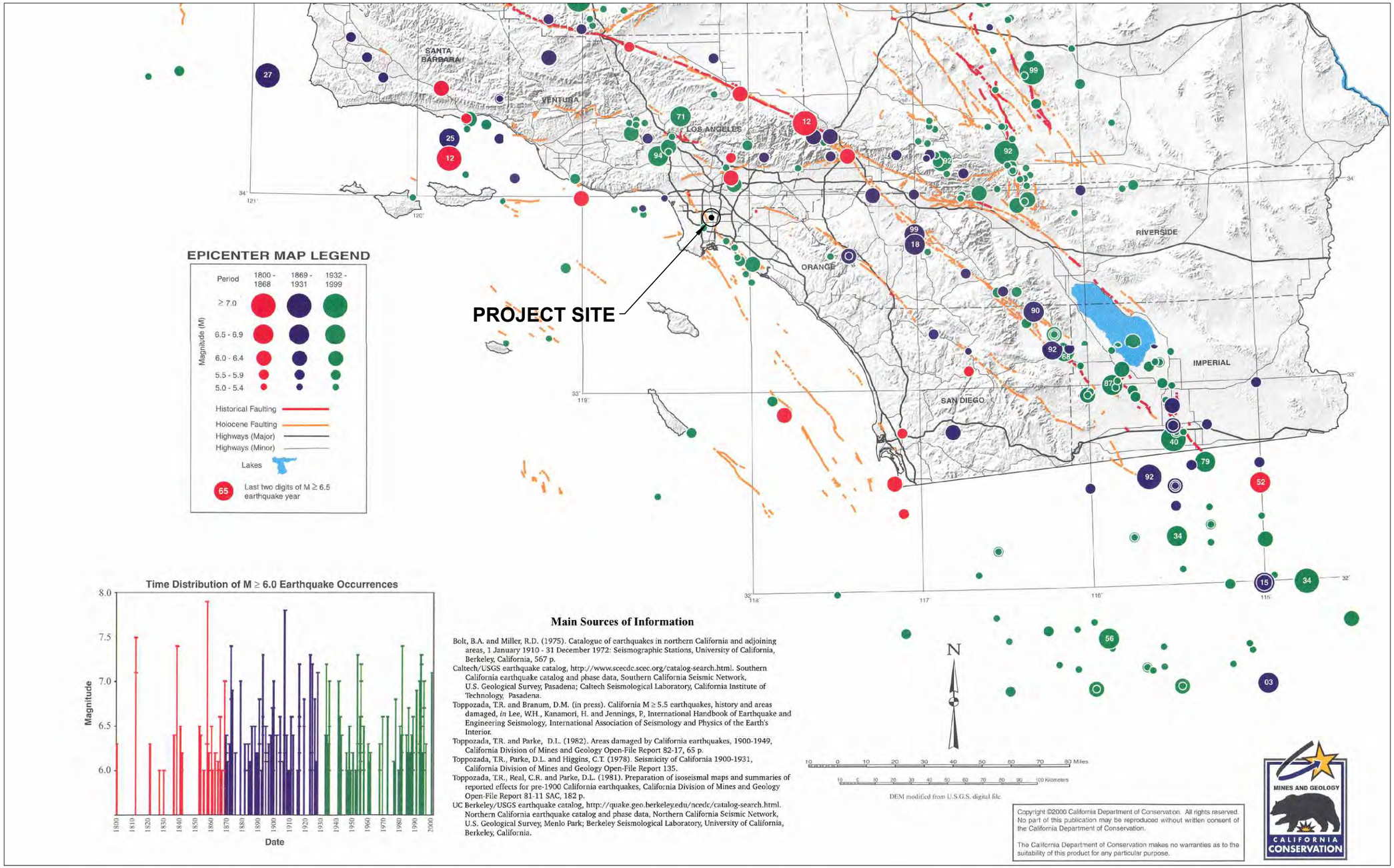
The project site is not located within a currently designated State of California Earthquake Fault Zone (formerly Alquist-Priolo Special Studies Zones) for surface fault rupture. The Alquist-Priolo Earthquake Fault Zoning Act requires the California Geological Survey to zone “active faults” within the State of California. An “active fault” has exhibited surface displacement with Holocene time (within the last 11,000 years) hence constituting a potential hazard to structures that may be located across it. Public school structures are required to be set-back at least 50 feet from an active fault. The active fault set-back distance is measured perpendicular from the dip of the fault plane. Based on a review of existing geologic information, no known active faults project through or toward the site. The potential for surface rupture resulting from the movement of the nearby major faults is considered remote.

5.4 Liquefaction and Seismically-Induced Settlement

Liquefaction is the sudden decrease in the strength of cohesionless soils due to dynamic or cyclic shaking. Saturated soils behave temporarily as a viscous fluid (liquefaction) and, consequently, lose their capacity to support the structures founded on them. The potential for liquefaction decreases with increasing clay and gravel content but increases as the ground acceleration and duration of shaking increase. Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within 50 feet of the ground surface.

The site is located within a potential liquefaction zone per the State of California Seismic Hazard Zones Map for the South Gate Quadrangle as shown in Drawing No. 7, *Seismic Hazard Zones Map*. Liquefaction analyses were performed using *CLiq, Version 2.3.1.15, 2018, by GEOLOGISMIKI* for the upper 100 feet below ground surface utilizing Cone Penetration Test locations CPT-1 and CPT-2. The results of the liquefaction analysis and a summary of the methods used are presented in Appendix C, *Liquefaction/Seismic Settlement Analysis*.

The results of liquefaction analyses indicate the site soils are susceptible to liquefaction. The estimated potential seismically induced settlement ranges from approximately 1.2 to 1.5 inches with potential differential settlement ranging from approximately 0.6 to 0.75 inches in 30 feet horizontal length. The project structural engineer should consider the effect of these settlements on foundation design.



REFERENCE: PORTION OF EPICENTERS AND AREAS DAMAGED BY M≥5 CALIFORNIA EARTHQUAKES, 1800-1999 CALIFORNIA DEPARTMENT OF CONSERVATION, MAP SHEET 49 DATED 2000.

EPICENTER MAP OF SOUTHERN CALIFORNIA EARTHQUAKES (1800-1999)

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Mixed Use Project
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Drawing No. 6

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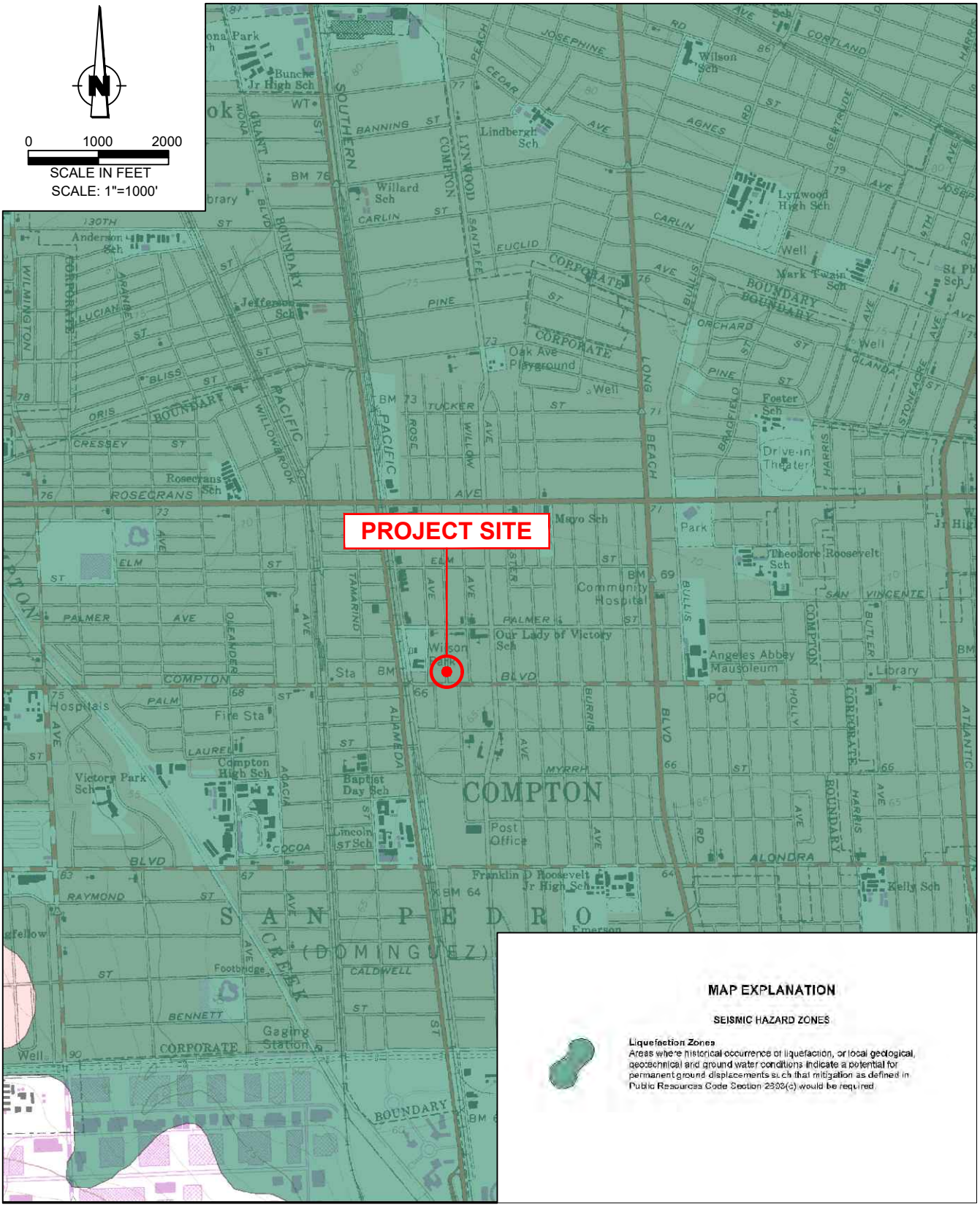

REFERENCE: SOUTHGATE 1999
SEISMIC HAZARD ZONES STATE OF CALIFORNIA

SEISMIC HAZARD ZONES MAP

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Project No.
20-31-295-01

Drawing No.
7

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5.5 Lateral Spreading

Seismically induced lateral spreading involves primarily lateral movement of earth materials due to ground shaking. It differs from the slope failure in that complete ground failure involving large movement does not occur due to the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks with predominantly horizontal movement of the soil mass involved. The topography at the project site and in the immediate vicinity of the site is relatively flat, with no significant nearby slopes or embankments. Under these circumstances, the potential for lateral spreading at the subject site is considered very low.

5.6 Seismically-Induced Slope Instability

Seismically induced landslides and other slope failures are common occurrences during or soon after earthquakes. The project site is also not shown with any earthquake-induced landslide areas due to the relatively flat ground conditions of the site topography. In the absence of significant ground slopes, the potential for seismically induced landslides to affect the proposed site is considered to be very low.

5.7 Earthquake-Induced Flooding

Review of the Flood Insurance Rate Map (FIRM), Map Number 06037C1815F, dated September 26, 2008, from the FEMA Map Service Center Viewer, indicates that the site is in an area designated as Zone X, “0.2% Annual Chance Flood Hazard”. Due to the absence of groundwater at shallow depths, distance of the subject site from large bodies of water and regional flood control structures, the potential for flooding at the subject site is considered low.

5.8 Tsunami and Seiches

Tsunamis are seismic sea waves generated by fault displacement or major ground movement. Based on the location of the site from the ocean (over 20 kilometers), tsunamis do not pose a hazard. Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Based on site location away from lakes and reservoirs, seiches do not pose a hazard.

5.9 Volcanic Eruption Hazard

There are no known volcanoes near the site. According to Jennings (1994), the nearest potential hazards from future volcanic eruptions is the Amboy Crater-Lavic Lake area located in the Mojave Desert more than 120 miles east/northeast of the site. Volcanic eruption hazards are not present.

6.0 SEISMIC ANALYSIS

The results of liquefaction analyses indicate the site soils are susceptible to liquefaction. Under this condition site class is classified as F. Per ASCE 7-16 section 20.3.1 a site-specific response analysis in accordance with ASCE 7-16 section 21.1 is required. In the following sections, we present seismic parameters for the project site.

6.1 CBC Seismic Design Parameters

For sites classified as Site Class F requiring site-specific analysis, the design spectral response acceleration at any period shall not be less than 80% of S_a determined for site class E (ASCE 7-16, section 21.3). General seismic parameters based on the 2019 California Building Code and ASCE 7-16 with Supplement 1 are calculated using the ATC hazard, *Seismic Design by location* website application and the site coordinates (33.8964 degrees North Latitude, 118.217095 degrees West Longitude). The seismic parameters are presented below.

Table No. 2, CBC Seismic Design Parameters

Seismic Parameter	Value
Site Class	F
Mapped Short period (0.2-sec) Spectral Response Acceleration, S_S	1.711 g
Mapped 1-second Spectral Response Acceleration, S_1	0.611g
Site Coefficient (from Table 1613.5.3(1)), F_a*	1
Site Coefficient (from Table 1613.5.3(2)), F_v*	4
MCE 0.2-sec period Spectral Response Acceleration, S_{MS}*	1.711 g
MCE 1-second period Spectral Response Acceleration, S_{M1}*	2.444 g
Design Spectral Response Acceleration for short period, S_{DS}*	1.141 g
Design Spectral Response Acceleration for 1-second period, S_{D1}*	1.629 g

*Per ASCE 7-16 section 21.3, these values are only used to check for the criterion of 80% exceedance for site-specific response MCE_R

6.2 Site-Specific Response Spectra

A site-specific response spectrum was developed for the project for a Maximum Considered Earthquake (MCE), defined as a horizontal peak ground acceleration that has a 2 percent probability of being exceeded in 50 years (return period of approximately 2,475 years).

In accordance with ASCE 7-16, Section 21.2 the site-specific response spectra can be taken as the lesser of the probabilistic maximum rotated component of MCE ground motion and the 84th percentile of deterministic maximum rotated component of MCE ground motion response spectra. The design response spectra can be taken as 2/3 of site-specific MCE response spectra but should not be lower than 80 percent of CBC general response spectra (section 6.1). The risk coefficient C_R has been incorporated at

each spectral response period for which the acceleration was computed in accordance with ASCE 7-16, Section 21.2.1.1.

The 2019 CBC mapped acceleration parameters are provided in the following table. These parameters were determined using the *ATC hazard by location Seismic Design Maps* website application, and in accordance with ASCE 7-16 Sections 11.4, 11.6, 11.8 and 21.2.

Table No. 3, 2019 CBC Mapped Acceleration Parameters

Site Class	F	Seismic Design Category	D
S_S	1.711	C_{RS}	0.909
S_1	0.611	C_{R1}	0.904
F_a	1	**0.08 F_v/F_a**	0.320
F_v	4	**0.4 F_v/F_a**	1.600
S_{MS}	1.711	T_0	0.286
S_{M1}	2.444	T_S	1.428
S_{DS}	1.141	T_L	8
S_{D1}	1.629		

A site-specific response analysis, using faults within 200 kilometers of the sites, was developed using the computer program EZ-FRISK Version 8.06 (Fugro, 2019).

The weighted mean maximum-rotated horizontal spectral acceleration values were computed by multiplying the weighted mean geometric spectral values derived from four next-generation attenuation (NGA) West 2 ground motion attenuation models by Abrahamson et al. (2014), Boore et al. (2014), Campbell and Bozorgnia (2014), and Chiou and Youngs (2014) with the scale factors provided in ASCE 7-16 Section 21.2. An average shear wave velocity at upper 30 meters of soil profile (V_{s30}) of 260 meters per second, depth to bedrock of with a shear wave velocity 1,000 meters per second at 700 meters below grade, and depth of bedrock where the shear wave velocity is 2,500 meters per second at 5,000 meters below grade were selected for EZ-Frisk Analysis.

The probabilistic response spectrum results and peak ground acceleration for each attenuation relationship are presented in the following table.

Table No. 4, Probabilistic Response Spectrum Data

Attenuation Relationship	Probabilistic Mean	Abrahamson et al. (2014)	Boore et al. (2014)	Campbell-Bozorgnia (2014)	Chiou-Youngs (2014)
Peak Ground Acceleration (g)	0.794	0.847	0.848	0.677	0.794

Spectral Period (sec)	2% in 50yr Probabilistic Spectral Acceleration (g)				
0.05	0.909	0.869	1.036	0.800	0.921
0.10	1.314	1.185	1.601	1.190	1.241

Spectral Period (sec)	2% in 50yr Probabilistic Spectral Acceleration (g)				
0.20	1.809	2.046	1.881	1.418	1.775
0.30	2.144	2.381	2.011	1.914	2.192
0.40	2.169	2.430	1.867	2.073	2.209
0.50	2.119	2.279	1.795	2.136	2.163
0.75	1.745	1.720	1.428	1.964	1.809
1.00	1.444	1.376	1.264	1.636	1.471
2.00	0.860	0.825	0.770	0.980	0.855
3.00	0.604	0.569	0.583	0.685	0.576
4.00	0.455	0.443	0.480	0.501	0.391
5.00	0.333	0.338	0.374	0.357	0.244

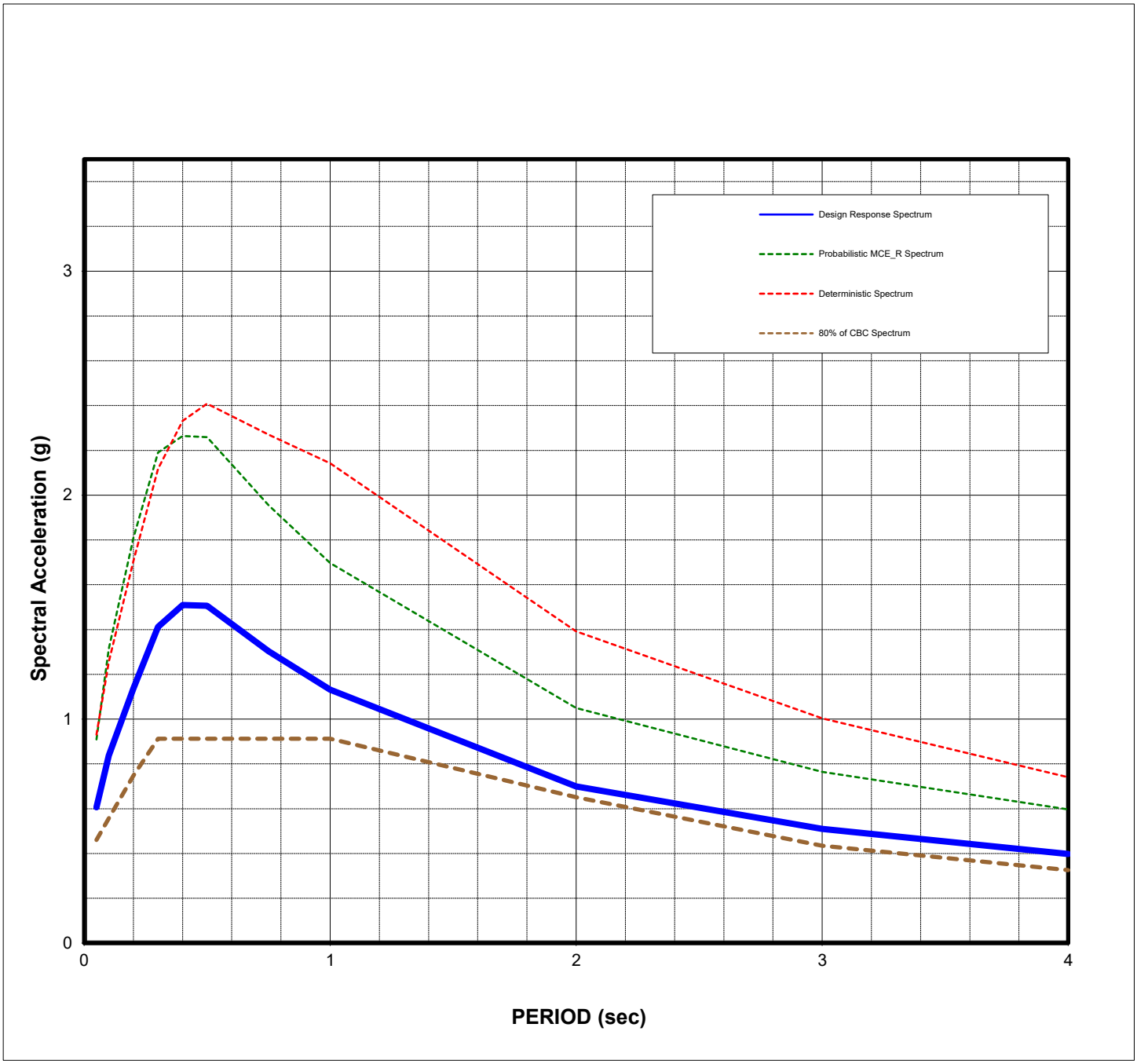
Deterministic response spectra parameters were determined using PEER spread sheet and presented in Table No. 6. Following fault parameters were used to calculate the spectrum. Newport Inglewood Fault, Mw–7.5, R_{RUP}–3.9 km, R_{JB}–3.9 km, Rx–3.9 km and dip angle is 90 degree. Newport Inglewood is strike-slip fault with rupture top at ground surface and rupture bottom of 11 km. Applicable response spectra data are presented in the table below and on Drawing No. 8, *Site-Specific Design Response Spectrum.* These curves correspond to response values obtained from above attenuation relations for horizontal elastic single-degree-of-freedom systems with equivalent viscous damping of 5 percent of critical damping.

Table No. 5, Probabilistic MCE_R Spectral Acceleration (g)

Period (sec)	2% in 50yr Probabilistic Spectral Acceleration (g) Geometric Mean	Risk Coefficient C_R	Scale Factors for MCE_R	Probabilistic MCE_R Spectral Acceleration (g)
0.05	0.909	0.909	1.100	0.909
0.10	1.314	0.909	1.100	1.314
0.20	1.809	0.909	1.100	1.809
0.30	2.144	0.908	1.125	2.191
0.40	2.169	0.908	1.150	2.264
0.50	2.119	0.907	1.175	2.259
0.75	1.745	0.906	1.238	1.956
1.00	1.444	0.904	1.300	1.697
2.00	0.860	0.904	1.350	1.049
3.00	0.604	0.904	1.400	0.764
4.00	0.455	0.904	1.450	0.597
5.00	0.333	0.904	1.500	0.452

Table No. 6, Site-Specific Response Spectrum Data

Period (sec)	84th Percentile Deterministic Response Spectrum, (g) Geometric Mean	Scale Factors for MCE_R	84th Percentile Deterministic MCE Response Spectrum, (g)	Site Specific MCE_R Spectral Acceleration (g)	80% CBC Design Response Spectrum	Site Specific Design Spectral Acceleration (g)
0.05	0.846	1.100	0.930	0.909	0.461	0.606
0.10	1.142	1.100	1.256	1.256	0.557	0.837



Note: Calculated using EZFRISK program Risk Engineering, version 8.06

SITE SPECIFIC DESIGN RESPONSE SPECTRUM

Mixed Use Project

501/601 East Compton Boulevard, Compton, CA

For : KBK Enterprises

Project Number:

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Converse Consultants

Drawing No.

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Period (sec)	84th Percentile Deterministic Response Spectrum, (g) Geometric Mean	Scale Factors for MCE_R	84th Percentile Deterministic MCE Response Spectrum, (g)	Site Specific MCE_R Spectral Acceleration (g)	80% CBC Design Response Spectrum	Site Specific Design Spectral Acceleration (g)
0.20	1.551	1.100	1.706	1.706	0.748	1.138
0.30	1.883	1.125	2.118	2.118	0.913	1.412
0.40	2.028	1.150	2.332	2.264	0.913	1.509
0.50	2.050	1.175	2.408	2.259	0.913	1.506
0.75	1.834	1.238	2.270	1.956	0.913	1.304
1.00	1.648	1.300	2.142	1.697	0.913	1.131
2.00	1.031	1.350	1.391	1.049	0.652	0.700
3.00	0.717	1.400	1.003	0.764	0.434	0.509
4.00	0.511	1.450	0.741	0.597	0.326	0.398
5.00	0.373	1.500	0.560	0.452	0.261	0.301

The site-specific design response parameters are provided in the following table. These parameters were determined from Design Response Spectra presented in table above and following guidelines of ASCE Section 21.4.

Table No. 7, Site-Specific Seismic Design Parameters

Parameter	Value (5% Damping)	Lower Limit, 80% of CBC Design Spectra
Site-Specific 0.2-second period Spectral Response Acceleration, S_{MS}	2.038	1.369
Site-Specific1-second period Spectral Response Acceleration, S_{M1}	2.388	1.955
Site-Specific Design Spectral Response Acceleration for short period S_{DS}	1.359	0.748
Site-Specific Design Spectral Response Acceleration for 1-second period, S_{D1}	1.592	0.913

7.0 DESIGN RECOMMENDATIONS

7.1 General Evaluation

Based on the results of our background review, subsurface exploration, laboratory testing, geotechnical analyses, and understanding of the planned site development, it is our opinion that the proposed project is feasible from a geotechnical standpoint, provided the following conclusions and recommendations are incorporated into the project plans and specifications, and are followed during site construction.

We recommend the Proposed 501/601 East Compton Boulevard mixed use project to be supported on Cast-In-Drilled-Hole (CIDH) pile foundations that penetrate the liquefiable soils into firm stratum encountered at depths sufficient for structural support. Slabs should be designed as structural slabs to minimize the adverse effects of differential settlement

between foundation and slab. Flexible connections for utilities can be used to minimize the damage for the utilities during the seismic event.

Remedial grading consisting of over-excavation and re-compaction is required for the surficial soils to provide structural support of appurtenant improvements.

7.2 Cast-In-Drilled-Hole (CIDH) Piles

The Cast-In-Drilled-Hole (CIDH) piles derive their capacities primarily from the skin friction and end bearing. Because of high groundwater level the end bearing pressure is difficult to achieve because of construction considerations. Design in this section is based on skin friction only.

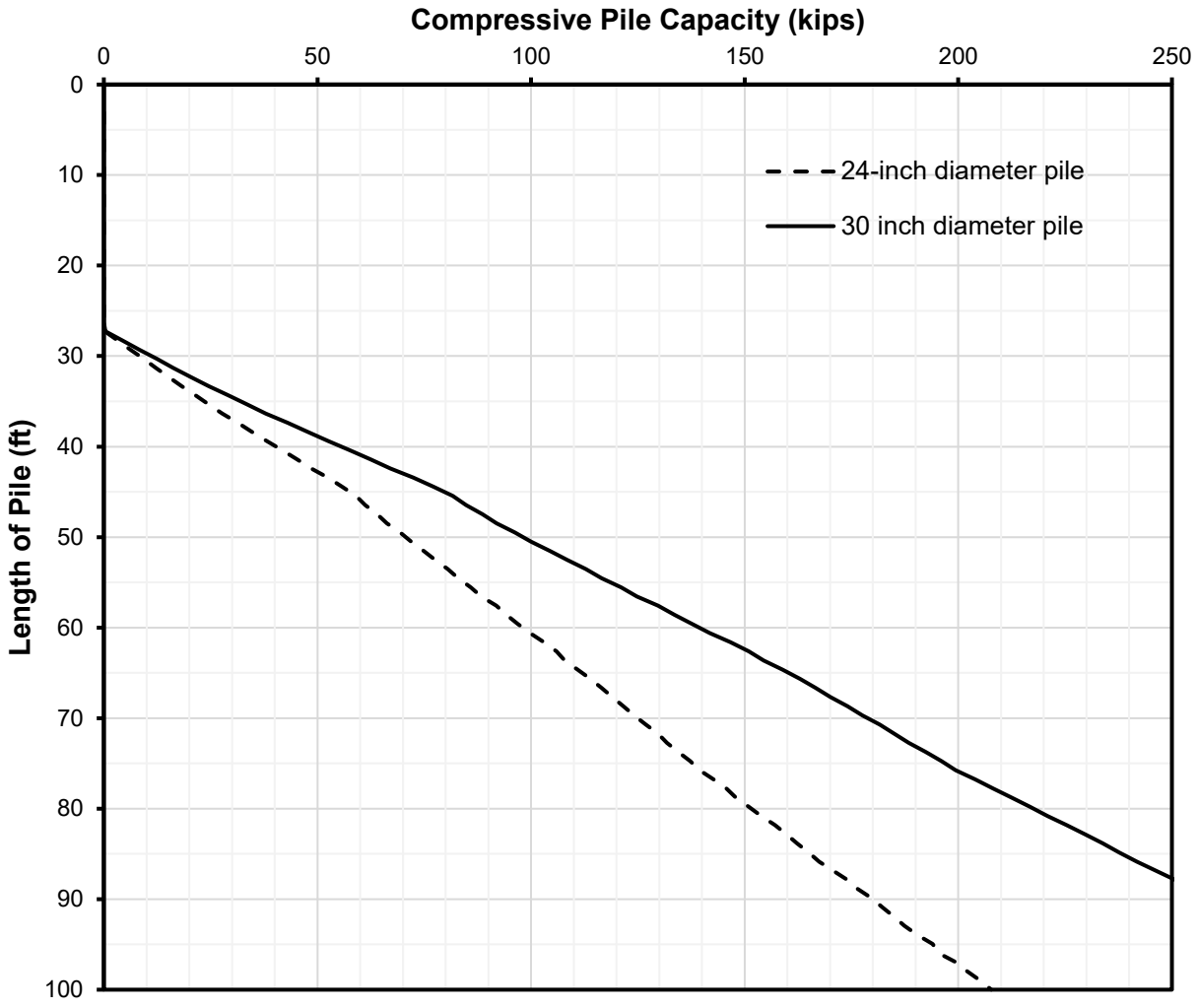
7.2.1 Axial Pile Capacity

The pile capacity was performed using a computer program, ALLPILE, Version 7.21k, by Civil Tech Software. The field SPT N-number and direct shear strengths of alluvium are used to calculate the pile capacities. The estimated downward capacity of cast-in-drilled-hole piles for 24-inch and 30-inch diameter piles may be obtained using the Drawing No. 9, *Estimated Allowable Compressive Capacity of CIDH Piles*.

The minimum embedment of piles should be 65 feet below existing ground surface. In order to eliminate reductions in capacities due to group efficiency and problems in construction, the minimum pile spacing, if any, should be 3 diameters on center. The minimum pile embedment and allowable capacities are presented in Drawing No. 9, *Estimated Allowable Compressive Capacity of CIDH Piles*. A factor of safety of 2.0 has been applied for allowable values for side resistance. The portion of pile in contact with the liquefiable soil is subject to downdrag load due to potential seismically induced settlement. The downdrag loads have been considered in our pile capacity chart. The uplift capacities may be obtained using the Drawing No. 10, *Estimated Allowable Uplift Capacity of CIDH Piles*.

We recommend a pile load test program shall be implemented in order to verify the design pile capacities. In general, the indicator program should include about 10 percent of the number of production piles located across the proposed building site. Furthermore, a minimum requirement for test piles is at least one test pile each in compression and tension for each design diameter, each design length, and each type of pile. Lateral test piles are required if lateral capacity is critical. The pile load testing shall follow the 2019 CBC and ASTM requirements for determining allowable compressive, tensile, and lateral pile capacities.

Pile capacities for the skin friction value are based upon geotechnical considerations only and actual pile capacities may be limited by structural considerations such as the strength and rigidity of the reinforced concrete pile as a structural element.



Notes:
1. Pile Capacities are calculated using ALLPILE program, version 7.21k
2. A factor of safety=2.0 has been applied for allowable side resistance
3-Pile top is assumed to be at 15 feet below ground surface to accommodate basement.

Estimated Allowable Compressive Capacity of CIDH Piles

Mixed Use Project

501/601 East Compton Boulevard, Compton, CA

For : KBK Enterprises

Project Number:

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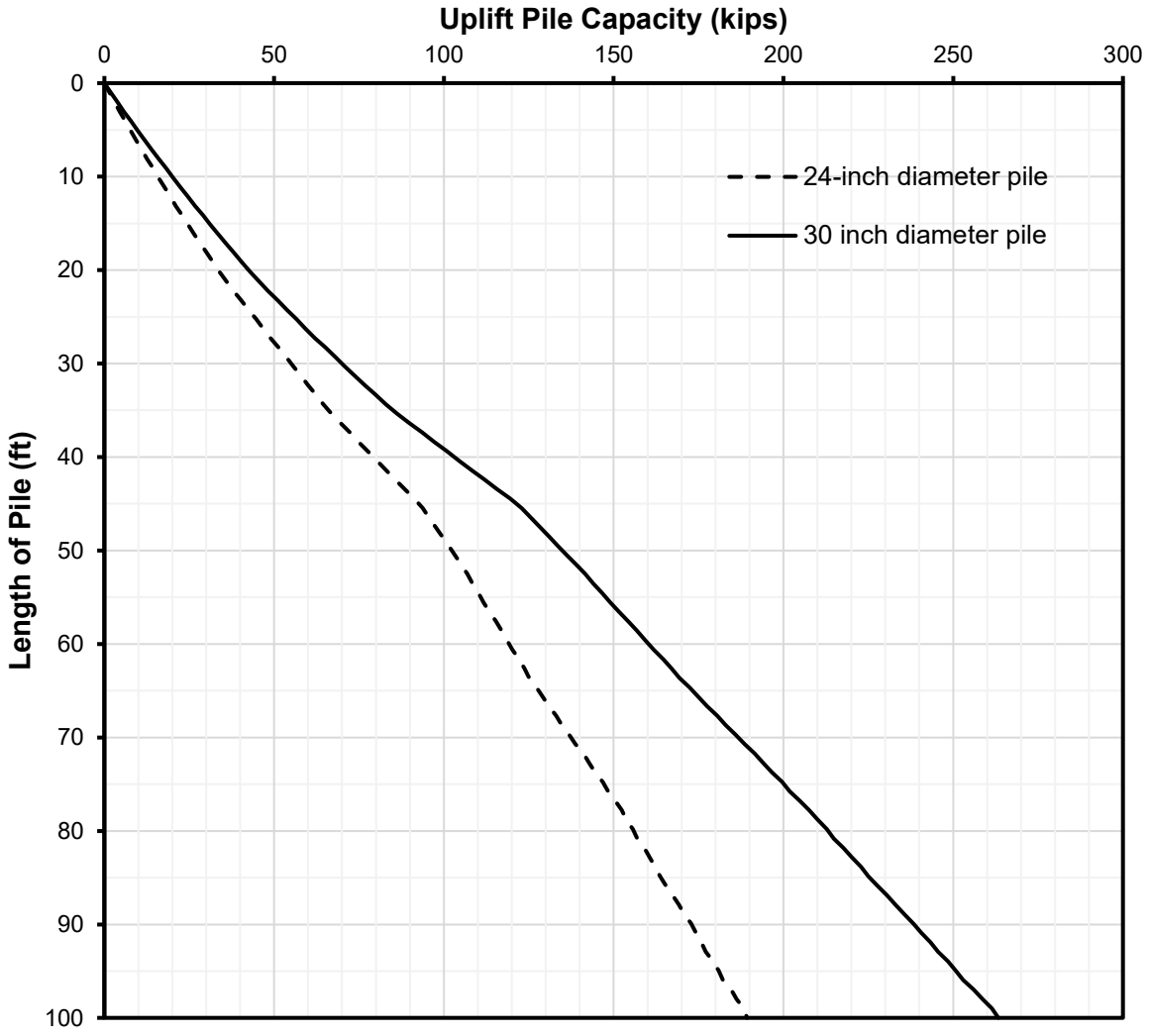
Converse Consultants

Drawing No.

9



Notes:
1. Pile Capacities are calculated using ALLPILE program, version 7.21k
2. A factor of safety=2.0 has been applied for allowable side resistance
3. Pile top is assumed to be at 15 feet below ground surface to accommodate basement.

Estimated Allowable Uplift Capacity of CIDH Piles

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Drawing No.

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Settlement of single pile designed and constructed in accordance with the recommendations presented herein is estimated to be on the order of 0.5 inch. Actual settlement would depend on the applied loads. Pile group settlement would depend on pile spacing, diameter, number of piles and/or the minimum dimensions of the pile group cap. Piles may be tied with grade beam determined by structural engineer.

The center-to-center spacing between piles should not be less than three (3) times the pile diameter. Allowable axial loads of pile groups with center-to-center pile spacing of less than three (3) pile diameters should be determined by incorporating an efficiency reduction factor to the allowable axial loads for single piles.

If the cap is not in firm contact with the ground and if the soil at the surface is soft, the individual nominal resistance of each pile shall be multiplied by an efficiency factor, η, taken as:

η = 0.65 for a center to center spacing of 2.5 diameters,
η = 1.0 for a center to center spacing of 6.0 diameters.

For intermediate spacings, the value of η should be determined by linear interpolation. The multiple Row shaft group reduction configuration from Table No. 8, can be applied for the subject project.

Table No. 8, Group Reduction Factors for Bearing Resistance of Shafts in Sand

Shaft Group Configuration	Shaft Center-to-Center Spacing	Special Conditions	Reduction Factor for Group Effects, η
Single Row	2.5*D*		0.95
	3*D* or more		1.0
Multiple Row	2.5*D*		0.67
	3*D*		0.80
	4*D* or more		1.0
Single and Multiple Rows	2.5D or more	Shaft group cap in intimate contact with ground consisting of medium dense or denser soil, and no scour below the shaft cap is anticipated	1.0
Single and Multiple Rows	2.5D or more	Pressure grouting is used along the shaft sides to restore lateral stress losses caused by shaft installation, and the shaft tip is pressure grouted.	1.0

(California Amendments to AASHTO LRFD Bridge Specification - 6th Edition)

7.2.2 Lateral Pile Capacity

Analyses were performed to determine allowable lateral capacities for various diameter piles. A factor of safety of 2.0 has been applied for allowable values from the ultimate capacities. Reductions in soil strength parameters for the zones susceptible to liquefaction were incorporated to account for liquefaction-related loss of strength and stiffness in analyses of lateral pile capacities, load-deflection, and moment and curvature

characteristics as well. A reduction factor of 50% is considered for moment of inertia of pile cross-section. Descriptions of ALLPILE analyses and summary outputs are presented in Appendix D, *Pile Capacity Analyses – Summary Outputs.* The recommended allowable lateral pile capacities for free head and fixed head piles are presented in the following table:

Table No. 9, Allowable Lateral Load Capacities

Allowable Lateral Load Capacities (Free Head Condition)		
Pile Size	**24-inch diameter**	**30-inch diameter**
P (kips) for pile top deflection of 0.5 inch	33	44
P (kips) for pile top deflection of 1 inch	44	61
P (kips) for pile top deflection of 2 inches	45	70
Allowable Lateral Load Capacities (Fixed Head Condition)		
Pile Size	**24-inch diameter**	**30-inch diameter**
P (kips) for pile top deflection of 0.5 inch	57	82
P (kips) for pile top deflection of 1 inch	74	116
P (kips) for pile top deflection of 2 inches	82	152

The following group reduction factors are recommended for horizontal pile foundation movement.

Table No. 10, Pile P-Multipliers, P_m for Multiple Row Piles

Pile CTC spacing	P – Multipliers, P_m		
	Row 1	**Row 2**	**Row 3**
2.0B	0.60	0.35	0.25
3.0B	0.75	0.55	0.40
5.0B	1.0	0.85	0.70
7.0B	1.0	1.0	0.90

(*California Amendments to AASHTO LRFD Bridge Specification – 6th edition*)

7.2.3 Pile Construction

Pile drilling and concrete placement should be performed in accordance with the recommendations presented herein and in the Appendix F, *Guide Specifications for Drilled Pile Installation* and the Standards and Specifications of ADSC: An International Association of Foundation Drilling Contractors.

It should be noted that the soils encountered during this study are relatively sandy and groundwater was encountered at a depth ranging from approximately 44.5 to 47.2 feet below the existing ground surface. Caving of the sidewalls should be expected during the drilling and construction of the cast-in-place drilled-hole piles, so casing, which will be removed while concrete pouring is taking place, is recommended.

The drilling for piles should not be performed adjacent to recently excavated or recently poured piles until the concrete in the completed piles has been allowed to set for several hours. The minimum recommended spacing between adjacent pours may be taken as 6 times the pile diameters. Piles in groups should be drilled and poured in an alternating sequence to minimize the potential for fresh concrete flowing into adjacent open pile excavations.

Drilling of pile shafts should be observed by the Geotechnical Consultant to confirm that piles are extended to the proper depth and that material encountered is similar to that encountered in the borings drilled for this study. Pile lengths should be tabulated in the foundation plans based upon the embedment below the bottom of the pile cap or other point of reference that can be established in the field during construction.

7.3 Non-Building Structure Footings

7.3.1 Vertical Capacity

For non-building structures (e.g. trash enclosure, signs, fence walls, short retaining walls, etc.), conventional footings can be used. Isolated pad footing should be at least 18 inches square, and continuous footings should be at least 18 inches wide. Footings should be embedded at least 18 inches below lowest adjacent grade into compacted fill soils prepared per our earthwork recommendations. Conventional spread footings founded on compacted fill soils may be designed for a net bearing pressure of 2,000 pounds per square foot (psf) for dead-plus-live-loads.

The net allowable bearing pressure can be increased by 300 psf for each additional foot of excavation depth and by 200 psf for each additional foot of excavation width up to a maximum value of 3,000 psf.

The net allowable bearing values indicated above are for the dead loads and frequently applied live loads are obtained by applying a factor of safety of 3.0 to the net ultimate bearing capacity.

7.3.2 Lateral Capacity

Resistance to lateral loads can be provided by friction acting at the base of the foundation and by passive earth pressure. A coefficient of friction of 0.3 may be assumed with normal dead load forces. An allowable passive earth pressure of 250 psf per foot of depth up to a maximum of 2,000 psf may be used for footings poured against properly compacted fill or undisturbed firm natural soils. The values of coefficient of friction and allowable passive earth pressure include a factor of safety of 1.5.

7.3.3 Settlement

The static settlement of structures supported on continuous and/or spread footings founded on compacted fill will depend on the actual footing dimensions and the imposed vertical loads. Most of the footing settlement at the project site is expected to occur immediately after the application of the load. Based on the maximum allowable net bearing pressures presented above, static settlement is anticipated to be less than one inch. Differential settlement is expected to be up to one-half of the total settlement over a 30-foot span.

7.3.4 Dynamic Increases

Bearing values indicated above are for total dead load and frequently applied live loads. The above vertical bearing may be increased by 33% for short durations of loading which will include the effect of wind or seismic forces. The allowable passive pressure may be increased by 33% for lateral loading due to wind or seismic forces.

7.4 Modulus of Subgrade Reaction

For the subject project, design of the structures supported on compacted fill subgrade prepared in accordance with the recommendations provided in this report may be based on a soil modulus of subgrade reaction of (k_s) of 125 pounds per square inch per inch.

7.5 Lateral Earth Pressure

The following provisional design values may be used for any utility vaults and/or walls below grade that are less than 6 feet high.

The earth pressure behind any buried wall depends primarily on the allowable wall movement, type of soil behind the wall, backfill slopes, wall inclination, surcharges, and any hydrostatic pressure. The following earth pressures are recommended for vertical walls with no hydrostatic pressure.

Table No. 11, Lateral Earth Pressures for Retaining Wall Design

Backfill Slope (H:V)	Cantilever Wall Equivalent Fluid Pressure (psf)	Restrained Wall Equivalent Fluid Pressure (psf)
Level	45 (triangular pressure distribution)	65 (triangular pressure distribution)

The recommended lateral pressures assume that the walls are fully back-drained to prevent build-up of hydrostatic pressure. Adequate drainage could be provided by means of permeable drainage materials wrapped in filter fabric installed behind the walls. The drainage system should consist of perforated pipe surrounded by a minimum one square foot per lineal feet of free draining, uniformly graded, permeable material aggregate, and wrapped in filter fabric such as Mirafi 140N or equivalent. The filter fabric should overlap

approximately 12.0 inches or more at the joints. The subdrain pipe should consist of perforated, 4-inch diameter, rigid ABS (SDR-35) or Schedule 40 PVC pipe, or equivalent, with perforations placed down. Alternatively, a prefabricated drainage composite system such as the MiraDrain 6,000, 6200, 8000, and 9,000 options or equivalent can be used. The subdrain should be connected to solid pipe outlets, with a maximum outlet spacing of 50 feet. Waterproofing membranes should be added to the subterranean wall levels for moisture sensitive areas to mitigate moisture migration through the walls.

In addition, walls with inclined backfill should be designed for an additional equivalent fluid pressure of one pound per cubic foot for every 2 degrees of slope inclination. Walls subjected to surcharge loads located within a distance equal to the height of the wall should be designed for an additional uniform lateral pressure equal to 1/3 or 1/2 the anticipated surcharge load for unrestrained or restrained walls, respectively. These values are applicable for backfill placed between the wall stem and an imaginary plane rising 45 degrees from below the edge (heel) of the wall footings.

Retaining walls taller than 6 feet should be designed to resist additional earth pressure caused by seismic ground shaking based on Section 1613 of CBC 2019. A seismic earth pressure of 20H (psf), based on an inverted triangular distribution, can be used for design of wall.

7.6 Slabs-on-Grade

Structural slab should be designed by structural engineer for the proposed building. Slabs-on-grade for non-building structures should have a minimum thickness of five (5) inches nominal for support of normal ground-floor live loads. Minimum reinforcement for slabs-on-grade should be No. 4 reinforcing bars, spaced at 18 inches on-center each way. The thickness and reinforcement of more heavily loaded slabs will be dependent upon the anticipated loads and should be designed by a structural engineer. A static modulus of subgrade reaction equal to 125 pounds per square inch per inch may be used in structural design of concrete slabs-on-grade.

It is critical that the exposed subgrade soils should not be allowed to desiccate prior to the slab pour. Care should be taken during concrete placement to avoid slab curling. Slabs should be designed and constructed as promulgated by the ACI and Portland Cement Association (PCA). Prior to the slab pour, all utility trenches should be properly backfilled and compacted.

In areas where a moisture-sensitive floor covering (such as vinyl tile or carpet) is used, a 15-mil-thick moisture retarder/barrier can be used between the bottom of slab and subgrade that meets the performance criteria of ASTM E1745 Class A material. Retarder/barrier sheets should be overlapped a minimum of six inches and should be taped or otherwise sealed per the product specifications.

7.7 Soil Corrosivity Evaluation

Two representative soil samples were evaluated for corrosivity with respect to common construction materials such as concrete and steel. The test results are presented in Table No. 12, Soil Corrosivity Test Results, and design recommendations pertaining to soil corrosivity are presented below.

Table No. 12, Soil Corrosivity Test Results

Boring No.	Sample Depth (feet)	pH (Caltrans 643)	Soluble Chlorides (Caltrans 422) ppm	Soluble Sulfate (Caltrans 417) % by Weight	Saturated Resistivity (Caltrans 532) Ohm-cm
BH-1	0-5	8.27	125	0.003	4,800
BH-4	30-31.5	7.93	190	0.055	910

The results of the pH test indicate the soil has pH of 7.93 and 8.27, which should not have an adverse effect on buried concrete or metal.

The sulfate contents of the sampled soils correspond to American Concrete Institute (ACI) exposure category S0 for these sulfate concentrations (ACI 318-14, Table 19.3.1.1). No concrete type restrictions are specified for exposure category S0 (ACI 318-14, Table 19.3.2.1). A minimum compressive strength of 2,500 psi is recommended.

We anticipate that concrete structures such as footings, slab will be exposed to moisture from precipitation and irrigation. Based on the site locations and the results of chloride testing of the site soils, we do not anticipate that concrete structures will be exposed to external sources of chlorides, such as deicing chemicals, salt, brackish water, or seawater. However, laboratory test results indicate higher concentration of chloride. Therefore, we recommend ACI specifies exposure category C2 where concrete is exposed to moisture and external sources of chlorides (ACI 318-14, Table 19.3.1.1). ACI provides concrete design recommendations in ACI 318-14, Table 19.3.2.1, including a compressive strength of at least 5,000 psi, a maximum chloride content of 0.15 percent and a maximum water cement ratio of 0.40.

According to Romanoff, 1957, the following table provides general guideline of soil corrosion based on electrical resistivity.

Table No. 13, Correlation Between Resistivity and Corrosion

Soil Resistivity (ohm-cm) per Caltrans CT 643	Corrosivity Category
Over 10,000	Mildly corrosive
2,000 – 10,000	Moderately corrosive
1,000 – 2,000	corrosive
Less than 1,000	Severe corrosive

The measured value of the minimum electrical resistivity of the sample when saturated were 4,800 and 910 ohm-cm for the site. This indicates that the soils tested are Moderately

corrosive in depths less than 5 feet, and at deeper depths with fine-grained soil, soil is severely corrosive to ferrous metals. Converse does not practice in the area of corrosion consulting. If needed, a qualified corrosion consultant should provide appropriate corrosion mitigation measures for any ferrous metals in contact with the site soils.

7.8 Flexible Pavement

We have performed flexible pavement design analyses to provide pavement structural sections for the proposed drive and parking areas. An R-value of 53 was calculated based on lab tests performed on a bulk sample of the upper five feet of material encountered during our subsurface exploration. An R-value of 50 was used for pavement design. Our recommendations include the following:

The flexible pavement structural section design recommendations were performed in accordance with the method contained in the *CALTRANS Highway Design Manual*, Chapter 630 without the factor of safety. No specific traffic study was performed to determine the Traffic Index (TI) for the proposed project; therefore, a wide range of TI values were evaluated. The recommended flexible pavement structural sections for various TI conditions are presented in the following table:

Table No. 14, Flexible Pavement Structural Sections

Design R-value	Design TI	Asphalt Concrete (AC) Over Aggregate Base (AB) Structural Sections		Full AC Structural Section
		AC (inches)	AB (inches)	AC (inches)
50	4	***3.0***	***3.0***	***3.0***
	5	***3.0***	***3.0***	***4.0***
	6	***3.0***	***4.5***	***5.0***
	7	***3.5***	***5.5***	***6.5***
	8	***4.0***	***7.0***	***7.5***
	9	***5.0***	***7.5***	***8.5***

Actual traffic index and traffic load should be determined by either Civil Engineer or Traffic Engineer. The above pavement sections are recommended as a guideline for basic usage of the indicated TI values, and may not be sufficient for actual traffic loading.

Base material shall conform to requirements for Crushed Miscellaneous Base (CMB) or equivalent and should be placed in accordance with the requirements of the Standard Specifications for Public Works Construction (SSPWC, latest Edition). Asphaltic materials should conform to Section 203-1, "Paving Asphalt," of the Standard Specifications for Public Works Construction (SSPWC, latest Edition) and should be placed in accordance with Section 302-5, "Asphalt Concrete Pavement," of the SSPWC, 2012 edition.

Positive drainage should be provided away from all pavement areas to prevent seepage of surface and/or subsurface water into the pavement base and/or subgrade.

7.9 Rigid Pavement

Rigid pavement design recommendations were provided in accordance with the Portland Cement Association's (PCA) Southwest Region Publication P-14, Portland Cement Concrete Pavement (PCCP) for Light, Medium and Heavy Traffic Rigid Pavement. We recommend that the project structural engineer consider the loading conditions at various locations and select the appropriate pavement sections from the following table:

Table No. 15, Rigid Pavement Structural Sections

Design R-Value	Design Traffic Index (TI)	PCCP Pavement Section (inches)
50	5.0	6.0
	6.0	6.5
	7.0	6.5
	8.0	7.0
	9.0	7.5

The above pavement section is based on a minimum 28-day Modulus of Rupture (M-R) of 550 psi and a compressive strength of 3,750 psi. The third point method of testing beams should be used to evaluate modulus of rupture. The concrete mix design should contain a minimum cement content of 5.5 sacks per cubic yard. Recommended maximum and minimum values of slump for pavement concrete are 3.0 inches to 1.0 inch, respectively.

Transverse contraction joints should not be spaced more than 10 feet and should be cut to a depth of 1/4 the thickness of the slab. Longitudinal joints should not be spaced more than 12 feet apart. A longitudinal joint is not necessary in the pavement adjacent to the curb and gutter section.

Prior to placement of concrete, at least the upper 12.0 inches of subgrade soils below rigid pavement sections should be compacted to at least ninety-five percent (95%) relative compaction as defined by the ASTM D 1557 standard test method. 4-inch aggregate base can be used for rigid pavement.

For pedestrian rated rigid paving and concrete pavers 4-inch PCCP (concrete) can be used over 4-inch Base.

Positive drainage should be provided away from all pavement areas to prevent seepage of surface and/or subsurface water into pavement base and/or subgrade.

7.10 Site Drainage

Adequate positive drainage should be provided away from the structures to prevent ponding and to reduce percolation of water into structural backfill. We recommend that the landscape area immediately adjacent to the foundation shall be designed sloped away

from the building with a minimum 5% slope gradient for at least 10 feet measured perpendicular to the face of the wall. Impervious surfaces within 10 feet of the foundation shall have a minimum 2 percent slope away from the building per 2019 CBC.

Planters and landscaped areas adjacent to the building perimeter should be designed to minimize water infiltration into the subgrade soils.

8.0 EARTHWORK AND SITE GRADING RECOMMENDATIONS

8.1 General Evaluation

Based on our field exploration, laboratory testing, and analyses of subsurface conditions at the site, remedial grading will be required to prepare the sites for support of the proposed improvements that are constructed without deep foundations and structural slab. To reduce differential settlement, variations in the soil type, degree of compaction, and thickness of the compacted fill, the thickness of compacted fill placed underneath the footings should be kept uniform.

Site grading recommendations provided below are based on our experience with similar projects in the area and our evaluation of this investigation.

Site preparation for the proposed improvements may require removal of existing structures, slabs, foundations, parking lots, surface improvements, and other existing underground manmade structures and utilities.

The site soils can be excavated utilizing conventional heavy-duty earth-moving equipment. The excavated site soils, free of vegetation, shrub and debris, may be placed as compacted fill in structural areas after proper processing. Rocks larger than three (3) inches in the largest dimension should not be placed as fill.

On-site clayey soils and with an expansion index exceeding 20 should not be re-used for compaction within 2 feet below the proposed foundations and floor slabs. Soils containing organic materials should not be used as structural fill. The extent of removal should be determined by the geotechnical representative based on soil observation during grading.

8.2 Over-Excavation/ Re-compaction

There is no excavation and re-compaction needed for the structures supported on deep foundation and structural slab. Remedial over-excavation is recommended for the support of the proposed improvements. Deeper over-excavation and re-compaction will be needed for removal of the underground partial basements and existing foundations. Deeper removal will be needed if firm native soils are not exposed on the excavation bottom. The exposed bottom of the over-excavation area should be leveled, squared off, scarified at least 6 inches, moisture conditioned as needed to near-optimum moisture

content, mixed and compacted to 90 percent relative compaction (laboratory maximum density evaluated per ASTM D1577).

The final bottom surfaces and surfaces of all excavations shall be observed and approved by the project geotechnical engineer or his representative prior to placing compacted fill. The bottoms should be proof rolled with loaded, heavy, rubber-tired grading equipment to identify any remaining loose, disturbed or soft bottom areas. The bottom of excavation shall be observed, evaluated and approved during grading to determine that suitable firm and unyielding native soils have been encountered.

Parking pavement and hardscape areas beyond the footprint of the New Mixed-Use Building should be over-excavated to a depth of at least 2 feet, as measured from existing grades. Deeper removal will be needed if firm soil conditions are not exposed on the excavation bottom. The exposed bottom of the over-excavation area should be scarified at least 6 inches, moisture conditioned as needed to near-optimum moisture content and compacted to 90 percent relative compaction. The lateral limits of the over-excavation should extend at least 2 feet beyond the pavement/hardscape areas. If loose, yielding soil conditions are encountered at the excavation bottom, the following options can be considered:

a. Over-excavate until a firm bottom is reached.
b. Over-excavate and scarify an additional 18 inches deep, and then place at least 18-inch-thick layer of compacted base material (CAB or equivalent) to bridge the soft bottom. Base materials should be compacted to a minimum 95% relative compaction.
c. Over-excavate an additional 18-inches deep, and then place a layer of geotextile reinforcement (i.e. Mirafi HP570, or equivalent), then place an 18-inch-thick layer of compacted base material (CAB or equivalent) to bridge the soft bottom. Base materials should be compacted to a minimum 95% relative compaction. An additional layer of geotextile may be needed on top of base material layer depending on the actual site conditions.

The actual depth of removal should be based on recommendations and observation made during grading. Therefore, some variations in the depth and lateral extent of over-excavation recommended in this report should be anticipated.

8.3 Structural Fill

Following observation of the excavation bottom, subgrade soil surfaces should be scarified to a depth of at least six inches. The scarified soil should be moisture-conditioned within three (3) percent of optimum moisture for granular soils and to approximate three (3) percent above the optimum moisture for fine-grained soil. Scarified soil shall be compacted to a minimum 90 percent of the laboratory maximum dry density as determined by the ASTM Standard D1557 test method.

Any import fill should be tested and approved by Project Geotechnical Consultant. The import fill should have an expansion potential less than 20. The imported materials should be thoroughly mixed and moisture conditioned within three (3) percent above the optimum moisture. All fill, if not specified otherwise elsewhere in this report, should be compacted to at least 90 percent of the laboratory dry density in accordance with the ASTM Standard D1557 test method.

Where the fill is not within the areas specified above or is not to support any structures, excavated site soils, free of deleterious materials and rock particles larger than three inches in the largest dimension, should be suitable for placement as compacted fill. The site materials should be thoroughly mixed, and moisture conditioned to approximate three percent above the optimum moisture, and then compacted to at least 90 percent of relative compaction.

8.4 Subgrade Preparation

Final subgrade soils for proposed structure and pavement should be uniform and non-yielding. To obtain a uniform subgrade, soils should be well mixed and uniformly compacted. The subgrade soils should be moisture conditioned before placing concrete.

8.5 Excavatability

Based on our field exploration, the earth materials at the site should be excavatable with conventional heavy-duty earth moving and trenching equipment. Some gravel should be expected during excavation.

8.6 Utility Trench Backfill

The following sections present earthwork recommendations for utility trench backfill, including subgrade preparation and trench zone backfill.

Open cuts adjacent to existing roadways or structures are not recommended within a 1:1 (horizontal:vertical) plane extending down and away from the roadway or structure perimeter (if any).

Soils from the trench excavation should not be stockpiled more than 6 feet in height or within a horizontal distance from the trench edge equal to the depth of the trench. Soils should not be stockpiled behind the shoring, if any, within a horizontal distance equal to the depth of the trench, unless the shoring has been designed for such loads.

8.6.1 Pipeline Subgrade Preparation

The final subgrade surface should be level, firm, uniform, and free of loose materials and properly graded to provide uniform bearing and support to the entire section of the pipe placed on bedding material. Protruding oversize particles larger than 2 inches in

dimension, if any, should be removed from the trench bottom and replaced with compacted on-site materials.

Any loose, soft and/or unsuitable materials encountered at the pipe subgrade should be removed and replaced with an adequate bedding material. During the digging of depressions for proper sealing of the pipe joints, the pipe should rest on a prepared bottom for as near its full length as is practicable.

8.6.2 Pipe Bedding

Bedding is defined as the material supporting and surrounding the pipe to 1 foot above the pipe. Recommendations for pipe bedding are provided below.

To provide uniform and firm support for the pipe, compacted granular materials such as clean sand, gravel or 3/4-inch crushed aggregate, or crushed rock may be used as pipe bedding material. Typically, soils with sand equivalent value of 30 or more are used as pipe bedding material. The pipe designer should determine if the soils are suitable as pipe bedding material.

The type and thickness of the granular bedding placed underneath and around the pipe, if any, should be selected by the pipe designer. The load on the rigid pipes and deflection of flexible pipes and, hence, the pipe design, depends on the type and the amount of bedding placed underneath and around the pipe.

Bedding materials should be vibrated in-place to achieve compaction. Care should be taken to densify the bedding material below the springline of the pipe. Prior to placing the pipe bedding material, the pipe subgrade should be uniform and properly graded to provide uniform bearing and support to the entire section of the pipe placed on bedding material. During the digging of depressions for proper sealing of the pipe joints, the pipe should rest on a prepared bottom for as near its full length as is practicable.

Migration of fines from the surrounding native and/or fill soils must be considered in selecting the gradation of any imported bedding material. We recommend that the pipe bedding material should satisfy the following criteria to protect migration of fine materials.

i. $\frac{D15(F)}{D85(B)} \leq 5$

ii. $\frac{D50(F)}{D50(B)} < 25$

iii. Bedding Materials must have less than 5 percent passing No. 200 sieve (0.0074 mm) to avoid internal movement of fines.

Where,

F	=	Bedding Material
B	=	Surrounding Native and/or Fill Soils
*D*15(F)	=	Particle size through which 15% of bedding material will pass
*D*85(B)	=	Particle size through which 85% of surrounding soil will pass
*D*50(F)	=	Particle size through which 50% of bedding material will pass
*D*50(B)	=	Particle size through which 50% of surrounding soil will pass

If the above criteria do not satisfy, commercially available geofabric used for filtration purposes (such as Mirafi 140N or equivalent) may be wrapped around the bedding material encasing the pipe to separate the bedding material from the surrounding native or fill soils.

8.6.3 Trench Zone Backfill

The trench zone is defined as the portion of the trench above the pipe bedding extending up to the final grade level of the trench surface. Excavated site soil free of oversize particles and deleterious matter may be used to backfill the trench zone. Detailed trench backfill recommendations are provided below.

- Trench excavations to receive backfill should be free of trash, debris or other unsatisfactory materials at the time of backfill placement.
- Trench zone backfill should be compacted to at least 90 percent of the laboratory maximum dry density as per ASTM D1557 test method. At least the upper 1 foot of trench backfill underlying pavement should be compacted to at least 95 percent of the laboratory maximum dry density as per ASTM D1557 test method.
- Particles larger than 1 inch should not be placed within 12 inches of the pavement subgrade. No more than 30 percent of the backfill volume should be larger than ¾-inch in the largest dimension. Gravel should be well mixed with finer soil. Rocks larger than 3 inches in the largest dimension should not be placed as trench backfill.
- Trench backfill should be compacted by mechanical methods, such as sheepsfoot, vibrating or pneumatic rollers or mechanical tampers to achieve the density specified herein. The backfill materials should be brought to within ± 3 percent of optimum moisture content for coarse-grained soil, and between optimum and 2 percent above optimum for fine-grained soil, then placed in horizontal layers. The thickness of uncompacted layers should not exceed 8 inches. Each layer should be evenly spread, moistened or dried as necessary, and then tamped or rolled until the specified density has been achieved.
- The contractor should select the equipment and processes to be used to achieve the specified density without damage to adjacent ground, structures, utilities and completed work.
- The field density of the compacted soil should be measured by the ASTM D1556 (Sand Cone) or ASTM D6938 (Nuclear Gauge) or equivalent.
- Observations and field tests should be performed by the project soils consultant to confirm that the required degree of compaction has been obtained. Where compaction is less than that specified, additional compactive effort should be made

with adjustment of the moisture content as necessary, until the specified compaction is obtained.

- It should be the responsibility of the contractor to maintain safe working conditions during all phases of construction.
- Trench backfill should not be placed, spread, or rolled during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations should not resume until field tests by the project's geotechnical consultant indicate that the moisture content and density of the fill are in compliance with project specifications.

8.7 Expansive Soil Mitigation

Expansive soils are characterized by their ability to undergo significant volume changes (shrink or swell) due to variations in moisture content. Changes in soil moisture content can result from precipitation, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors and may result in unacceptable settlement or heave of structures or concrete slabs supported on grade. Depending on the extent and location below finish subgrade, expansive soils can have a detrimental effect on structures.

Based on the laboratory test results, the expansion index of the upper 5 feet of site soils was 2 corresponding to very low expansion potentials. Shallow foundations if any, and slab on grades should be designed to accommodate the anticipated soil expansion.

During construction, grading will mix and relocate the site soils, and additional fill soils may be added. The expansion indices of the final finish-grade soils will vary from the results obtained during our investigation. The expansion potential of the finish-grade soils should be tested at the completion of grading. During construction, the contractor should determine effective methods to minimize moisture variations.

The recommendations contained in this report are based on the anticipated expansion soil conditions. Any proposed import fill should have an expansion index less than 20 and should be evaluated and approved by Converse prior to import to the site.

8.8 Shrinkage and Subsidence

Soil shrinkage and/or bulking as a result of remedial grading depends on several factors including the depth of over-excavation, and the grading method and equipment utilized, and average relative compaction. For preliminary estimation, bulking and shrinkage factors for various units of earth material at the site may be taken as presented below:

- The approximate shrinkage factor for the native alluvial soils is estimated to range from five (5) to fifteen (15) percent.
- For estimation purposes, ground subsidence may be taken as 0.15 feet as a result of remedial grading.

Although these values are only approximate, they represent our best estimates of the factors to be used to calculate lost volume that may occur during grading. If more accurate shrinkage and subsidence factors are needed, it is recommended that field-testing using the actual equipment and grading techniques be conducted.

8.9 Collapse Potential

Soil deposits subjected to collapse/hydro-consolidation generally exist in regions of moisture deficiency. Collapsible soils are generally defined as soils that have potential to suddenly decrease in volume upon increase in moisture content even without an increase in external loads. Moreover, some soils may have a different degree of collapse/hydro-consolidation based on the amount of proposed fill or structure loads. Soils susceptible to collapse/ hydro-consolidation include wind-blown silt, weakly cemented sand, and silt where the cementing agent is soluble (e.g. soluble gypsum, halite), alluvial or colluvial deposits within semi-arid to arid climate, and certain weathered bedrock above the groundwater table.

Granular soils may have a potential to collapse upon wetting in arid climate regions. Collapse/hydro-consolidation may occur when the soluble cements (carbonates) in the soil matrix dissolve, causing the soil to densify from its loose/low density configuration from deposition.

The degree of collapse of a soil can be defined by the collapse potential value, which is expressed as a percent of collapse of the total sample using the Collapse Potential Test (ASTM D4546). According to the ASTM guideline, the severity of collapse potential is commonly evaluated by the following Table No. 16, *Collapse Potential Values*.

Table No. 16, Collapse Potential Values

Collapse Potential Value (%)	Severity of Problem
0	None
0.1 to 2	Slight
2.1 to 6.0	Moderate
6.0 to 10.0	Moderately Severe
>10	Severe

Based on the laboratory test results (collapse potential of 0.2 and 2.6 percent), a slight to moderate problem is anticipated at the site. Collapse potential distress is typically considered a concern when collapse potential is over 2% (LA County, 2013).

8.10 Slab Subgrade Preparation

Final subgrade soils for minor structures or non-building structures and pavement/hardscape should be uniform and non-yielding. To obtain a uniform subgrade, soils should be well mixed and uniformly compacted. The subgrade soils should be non-expansive and well-drained. The near-surface site soils should be free draining. We

recommend that at least the upper two (2) inches of subgrade soils underneath the slab-on-grade should be comprised of well-drained granular soils such as sands, gravel or crushed aggregate satisfying the following criteria:

- Maximum size ≤ 1.5 inches
- Percent passing U.S. #200 sieve ≤ 12 percent
- Sand equivalent ≥ 30

The subgrade soils should be moisture conditioned before placing concrete.

9.0 CONSTRUCTION CONSIDERATIONS

9.1 General

Site soils should be excavatable using conventional heavy-duty excavating equipment. Temporary sloped excavation is feasible if performed in accordance with the slope ratios provided in Section 9.2, *Temporary Excavations*. Existing utilities should be accurately located and either protected or removed as required.

9.2 Temporary Excavations

Based on the sandy materials encountered in the exploratory borings, sloped temporary excavations (if necessary) may be constructed according to the slope ratios presented in Table No. 17, *Slope Ratios for Temporary Excavations*. Any loose utility trench backfill or other fill encountered in excavations will be less stable than the native soils. Temporary cuts encountering loose fill or loose dry sand may have to be constructed at a flatter gradient than presented in the following table:

Table No. 17, Slope Ratios for Temporary Excavations

Maximum Depth of Cut (feet)	Maximum Slope Ratio* (horizontal: vertical)
0 – 4	vertical
4 – 8	1:1
8+	1.5:1

*Slope ratio assumed to be uniform from top to toe of slope.

Surfaces exposed in slope excavations should be kept moist but not saturated to minimize raveling and sloughing during construction. Adequate provisions should be made to protect the slopes from erosion during periods of rainfall. Surcharge loads, including construction, should not be placed within five (5) feet of the unsupported trench edge. The above maximum slopes are based on a maximum height of six (6) feet of stockpiled soils placed at least five (5) feet from the trench edge.

All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act of 1987 and current amendments, and the Construction Safety Act should be met. The soils exposed in cuts should be observed during excavation by the project's geotechnical consultant. If potentially unstable soil conditions are encountered, modifications of slope ratios for temporary cuts may be required.

9.3 Slot Cut Recommendations

Temporary excavations during possible improvements should not extend below a 1:1 horizontal:vertical (H:V) plane extending beyond and down from the bottom of the existing utility lines or structures. The remedial grading excavations should not cause loss of bearing and/or lateral support for adjacent utilities or structures.

If remedial grading excavations extend below a 1:1 horizontal:vertical (H:V) plane extending beyond and down from the bottom of adjacent utility lines or structure foundations, shoring or slot cutting shall be employed. “A-B-C” slot cuts exposing native sandy soils may be excavated with maximum 8 feet wide sections to prevent the existing utility lines or off-site structures from becoming unstable. Backfill should be accomplished in the shortest period of time possible and in alternating sections.

The ABC slot cutting method for retaining walls could be a possible option as an alternative to shoring for excavation less than 8 feet or with cohesive soils. In general, for structures it is not recommended for slot cutting if the height of excavation exceeds more than 8 feet or into sandy soils and with surcharging load.

9.4 Shoring Design

Temporary shoring will be required for the recommended excavation due to space limitations and property line boundaries and because of nearby existing structures or facilities and traffic loading. Temporary shoring may consist of the use of conventional soldier piles and lagging. Shoring should ultimately be designed by a qualified structural engineer considering the recommendations below in their final design and others which are applicable. Existing structures adjacent to excavation should be monitored for distress or excessive vibration during excavation.

Drilled excavations for soldier piles, which are recommended to create the proposed excavation, may require the use of drilling fluids or temporary casing to prevent caving and to maintain an opened hole for pile installation.

9.4.1 Cantilevered Shoring

Cantilevered shoring systems may include soldier piles with lagging to maintain temporary support of vertical wall excavations. Shoring design must consider the support of adjacent underground utilities and/or structures and should consider the effects of shoring deflection on supported improvements. Due to sandy nature of on-site soils, some

caving during the drilling of soldier-pile borings should be anticipated. A soldier pile system will require continuous lagging to control caving and sloughing in the excavation between soldier piles.

Temporary cantilevered shoring should be designed to resist a lateral earth pressure equivalent to a fluid density of 45 pounds per cubic foot (pcf) for non-surcharged condition. This pressure is valid only for shoring retaining level ground.
In addition to the lateral earth pressure, surcharge pressures due to miscellaneous loads, such as soil stockpiles, existing structures, vehicular traffic or construction equipment located adjacent to the shoring, should be included in the design of the shoring. A uniform lateral pressure of 100 psf should be included in the upper 10 feet of the shoring to account for normal vehicular and construction traffic within 10 feet of the excavation. Surcharge pressures from the existing structures should be added to the above earth pressures for surcharges within a horizontal distance less than or equal to the wall height. Surcharge coefficients of 50% of any uniform vertical surcharge should be added as a horizontal earth pressure for shoring design. All shoring should be designed and installed in accordance with state and federal safety regulations.

The minimum embedment depth for piles is ten (10) feet from the lowest adjacent grade into firm alluvium, below the bottom of the excavation. Vertical skin friction against soldier piles may be taken as 250 psf. Fixity may be assumed at two (2) feet below the excavation into firm native alluvium or bedrock. For the design of soldier piles spaced at least 3.0 diameters on-center, the passive resistance of the soils adjacent to the piles may be assumed to be 210 psf per foot of embedment depth. Soldier pile members placed in drilled holes should be properly backfilled with a sand/cement slurry or lean concrete in order to develop the required passive resistance.

Caving soils should be anticipated between the piles. To limit local sloughing, caving soils can be supported by continuous lagging or guniting. The lagging between the soldier piles may consist of pressure-treated wood members or solid steel sheets. In our opinion, steel sheeting is expected to be more expedient than wood lagging to install. Although soldier piles and any bracing used should be designed for the full-anticipated earth pressures and surcharge pressures, the pressures on the lagging are less because of the effect of arching between the soldier piles. Accordingly, the lagging between the piles may be designed for a nominal pressure of up to a maximum of 400 psf. All lumber to be left in the ground should be treated in accordance with Section 204-2 of the "Standard Specifications for Public Works Construction" (Latest Edition).

9.4.2 Tie-Back Shoring

A tie-back soldier-pile shoring system may be used to maintain temporary support of deep vertical walled excavations. Braced or tied-back shoring, retaining a level ground surface, should be designed for a uniform pressure of 20H psf, where H is the height of the retained cut in feet.

Surcharge pressures should be added to this earth pressure for surcharges within a distance from the top of the shoring less than or equal to the shoring height. A surcharge coefficient of 50 percent of any uniform vertical surcharge should be added as a horizontal shoring pressure for braced shoring. A uniform lateral pressure of 100 psf should be included in the upper 10 feet of the shoring to account for normal vehicular and construction traffic within 10 feet of the trench excavation.

9.4.3 Tie-Backs

For design of tie-back shoring, it should be assumed that the potential wedge of failure is determined by a plane at 30 degrees from the vertical, through the bottom of the excavation. Tie-back anchors may be installed at angles of 15 to 40 degrees below a horizontal plane. Soil friction values, for estimating the allowable capacity of drilled friction anchors, may be computed using the following equation:

$q = 40H; \quad q \leq 500$ *pounds-per-square-foot (psf)*

where:

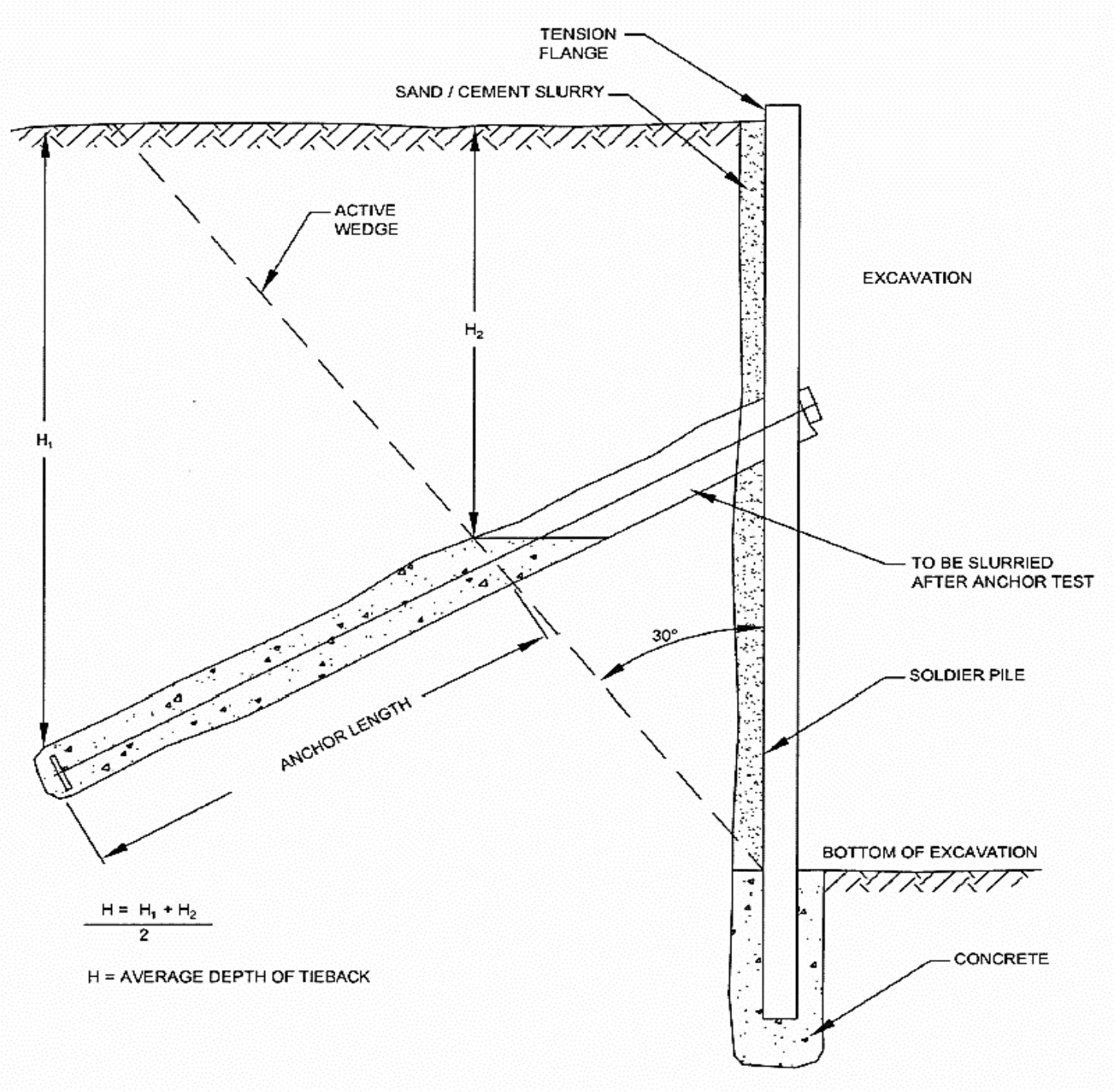
H = average depth of anchor below ground surface, shown on Drawing No. 11, *Schematic Typical Tie-Back Design*
q = anchor surface area resistance, in psf (excluding tip),

Only the frictional resistance developed beyond the assumed failure plane should be included in the tie-back design for resisting lateral loads. After shoring/tie-back is no longer needed to support the excavation, stress should be carefully released and shoring system including tieback may be able to be left in place.

All shoring and tie-back should be designed by experienced California licensed Civil Engineer and installed by experienced contractors. Shoring/tie-back design should also be reviewed by a geotechnical consultant to verify the soil parameters used in the design are in conformance with geotechnical report.

All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act of 1987 and current amendments, and the Construction Safety Act should be met. The soils exposed in cuts should be observed during excavation by a competent person employed by the contractor. If potentially unstable soil conditions are encountered, modifications of slope ratios for temporary cuts may be required.

It is recommended that Converse review plans and specifications for proposed shoring and that a Converse representative observes the installation of shoring. A licensed surveyor should be retained to establish monuments on shoring and the surrounding ground prior to excavation. Such monuments should be monitored for horizontal and vertical movement during construction. Results of the monitoring program should be provided immediately to the project Structural (shoring) Engineer and Converse for review



SCHEMATIC TYPICAL TIE-BACK DESIGN

Mixed Use Project

501/601 East Compton Boulevard, Compton, CA

For : KBK Enterprises

Project Number:

20-31-295-01

Converse Consultants

Drawing No.

11

and evaluation. Adjacent building elements should be photo-documented prior to construction.

9.5 Geotechnical Services During Construction

This report has been prepared to aid in the site preparation and site grading plans and specifications, and to assist the architect, civil and structural engineers in the design of the proposed structure. It is recommended that this office be provided an opportunity to review final design drawings and specifications to verify that the recommendations of this report have been properly implemented.

Recommendations presented herein are based upon the assumption that adequate earthwork monitoring will be provided by Converse. Excavation bottoms should be observed by a Converse representative prior to the placement of compacted fill. Structural fill and backfill should be placed and compacted during continuous observation and testing by this office. Footing excavations should be observed by Converse prior to placement of steel and concrete so that footings are founded on satisfactory materials and excavations are free of loose and disturbed materials.

During construction, the geotechnical engineer and/or their authorized representatives should be present at the site to provide a source of advice to the client regarding the geotechnical aspects of the project and to observe and test the earthwork performed. Their presence should not be construed as an acceptance of responsibility for the performance of the completed work, since it is the sole responsibility of the contractor performing the work to ensure that it complies with all applicable plans, specifications, ordinances, etc.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor's operations, and cannot be responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the contractor. The contractor should notify the owner if he considers any recommended actions presented herein to be unsafe.

10.0 CLOSURE

The findings and recommendations of this report were prepared in accordance with generally accepted professional engineering and engineering geologic principles and practice. We make no other warranty, either expressed or implied. Our conclusions and recommendations are based on the results of the field and laboratory investigations, combined with an interpolation and extrapolation of soil conditions between and beyond boring locations. If conditions encountered during construction appear to be different from those shown by the borings, this office should be notified.

Design recommendations given in this report are based on the assumption that the earthwork, site grading and foundation recommendations contained in this report are implemented. Additional consultation may be prudent to interpret Converse's findings for contractors, or to possibly refine these recommendations based upon the review of the final site grading and actual site conditions encountered during construction. If the scope of the project changes, if project completion is to be delayed, or if the report is to be used for another purpose, this office should be consulted.

This report was prepared for KBK Enterprises for the subject project described herein. We are not responsible for technical interpretations made by others of our exploratory information. Specific questions or interpretations concerning our findings and conclusions may require a written clarification to avoid future misunderstandings.

11.0 REFERENCES

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Appendix A

Field Exploration

APPENDIX A: FIELD EXPLORATION

Field exploration included a site reconnaissance and subsurface exploration program. During the site reconnaissance, the surface conditions were noted, and the approximate locations of the field exploration were determined. The exploratory borings and Cone Penetration Tests (CPTs) were approximately located using existing boundary and other features as a guide and should be considered accurate only to the degree implied by the method used. The various field study methods performed are discussed below.

Exploratory Borings

Six (6) exploratory borings (BH-1 through BH-6) were advanced within the project site on October 26, 2020 and October 27, 2020. All borings were advanced using a truck mounted drill rig with an 8-inch diameter hollow stem auger to a maximum depth of 51.5 feet below the existing ground surface (bgs). Each boring was visually logged by a Converse geologist and sampled at regular intervals and at changes in subsurface soils. Where appropriate, field descriptions and classifications have been modified to reflect laboratory test results.

Ring samples of the subsurface materials were obtained at frequent intervals in the exploratory borings using a drive sampler (2.4-inches inside diameter and 3.0-inches outside diameter) lined with sample rings. The steel ring sampler was driven into the bottom of the borehole with successive drops of a 140-pound driving weight falling 30 inches, using an automatic hammer. Samples are retained in brass rings (2.4-inches inside diameter and 1.0-inch in height). The central portion of the samples were retained and carefully sealed in waterproof plastic containers for shipment to the Converse laboratory. Blow counts at each sample interval are presented on the logs of borings. Bulk samples of typical soil types were also obtained.

Standard Penetration Test (SPT) was also performed using a standard split-barrel sampler (1.4-inches inside diameter and 2.0-inches outside diameter). The mechanically driven hammer for the SPT sampler was 140 pounds, falling 30 inches for each blow. The recorded blow counts for every six inches for a total of 1.5 feet of sampler penetration are shown on the Logs of Borings in the “BLOWS" column. The standard penetration test was performed in accordance with the ASTM Standard D1586 test method.

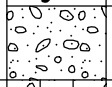
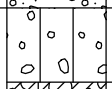
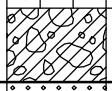
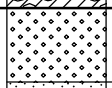
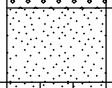
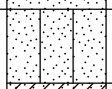
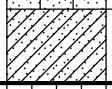
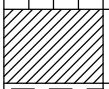
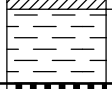
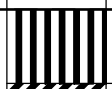
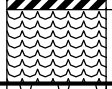
It should be noted that the exact depths at which material changes occur cannot always be established accurately. Changes in material conditions that occur between driven samples are indicated in the logs at the top of the next drive sample. A key to soil symbols and terms is presented as Figure No. A-1, *Soil Classification Chart*. The log of the exploratory boring is presented in Figures Nos. A-2 through A-7, *Log of Borings*.

Cone Penetration Test (CPT)

The two (2) Cone Penetration Tests (CPTs) conducted for this project consisted of pushing an instrumented cone-tipped probe into the ground while simultaneously recording the resistance to penetration at the cone tip and along the friction sleeve. The cone penetration testing described in this report was conducted in general accordance with the current ASTM specifications (ASTM D5778-95 and D3441-94) using an electronic cone penetrometer.

Two (2) Cone Penetration Tests (CPT-1 and CPT-2) were advanced to depths of approximately 100 feet below ground surface within the project site on October 28, 2020 by Kehoe Testing and Engineering using a 30-ton (4 axle) CPT rig. The test holes were stopped at plan depths. The test holes were backfilled with bentonite crumbles, periodically hydrated with clean water, and tamped at the surface. The top portion of the test hole was then patched with asphalt patch, rapid set concrete or soil to match existing surface conditions. The Cone Penetration Test (CPT) test logs are presented at the end of Appendix A.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

BORING LOG SYMBOLS

SAMPLE TYPE

- STANDARD PENETRATION TEST — Split barrel sampler in accordance with ASTM D-1586-84 Standard Test Method
- DRIVE SAMPLE 2.42" I.D. sampler.
- DRIVE SAMPLE No recovery
- BULK SAMPLE
- GROUNDWATER WHILE DRILLING
- GROUNDWATER AFTER DRILLING

LABORATORY TESTING ABBREVIATIONS

TEST TYPE
(Results shown in Appendix B)

CLASSIFICATION

Plasticity	pi
Grain Size Analysis	ma
Passing No. 200 Sieve	wa
Sand Equivalent	se
Expansion Index	ei
Compaction Curve	max
Hydrometer	h

STRENGTH

Pocket Penetrometer	p
Direct Shear	ds
Direct Shear (single point)	ds*
Unconfined Compression	uc
Triaxial Compression	tx
Vane Shear	vs
Consolidation	c
Collapse Test	col
Resistance (R) Value	r
Chemical Analysis	ca
Electrical Resistivity	er

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-1**

Log of Boring No. BH-1

Dates Drilled: 10/26/2020 Logged by: Karley Sullivan Checked By: Babak Abbasi

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 60 Depth to Water (ft): 44.5

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER TESTS
		1-INCH ASPHALT OVER 3.5-INCH BASE MATERIAL						ca, er
		FILL (Af):						
		SILTY SAND (SM): fine-grained, poorly graded, loose, light brown.						
5			■		4/5/5	9	92	
		ALLUVIUM (Qal):						
10		**LEAN CLAY (CL):** high plasticity, medium stiff, olive grey.	■		3/5/6	18	102	wa (fc=86.3%)
15		**SANDY LEAN CLAY (CL):** low plasticity, stiff, olive grey.	■		6/6/8	22	101	
20		medium plasticity, very stiff,	■		6/12/15	19	103	wa (fc= 54.5%)
25		medium stiff,	⊠		3/4/4			
30		**CLAYEY SAND (SC):** fine-grained, poorly graded, medium dense, olive grey.	■		7/11/15	9	106	c

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-2a**

Log of Boring No. BH-1

Dates Drilled: 10/26/2020 Logged by: Karley Sullivan Checked By: Babak Abbasi

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 60 Depth to Water (ft): 44.5

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER TESTS
		SANDY SILT (ML): low plasticity, very stiff, greenish grey.	X		7/11/11			
40			■		9/11/12	33	83	wa (fc=52.4%)
45		**POORLY GRADED SAND (SP):** medium-grained, poorly graded, trace angular gravel, medium dense, light grey.	X		6/7/11			
50		**SILTY SAND (SM):** fine to medium-grained, poorly graded, medium dense, gray.	■		9/9/31	21	101	wa (fc=43.5%)
		End of borehole at 51.5 feet below ground level. Groundwater encountered at 44.5 feet below ground surface. Borehole backfilled with cement grout and topped with cold patch asphalt on 10/26/20.						

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-2b**

Log of Boring No. BH-2

Dates Drilled: 10/26/2020 Logged by: Karley Sullivan Checked By: Babak Abbasi

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 61 Depth to Water (ft): 47

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER TESTS
		2-INCH ASPHALT OVER 5-INCH BASE MATERIAL						ei, max
		FILL (Af):						
		SANDY SILT (ML): low plasticity, stiff, light brown.						
5			■		7/9/10	12	97	
10			■		4/5/3	20	85	
		ALLUVIUM (Qal):						
		SILT (ML): medium plasticity, medium stiff, light brown.						
15			■		3/4/6	19	102	
20		**LEAN CLAY (CL):** high plasticity, stiff, light brown.	⊠		4/6/7			
25		**SILTY SAND (SM):** fine-grained, poorly graded, dense, light brown.	■		4/24/28	9	90	
30		**CLAY WITH SAND (CL):** high plasticity, stiff, olive grey.	⊠		5/6/5			

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-3a**

Log of Boring No. BH-2

Dates Drilled: 10/26/2020 Logged by: Karley Sullivan Checked By: Babak Abbasi

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 61 Depth to Water (ft): 47

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER TESTS
		SILTY SAND (SM): fine-grained, poorly graded, dense, trace clay, olive grey.	■		11/17/30	24	96	ds
40			☒		13/20/23			
45		▽	■		17/30/37	25	96	
50			☒		6/12/17			
		End of borehole at 51.5 feet below ground level. Groundwater encountered at 47 feet below ground surface. Borehole backfilled with cement grout and topped with cold patch asphalt on 10/26/20.						

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-3b**

Log of Boring No. BH-3

Dates Drilled: 10/26/2020 Logged by: Karley Sullivan Checked By: Babak Abbasi

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 61 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER TESTS
		1-INCH ASPHALT OVER 3.5-INCH BASE MATERIAL						r
		FILL (Af):						
		SILTY SAND (SM): fine-grained, poorly graded, medium dense, light brown.						
5			■		7/10/10	8	98	
		ALLUVIUM (Qal):						
		LEAN CLAY (CL): medium plasticity, very stiff, olive grey.						
10			■		7/8/10	17	97	
		End of borehole at 11.5 feet below ground level. Groundwater was not encountered. Borehole backfilled with soil cuttings and topped with cold patch asphalt on 10/26/20.						

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-4**

Log of Boring No. BH-4

Dates Drilled: 10/27/2020 Logged by: Karley Sullivan Checked By: Babak Abbasi

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 61 Depth to Water (ft): 47.2

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER TESTS
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		2-INCH ASPHALT OVER 1-INCH BASE MATERIAL						ma (fc=51.0%)
		FILL (Af):						
		SANDY SILT (ML): low plasticity, medium dense, yellow brown.						
5			■		5/8/9	14	94	
10		**ALLUVIUM (Qal):**	■		3/4/6	13	107	
		LEAN CLAY (CL): high plasticity, medium stiff, olive grey.						
15		medium plasticity, stiff, few angular gravel, olive grey	■		6/8/11	15	109	wa (fc=91.1%)
20			■		6/8/8	13	107	
25			⊠		3/5/6			pi
30		**SILT (ML):** low plasticity, very stiff, olive grey.	■		8/13/19			

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-5a**

Log of Boring No. BH-4

Dates Drilled: 10/27/2020 Logged by: Karley Sullivan Checked By: Babak Abbasi

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 61 Depth to Water (ft): 47.2

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER TESTS
		SILTY SAND (SM): fine-grained, poorly graded, dense, yellow brown.	X		12/20/20			wa (fc=30%)
40			■		11/18/24	19	99	
45		medium-grained, olive grey	X		13/26/23			wa (fc=31.3%)
50			■		5/7/33	16	117	ds
		End of borehole at 51.5 feet below ground level. Groundwater encountered at 47.2 feet below ground surface. Borehole backfilled with cement grout and topped with cold patch asphalt on 10/27/20.						

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-5b**

Log of Boring No. BH-5

Dates Drilled: 10/26/2020 Logged by: Karley Sullivan Checked By: Babak Abbasi

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 61 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER TESTS
5		**FILL (Af):** **SILTY SAND (SM):** fine-grained, poorly graded, medium dense, light brown.	■		11/14/15	14	102	
10		**ALLUVIUM (Qal):** **SILT (ML):** low plasticity, stiff, olive grey.	■		4/6/8	7	102	
		End of borehole at 11.5 feet below ground level. Groundwater was not encountered. Borehole backfilled with soil cuttings and tamped on 10/26/20.						

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-6**

Log of Boring No. BH-6

Dates Drilled: 10/27/2020 Logged by: Karley Sullivan Checked By: Babak Abbasi

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 61 Depth to Water (ft): 47.1

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER TESTS
		5-INCHE CONCRETE OVER 5-INCH BASE MATERIAL						
		FILL (Af):						ma (fc=54.3%)
		SANDY SILT (ML): low plasticity, stiff, olive grey.						
5			■		8/10/11	7	97	
		ALLUVIUM (Qal):						
10		**SANDY CLAY (CL):** high plasticity, medium stiff, olive grey with orange straining.	■		4/4/5	12	103	ds
15		**SANDY SILT (ML):** low plasticity, stiff, few angular gravel, olive grey with orange straining.	■		4/7/8	14	101	c
20			⊠		4/5/6			
25		**LEAN CLAY (CL):** medium plasticity, stiff, olive grey.	■		4/6/7	14	103	
30		**SILTY SAND (SM):** poorly graded, medium dense, trace clay, olive grey.	⊠		6/8/10			

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-7a**

Log of Boring No. BH-6

Dates Drilled: 10/27/2020 Logged by: Karley Sullivan Checked By: Babak Abbasi

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 61 Depth to Water (ft): 47.1

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER TESTS
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		SILTY SAND (SM): fine to medium-grained, poorly graded, medium dense, trace clay, olive grey.	■		7/10/17	13	111	
40			☒		10/12/14			
45		▽	■		10/13/42	10	116	
50			☒		5/9/18			
		End of borehole at 51.5 feet below ground level. Groundwater was encountered at 47.1 feet below ground surface. Borehole backfilled with cement grout and topped with concrete on 10/27/20.						

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **A-7b**

SUMMARY

OF

CONE PENETRATION TEST DATA

Project:

501 & 601 E. Compton Blvd.
Compton, CA
October 28, 2020

Prepared for:

Mr. Babak Abbasi
Converse Consultants
717 S. Myrtle Avenue
Monrovia, CA 91016
Office (626) 930-1200 / Fax (626) 930-1212

Prepared by:

KEHOE TESTING & ENGINEERING
5415 Industrial Drive
Huntington Beach, CA 92649-1518
Office (714) 901-7270 / Fax (714) 901-7289
www.kehoetesting.com

TABLE OF CONTENTS

SUMMARY
OF
CONE PENETRATION TEST DATA

1. INTRODUCTION

This report presents the results of a Cone Penetration Test (CPT) program carried out for the project located at 501 & 601 E. Compton Blvd. in Compton, California. The work was performed by Kehoe Testing & Engineering (KTE) on October 28, 2020. The scope of work was performed as directed by Converse Consultants personnel.

2. SUMMARY OF FIELD WORK

The fieldwork consisted of performing CPT soundings at two locations to determine the soil lithology. A summary is provided in **TABLE 2.1**.

LOCATION	DEPTH OF CPT (ft)	COMMENTS/NOTES:
CPT-1	100	
CPT-2	100	

TABLE 2.1 - Summary of CPT Soundings

3. FIELD EQUIPMENT & PROCEDURES

The CPT soundings were carried out by **KTE** using an integrated electronic cone system manufactured by Vertek. The CPT soundings were performed in accordance with ASTM standards (D5778). The cone penetrometers were pushed using a 30-ton CPT rig. The cone used during the program was a 15 cm^2 cone and recorded the following parameters at approximately 2.5 cm depth intervals:

- Cone Resistance (qc)
- Sleeve Friction (fs)
- Dynamic Pore Pressure (u)
- Inclination
- Penetration Speed

The above parameters were recorded and viewed in real time using a laptop computer. Data is stored at the KTE office for up to 2 years for future analysis and reference. A complete set of baseline readings was taken prior to each sounding to determine temperature shifts and any zero load offsets. Monitoring base line readings ensures that the cone electronics are operating properly.

4. CONE PENETRATION TEST DATA & INTERPRETATION

The Cone Penetration Test data is presented in graphical form in the attached Appendix. These plots were generated using the CPeT-IT program. Penetration depths are referenced to ground surface. The soil behavior type on the CPT plots is derived from the attached CPT SBT plot (Robertson, "Interpretation of Cone Penetration Test…", 2009) and presents major soil lithologic changes. The stratigraphic interpretation is based on relationships between cone resistance (qc), sleeve friction (fs), and penetration pore pressure (u). The friction ratio (Rf), which is sleeve friction divided by cone resistance, is a calculated parameter that is used along with cone resistance to infer soil behavior type. Generally, cohesive soils (clays) have high friction ratios, low cone resistance and generate excess pore water pressures. Cohesionless soils (sands) have lower friction ratios, high cone bearing and generate little (or negative) excess pore water pressures.

The CPT data files have also been provided. These files can be imported in CPeT-IT (software by GeoLogismiki) and other programs to calculate various geotechnical parameters.

It should be noted that it is not always possible to clearly identify a soil type based on qc, fs and u. In these situations, experience, judgement and an assessment of the pore pressure data should be used to infer the soil behavior type.

If you have any questions regarding this information, please do not hesitate to call our office at (714) 901-7270.

Sincerely,

KEHOE TESTING & ENGINEERING

Steven P. Kehoe
President

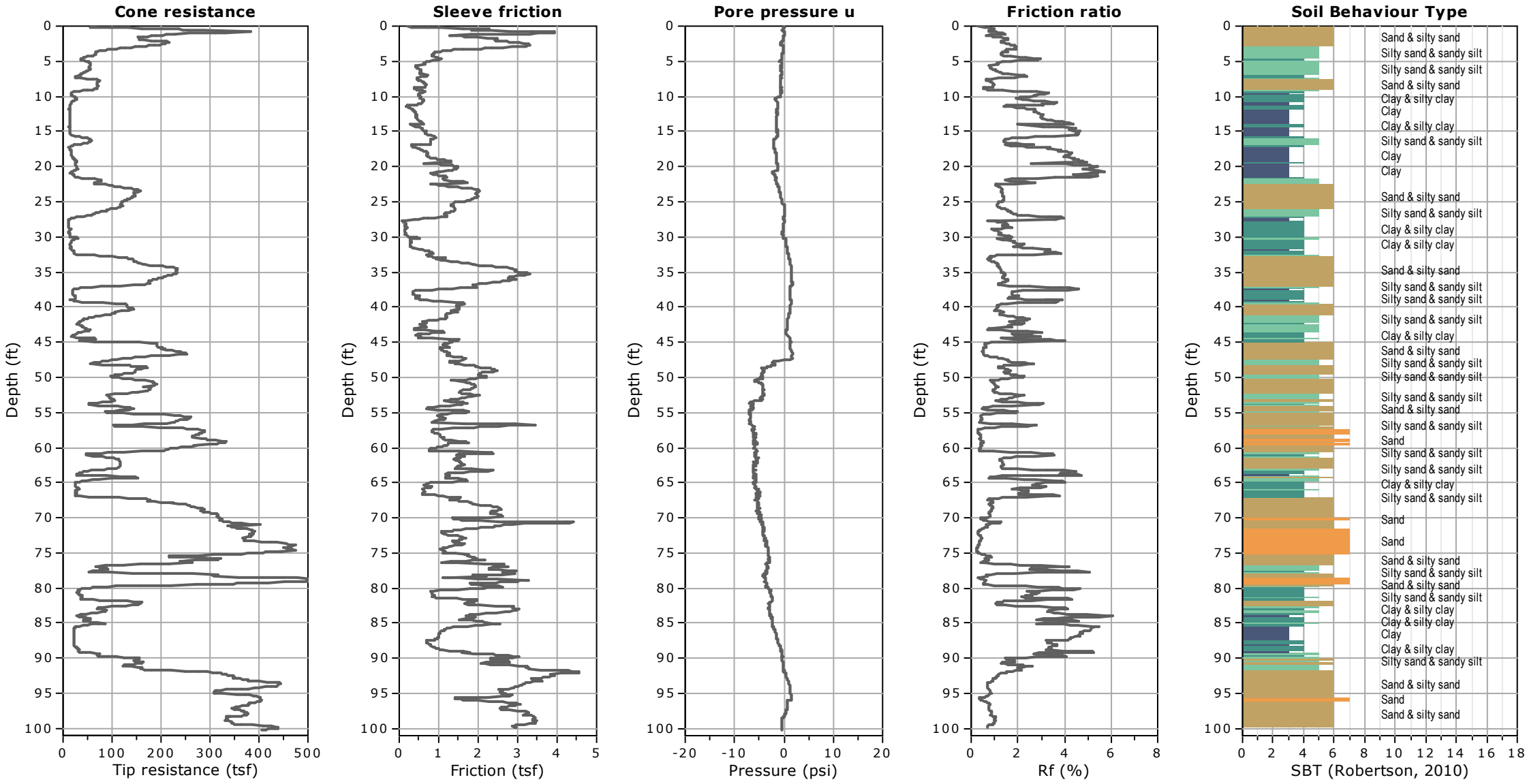
10/29/20-wt-2184

APPENDIX

Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Converse Consultants**
Location: **501 & 601 E. Compton Blvd, Compton, CA**

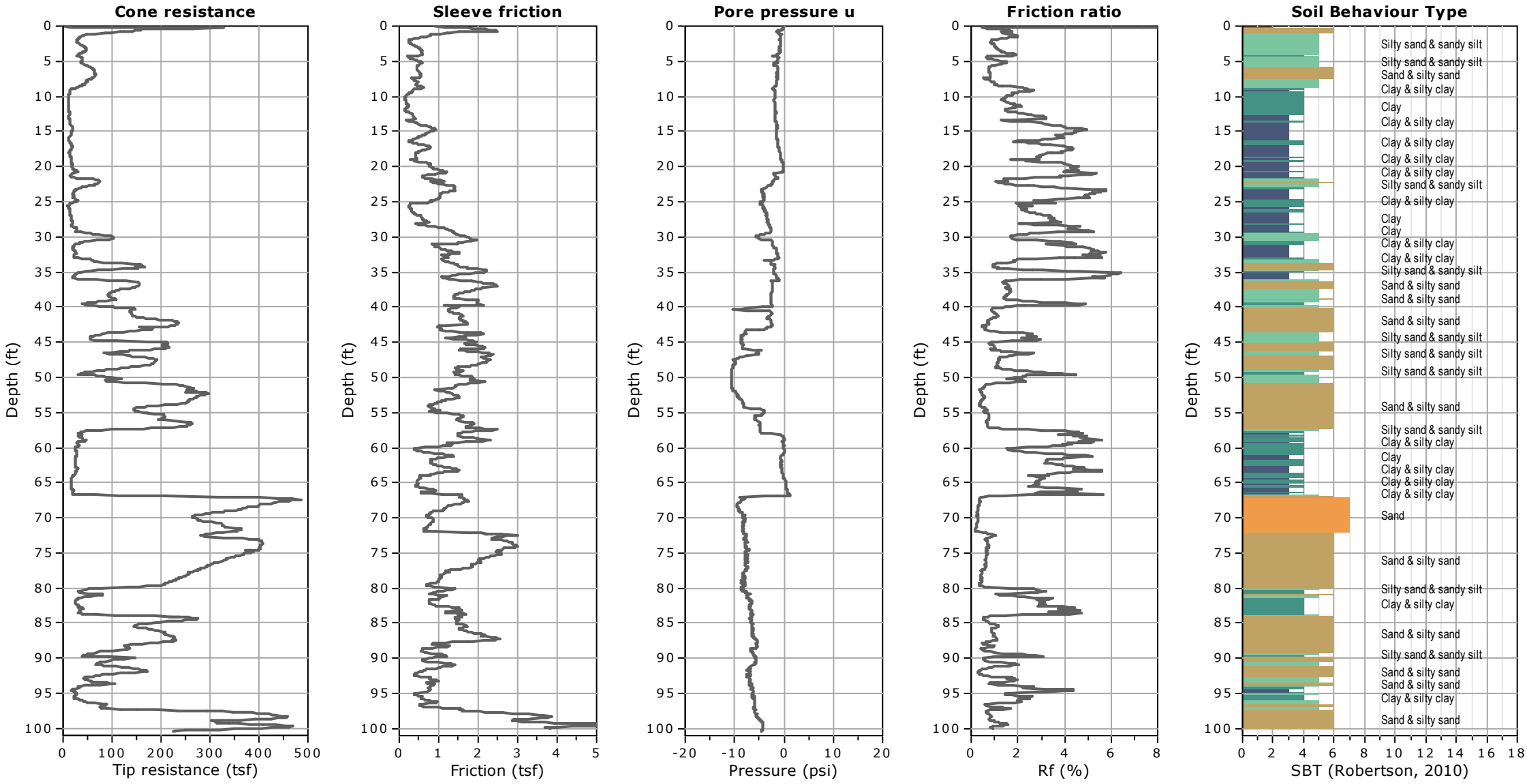
CPT-1
Total depth: 100.21 ft, Date: 10/28/2020



Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Converse Consultants**
Location: **501 & 601 E. Compton Blvd, Compton, CA**

CPT-2
Total depth: 100.35 ft, Date: 10/28/2020



Kehoe Testing & Engineering
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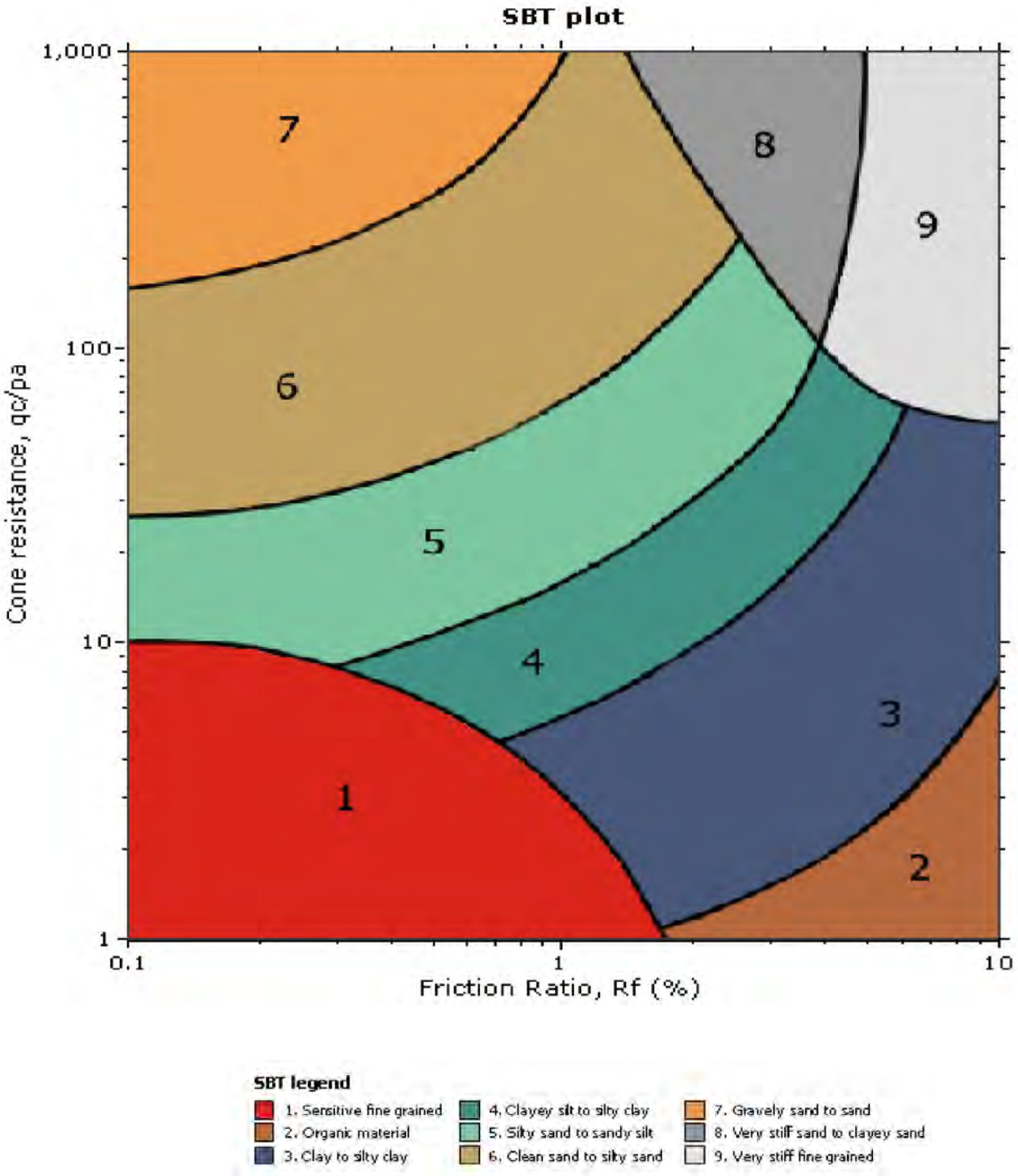


Appendix B

Laboratory Testing Program

APPENDIX B: LABORATORY TESTING PROGRAM

Tests were conducted in our laboratory on representative soil samples for the purpose of classification and evaluation of their relevant physical characteristics and engineering properties. The amount and selection of tests were based on the geotechnical requirements of the project. Test results are presented herein and on the Logs of Borings in Appendix A, *Field Exploration*. The following is a summary of the laboratory tests conducted for this project.

Moisture Content and Dry Density

Results of moisture content and dry density tests performed on relatively undisturbed ring samples were used to aid in the classification of the soils and to provide quantitative measure of the *in-situ* dry density. Data obtained from this test provides qualitative information on strength and compressibility characteristics of site soils. Moisture Content and Dry Density Tests were performed in general accordance with the ASTM Standard D2216, and D7263 test method, respectively. For test results, see the Logs of Borings in Appendix A, *Field Exploration*.

Soil Corrosivity

Two (2) representative soil sample were tested to determine minimum electrical resistivity, pH, and chemical content, including chloride concentrations, and soluble sulfate. The purpose of these tests is to determine the corrosion potential of site soils when placed in contact with common construction materials. These tests were performed by EGL in Arcadia, California. The pH and Saturated Resistivity Tests were performed in accordance with CT 643, the Soluble Chlorides Test is performed in accordance with CT 422, and the Soluble Sulfate Test is performed in accordance with CT 417. The corrosivity of soil is discussed according to Caltrans Corrosive Guidelines (2012) in section 7.7 of this report. The test results received from EGL are included in the following table:

Table No. B-1, Corrosivity Test Results

Boring No.	Sample Depth (feet)	pH (Caltrans 643)	Soluble Chlorides (Caltrans 422) ppm	Soluble Sulfate (Caltrans 417) (%)	Saturated Resistivity (Caltrans 643) Ohm-cm
BH-1	0-5	8.27	125	0.003	4,800
BH-4	30-31.5	7.93	190	0.055	910

R-Value

One (1) representative bulk soil sample was tested for resistance value (R-value) in accordance with ASTM D2844 Standard. This test is designed to provide a relative measure of soil strength for use in pavement design. The test results are shown in the following table:

Table No. B-2, R-value Test Result

Boring No.	Depth (feet)	Soil Classification	Measured R-value
BH-3	0-5	Silty Sand (SM)	53

Percent Finer Than Sieve No. 200

The percent finer than sieve No. 200 tests were performed on seven (7) selected soil samples to aid in the classification of the on-site soils and to estimate other engineering parameters. Testing was performed in general accordance with the ASTM Standard D1140 test method. The test results are presented in the table below and included in boring logs.

Table No. B-3, Summary of Percent Passing Sieve #200 Test Results

Boring No.	Depth (feet)	Soil Classification	Percent Passing Sieve No. 200
BH-1	10-11.5	Lean Clay (CL)	86.3
BH-1	20-21.5	Sandy Lean Clay (CL)	54.5
BH-1	40-41.5	Sandy Silt (ML)	52.4
BH-1	50-51.5	Silty Sand (SM)	43.5
BH-4*	0-5	Sandy Silt (ML)	51.0
BH-4	15-16.5	Lean Clay (CL)	91.1
BH-4	35-36.5	Silty Sand (SM)	30.0
BH-4	45-46.5	Silty Sand (SM)	31.3
BH-6*	0-5	Sandy Silt (ML)	54.3

* Results from grain-size analysis

Expansion Index Test

One (1) representative bulk sample was tested to evaluate the expansion potential of material encountered at the site. The test was conducted in accordance with ASTM D4829 Standard. Test results are presented in the following table:

Table No. B-4, Expansion Index Test Result

Boring No.	Depth (feet)	Soil Description	Expansion Index	Expansion Potential
BH-2	0-5	Sandy Silt (ML)	2	Very Low

Grain-Size Analysis

To assist in classification of soils, mechanical grain-size analysis was performed on two (2) selected samples. Testing was performed in general accordance with the ASTM Standard D6913 test method. Grain-size distribution curves are shown in Drawing No. B-1, *Grain Size Distribution Results*.

Atterberg Limits

Atterberg limits test was performed on one (1) sample to assist the classification of the soil and fill materials according to ASTM Standard D4318 test method. The test results are presented in the following table and on Drawing No. B-2, *Atterberg Limits Results*.

Table No. B-5 Atterberg Limit Test Results

Boring No.	Depth (feet)	Soil Classification	Liquid Limit (%)	Plastic Limit (%)	Plastic Index (%)
BH-4	25	Lean Clay (CL)	35	23	12

Maximum Dry Density Test

One (1) laboratory maximum dry density-moisture content relationship test was performed on a representative bulk sample of the upper 5 feet of soil material. The testing was conducted in accordance with ASTM Standard D1557 laboratory procedure. The test result is presented on Drawing No. B-3, *Moisture-Density Relationship Results*.

Direct Shear

Direct shear tests were performed on three (3) undisturbed soil samples. Tests were conducted in accordance with ASTM Standard D3080-11 laboratory procedure. For each test, three samples contained in brass sampler rings were placed, one at a time, directly into the test apparatus and subjected to a range of normal loads appropriate for the anticipated conditions. The samples were then sheared at a constant strain rate of 0.025 inch/minute. Shear deformation was recorded until a maximum of about 0.50-inch shear displacement was achieved. Ultimate strength was selected from the shear-stress deformation data and plotted to determine the shear strength parameters. For test data, including sample density, see Drawing Nos. B-4a through B-4c, *Direct Shear Test Results,* and the following table:

Table No. B-6, Direct Shear Test Results

Boring No.	Depth (feet)	Soil Classification	Peak Strength Parameters	
			Friction Angle (degrees)	Cohesion (psf)
BH-2	35	Silty Sand (SM)	30	300
BH-4	50	Silty Sand (SM)	31	150
BH-6	10	Sandy Clay (CL)	24	300

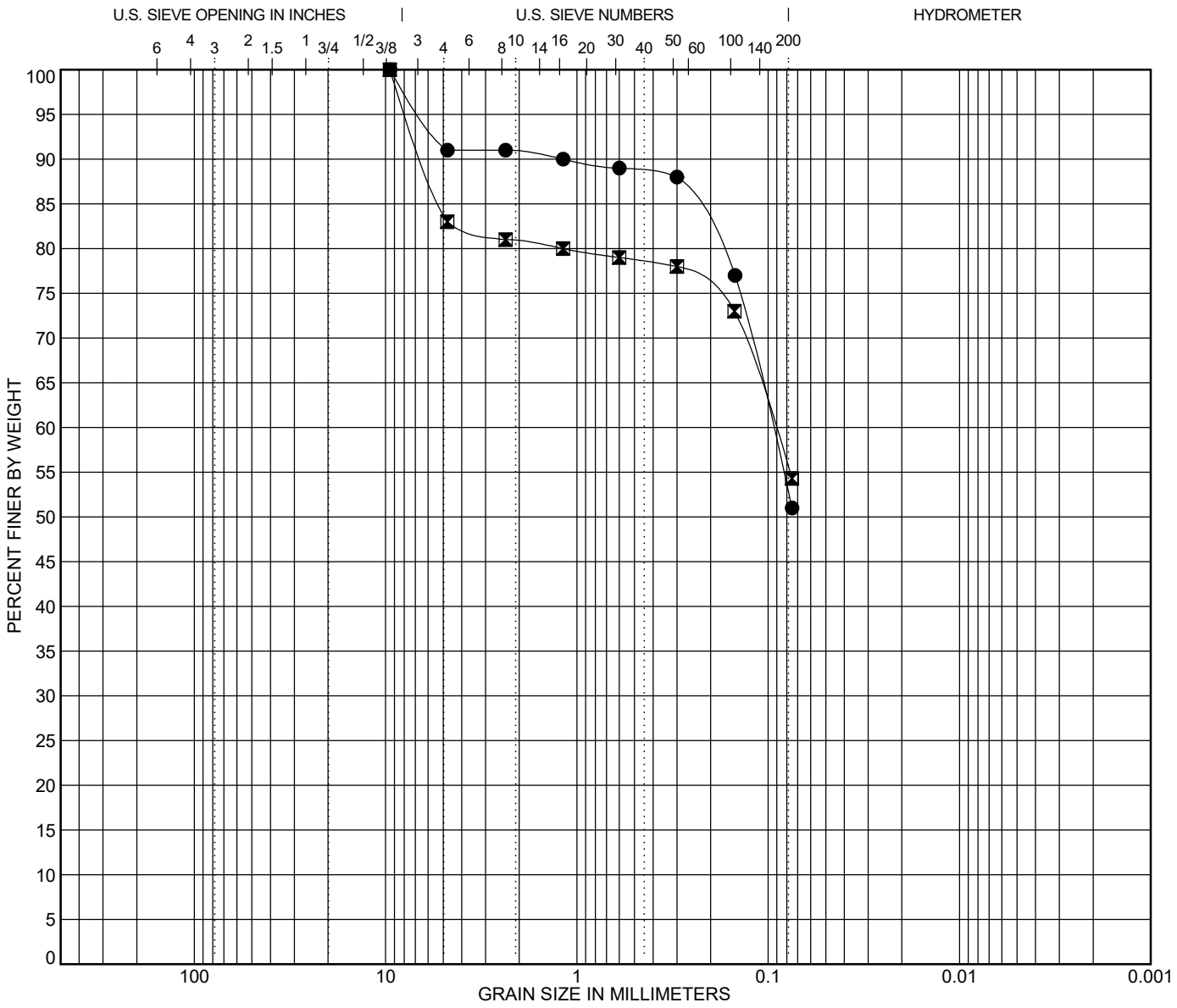
Consolidation Test

Consolidation tests were performed on two (2) relatively undisturbed samples. Data obtained from this test was used to evaluate the settlement characteristics of the foundation soils under load. Tests were performed in general accordance with the ASTM

Standard D2435. Preparation for this test involved trimming the sample and placing the 1-inch high brass ring into the test apparatus, which contained porous stones, both top and bottom, to accommodate drainage during testing. Normal axial loads were applied to one end of the sample through the porous stones, and the resulting deflections were recorded at various time periods. The load was increased after the sample reached a reasonable state equilibrium. Normal loads were applied at a constant load-increment ratio, successive loads being generally twice the preceding load. The sample was tested at field and submerged conditions. The test results, including sample density and moisture content, are presented in Drawing Nos. B-5a and B-5b, *Consolidation Test Results*.

Sample Storage

Soil samples presently stored in our laboratory will be discarded 30 days after the date of this report, unless this office receives a specific request to retain the samples for a longer period of time.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	**BH-4**	**5**	**Sandy Silt (ML), yellow brown**					
⊠	**BH-6**	**5**	**Sandy Silt (ML), olive gray**					

	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**BH-4**	**5**	**9.5**	**0.095**			**9.0**	**40.0**	**51.0**	
⊠	**BH-6**	**5**	**9.5**	**0.093**			**17.0**	**28.7**	**54.3**	

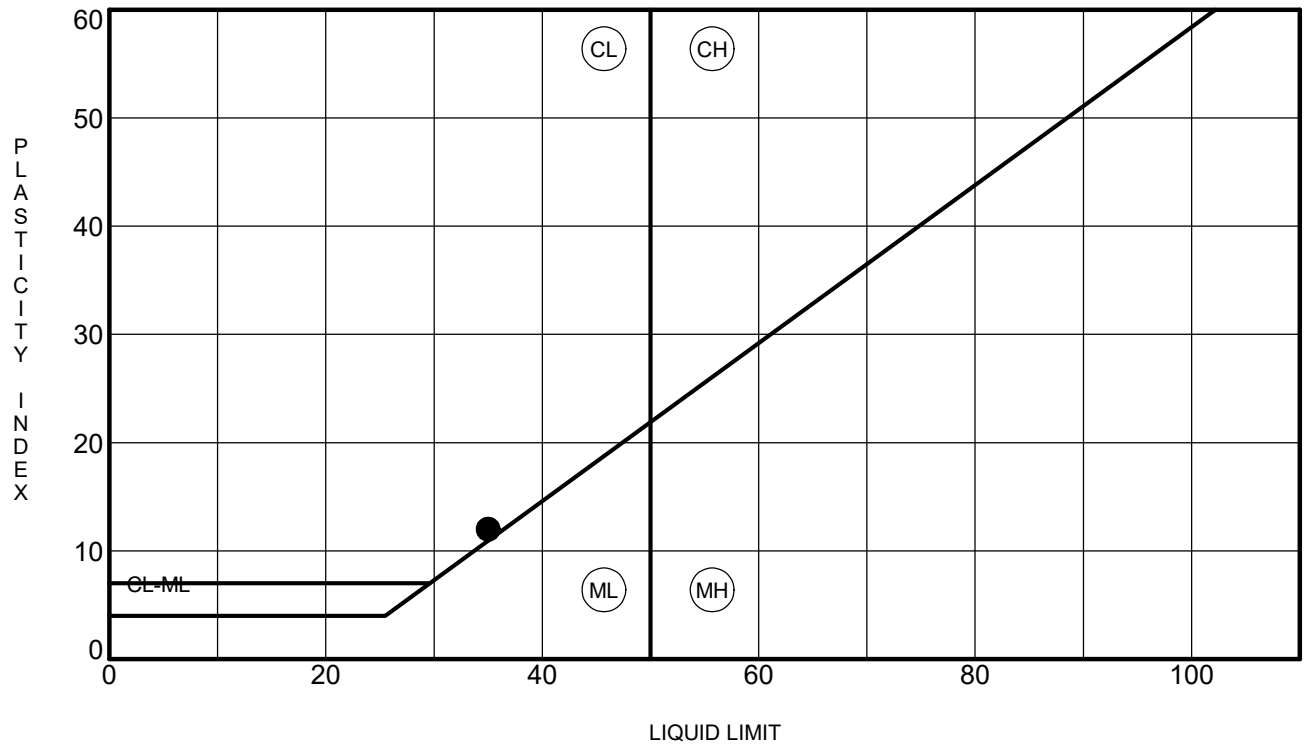
GRAIN SIZE DISTRIBUTION RESULTS

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No.
20-31-295-01

Drawing No.
B-1



Symbol	Boring No.	Depth (ft)	LL (%)	PL (%)	PI (%)	Description
●	**BH-4**	**25**	**35**	**23**	**12**	**Lean Clay (CL)**

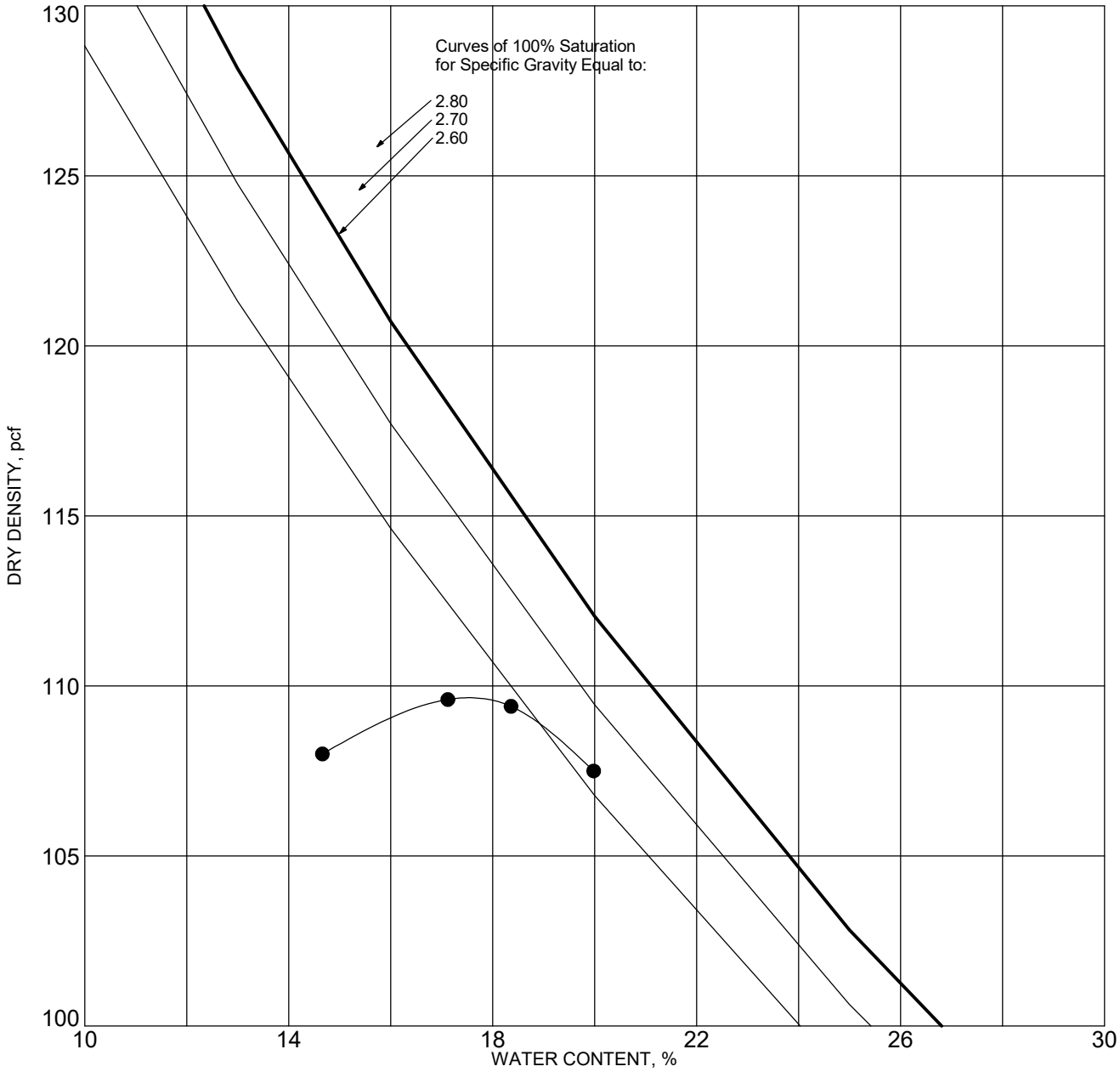
ATTERBERG LIMITS RESULTS

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No.
20-31-295-01

Drawing No.
B-2



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	BH-2	5	Sandy Silt (ML), light brown	D1557 Method A	18	110

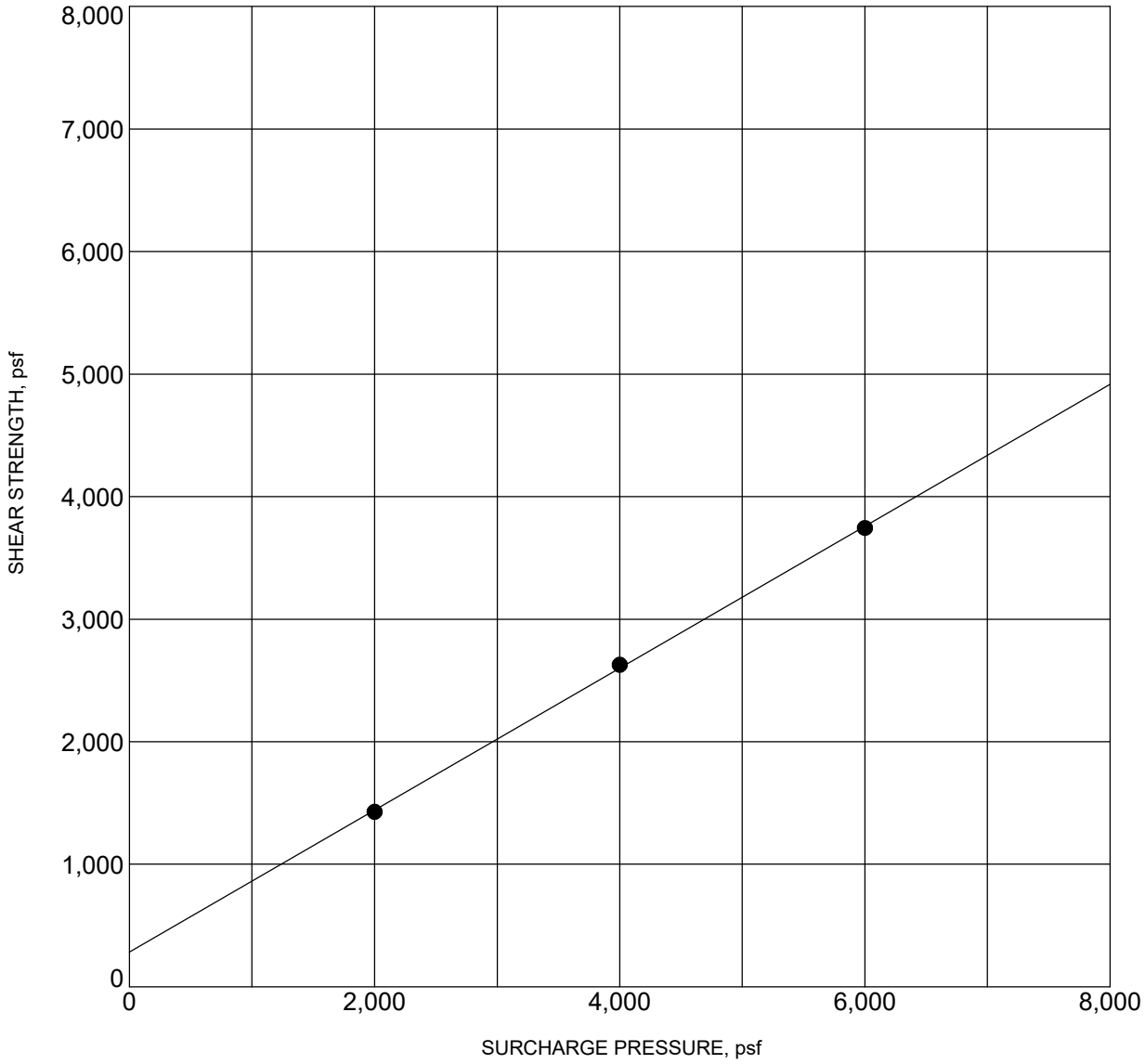
MOISTURE-DENSITY RELATIONSHIP RESULTS

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No.
20-31-295-01

Drawing No.
B-3



BORING NO.	:	**BH-2**	DEPTH (ft)	:	**35**
DESCRIPTION	:	**Silty Sand (SM)**			
COHESION (psf)	:	**300**	FRICTION ANGLE (degrees):		**30**
MOISTURE CONTENT (%)	:	**24.0**	DRY DENSITY (pcf)	:	**96.1**

NOTE: Ultimate Strength.

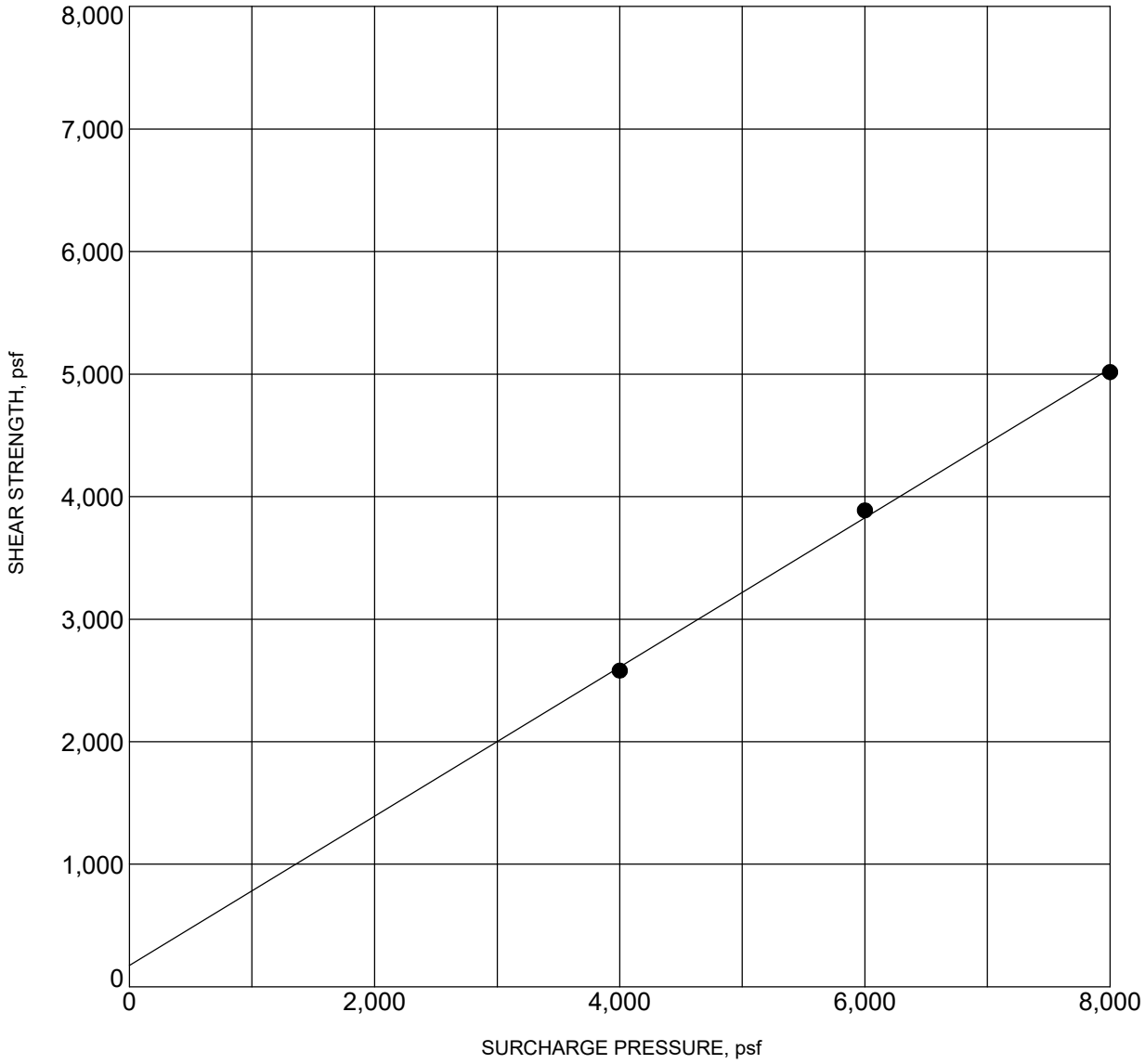
DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **B-4a**



BORING NO.	:	**BH-4**	DEPTH (ft)	:	**50**
DESCRIPTION	:	**Silty Sand (SM)**			
COHESION (psf)	:	**150**	FRICTION ANGLE (degrees):		**31**
MOISTURE CONTENT (%)	:	**16.0**	DRY DENSITY (pcf)	:	**116.7**

NOTE: Ultimate Strength.

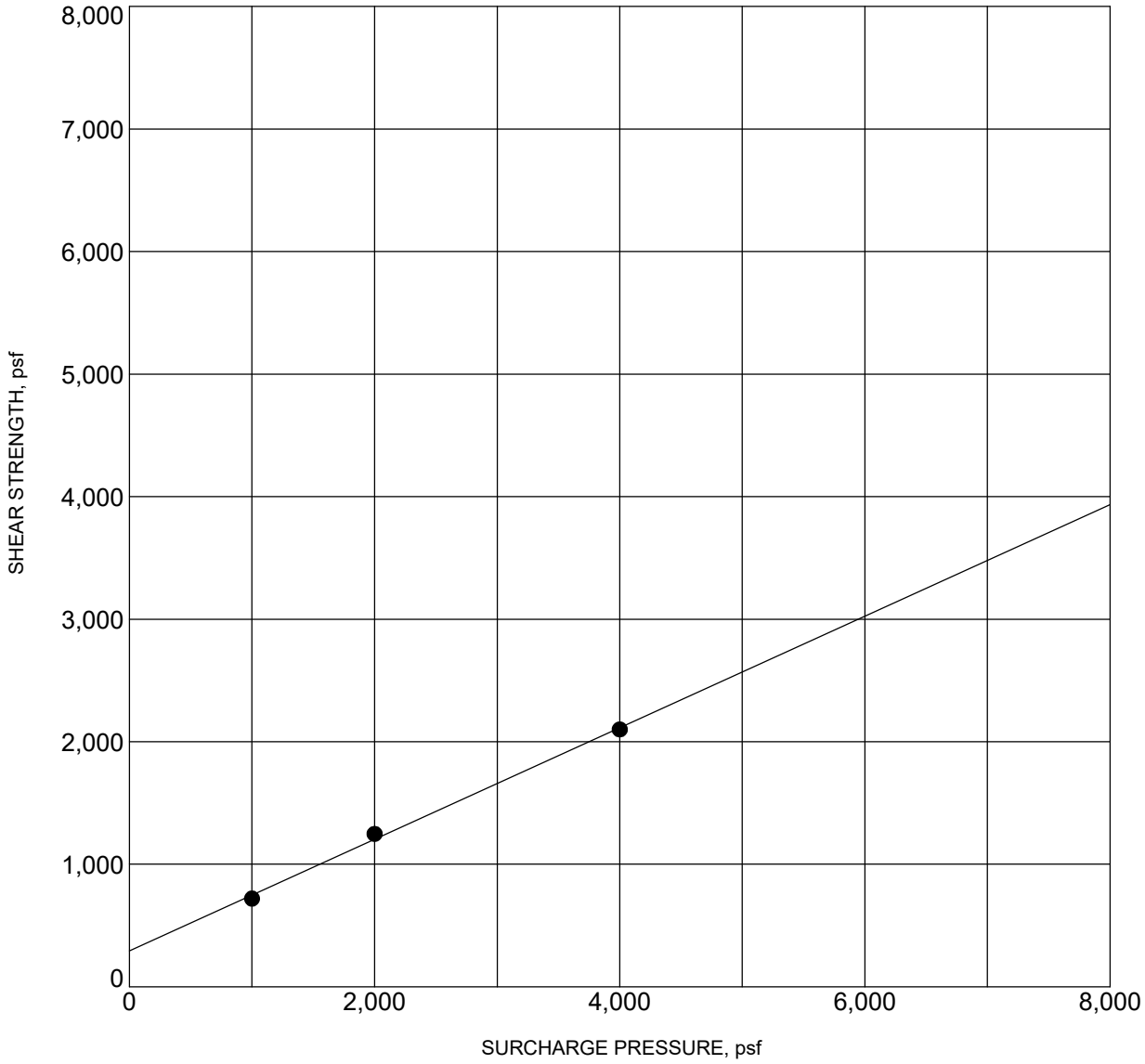
DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **B-4b**



BORING NO.	:	**BH-6**	DEPTH (ft)	:	**10**
DESCRIPTION	:	**Sandy Clay (CL)**			
COHESION (psf)	:	**300**	FRICTION ANGLE (degrees):		**24**
MOISTURE CONTENT (%)	:	**12.0**	DRY DENSITY (pcf)	:	**102.7**

NOTE: Ultimate Strength.

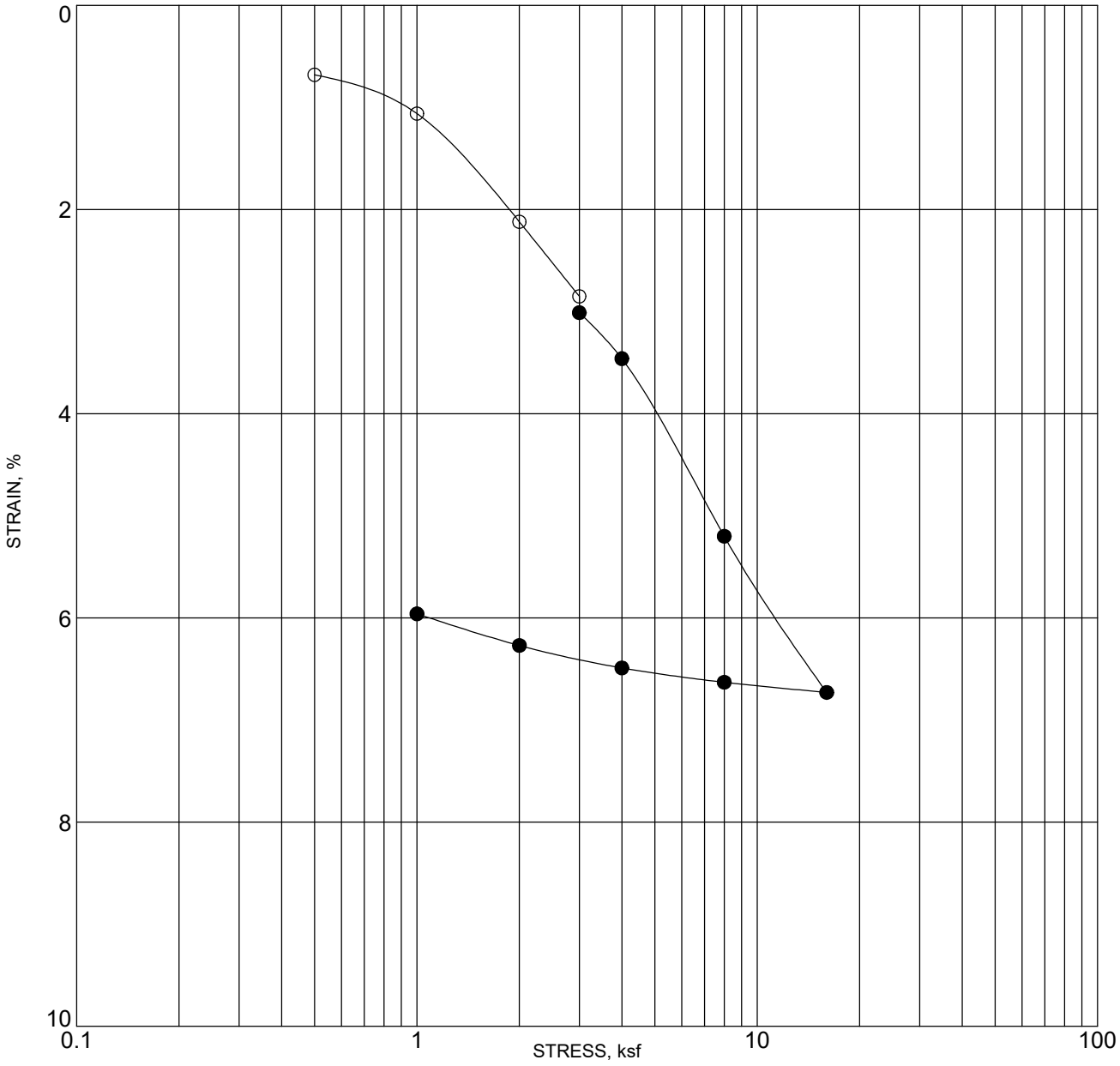
DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **B-4c**



BORING NO. :	**BH-1**	DEPTH (ft) :	**30**
DESCRIPTION :	**Clayey Sand (SC)**		

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	**9**	**105.6**	**42**	**0.562**
FINAL				

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

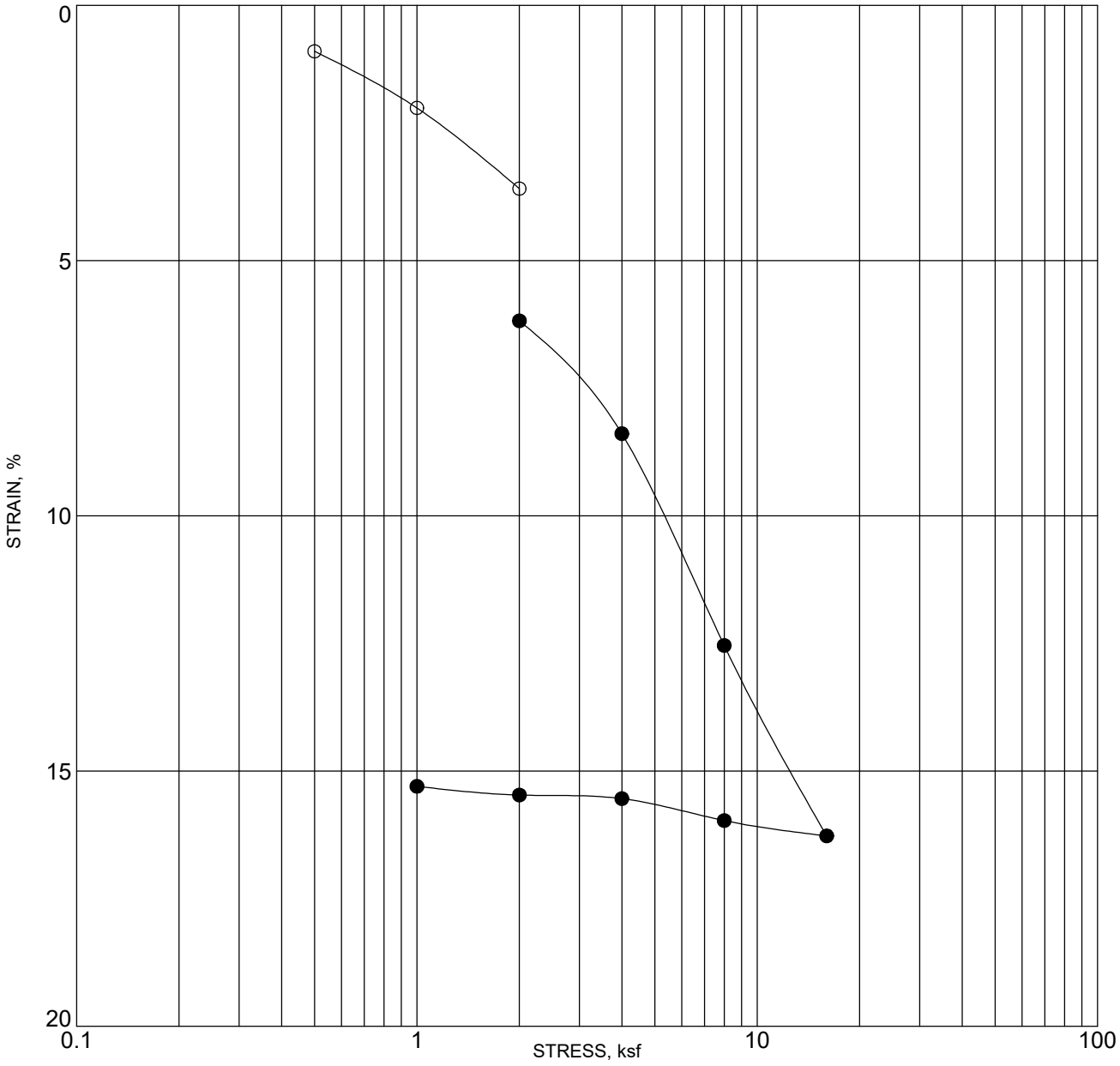
CONSOLIDATION TEST RESULTS

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **B-5a**



BORING NO. :	BH-6	DEPTH (ft) :	15
DESCRIPTION :	Sandy Silt (ML)		

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	14	100.6	58	0.640
FINAL				

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

CONSOLIDATION TEST RESULTS

Converse Consultants

Project Name
Mixed Use Project
501/601 East Compton Boulevard
Compton, CA

Project No. **20-31-295-01**

Drawing No. **B-5b**

Appendix C

Liquefaction/Seismic Settlement Analysis

APPENDIX C: LIQUEFACTION/SEISMIC SETTLEMENT ANALYSIS

Liquefaction is defined as the phenomenon where a soil mass exhibits a substantial reduction in its shear strength. This strength reduction is due to the development of excess pore pressure in a soil mass caused by earthquake induced ground motions. Saturated soils behave temporarily as a viscous fluid (liquefaction) and, consequently, lose their capacity to support the structures founded on them. The potential for liquefaction decreases with increasing clay and gravel content but increases as the ground acceleration and duration of shaking increase. Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within 50 feet of the ground surface.

Our liquefaction analyses are based on the *Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California* (9/2008), *Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California* (3/1999), and *2019 California Building Code*.

The subsurface data obtained from exploratory borings were used to evaluate the liquefaction/seismic settlement potential of the area. The Log of Borings is presented in Appendix A, *Field Exploration*. The liquefaction potential and seismic settlement analyses were performed utilizing data obtained from CPT-1 and CPT-2 for the upper 100 feet of soil. The analyses were performed using *CLiq,* Version 2.3.1.15, 2018, by GEOLOGISMIKI. The following seismic parameters are used for liquefaction potential analyses.

Table No. C-1 Seismic Parameters Used in Liquefaction Analysis

Groundwater Depth* (feet)	Earthquake Magnitude** Mw	Peak Ground Acceleration*** (g)
8	7.3	0.778

* Based on Seismic Hazard Zone Report for the South Gate 7.5-Minute Quadrangle, Historical High Level
** Based on the 2014 NSHMP PSHA Interactive Deaggregation web site for a return period of 2475 years
*** Based on PGA_M per section 21.5 of ASCE 7-16.

The results of liquefaction analyses indicate the site soils are susceptible to liquefaction. The estimated potential seismically induced settlement ranges from approximately 1.2 to 1.5 inches with potential differential settlement ranging from approximately 0.60 to 0.75 inches in 30 feet. The project structural engineer should consider the effect of these settlements on foundation design.

Converse Consultants
717 South Myrtle Avenue
Monrovia, CA 91016
http://www.converseconsultants.com

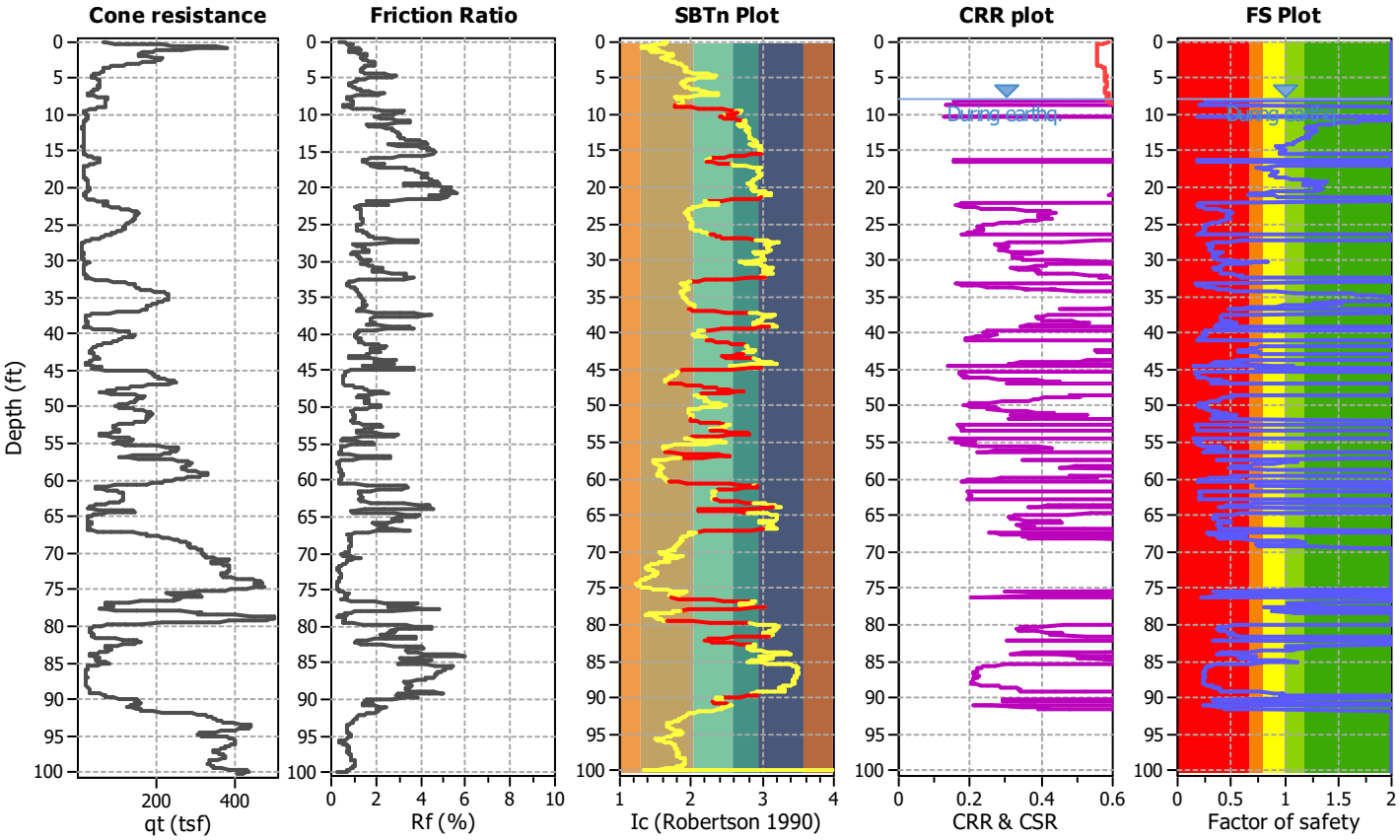
LIQUEFACTION ANALYSIS REPORT

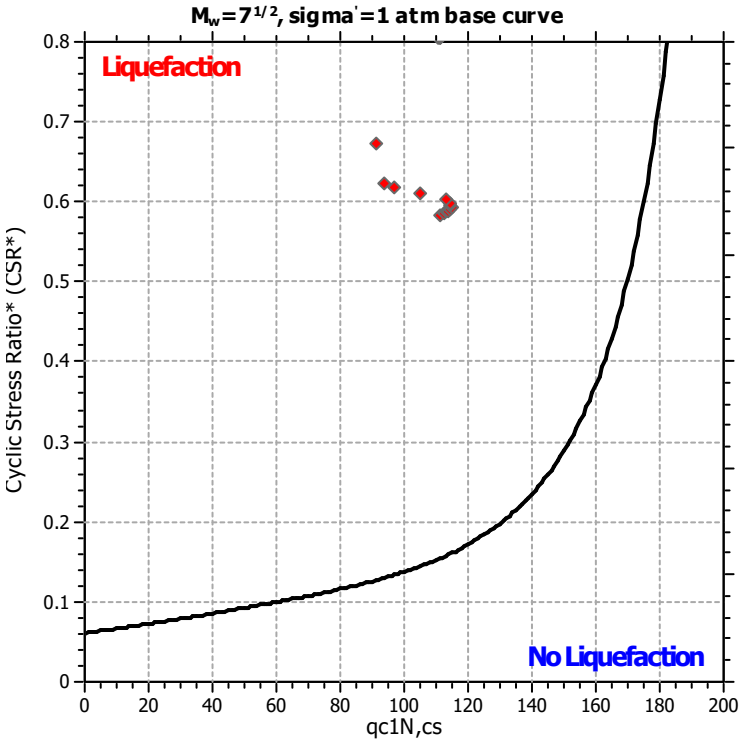
Project title : **Location :**

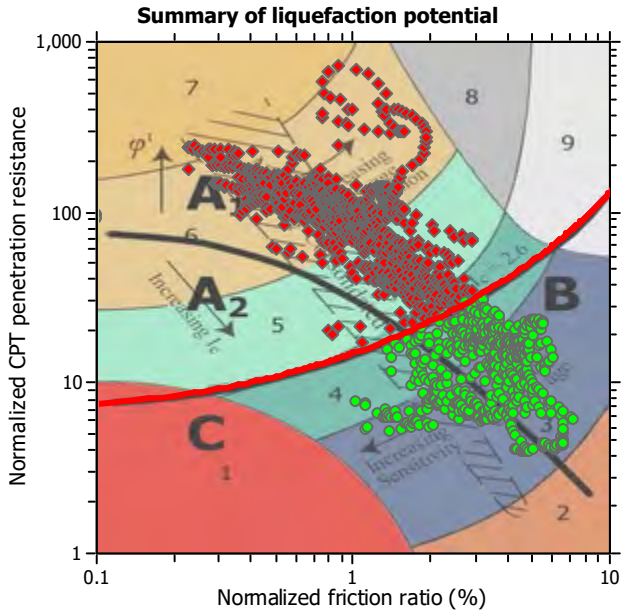
CPT file : CPT-1

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	45.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	8.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	7.30	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.78	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

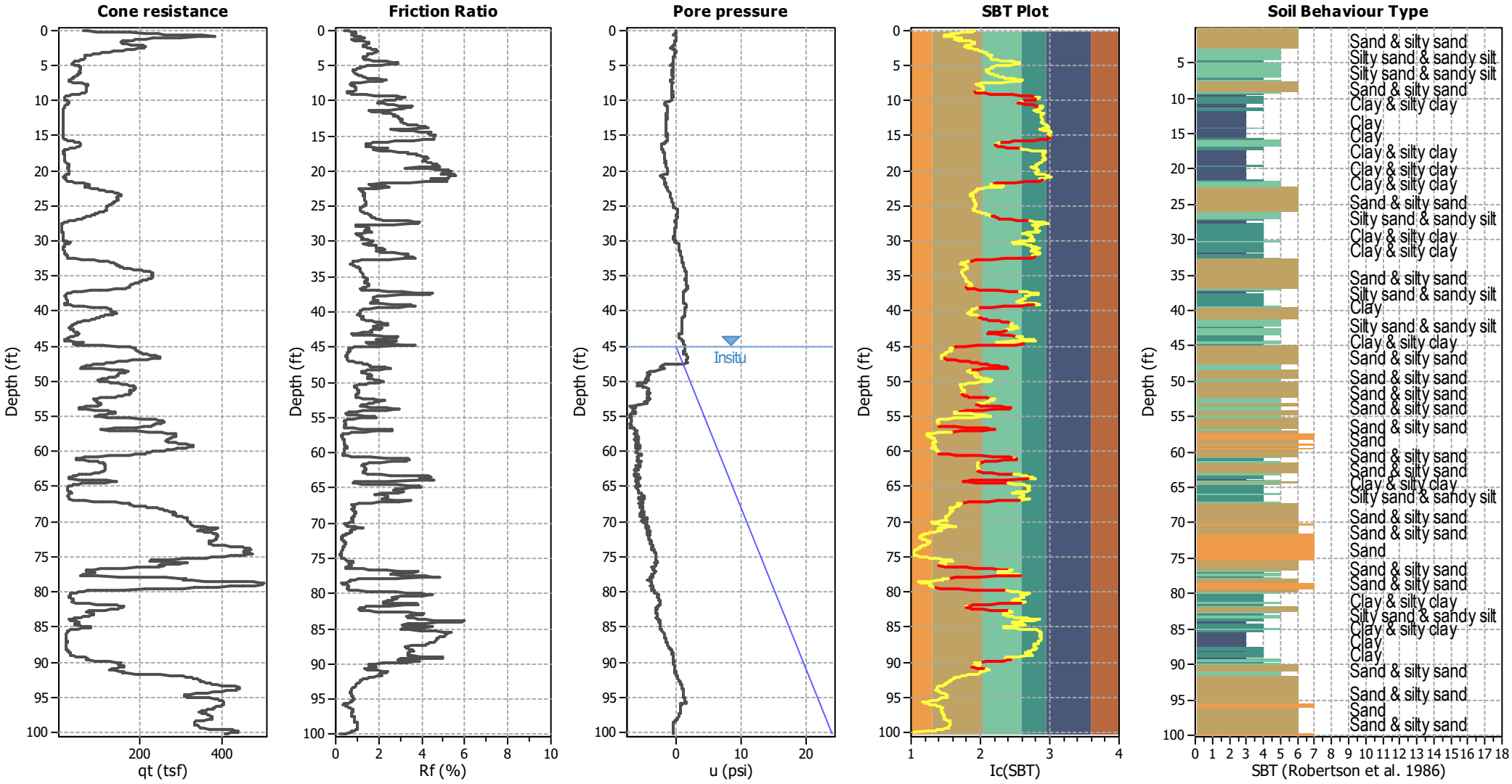






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



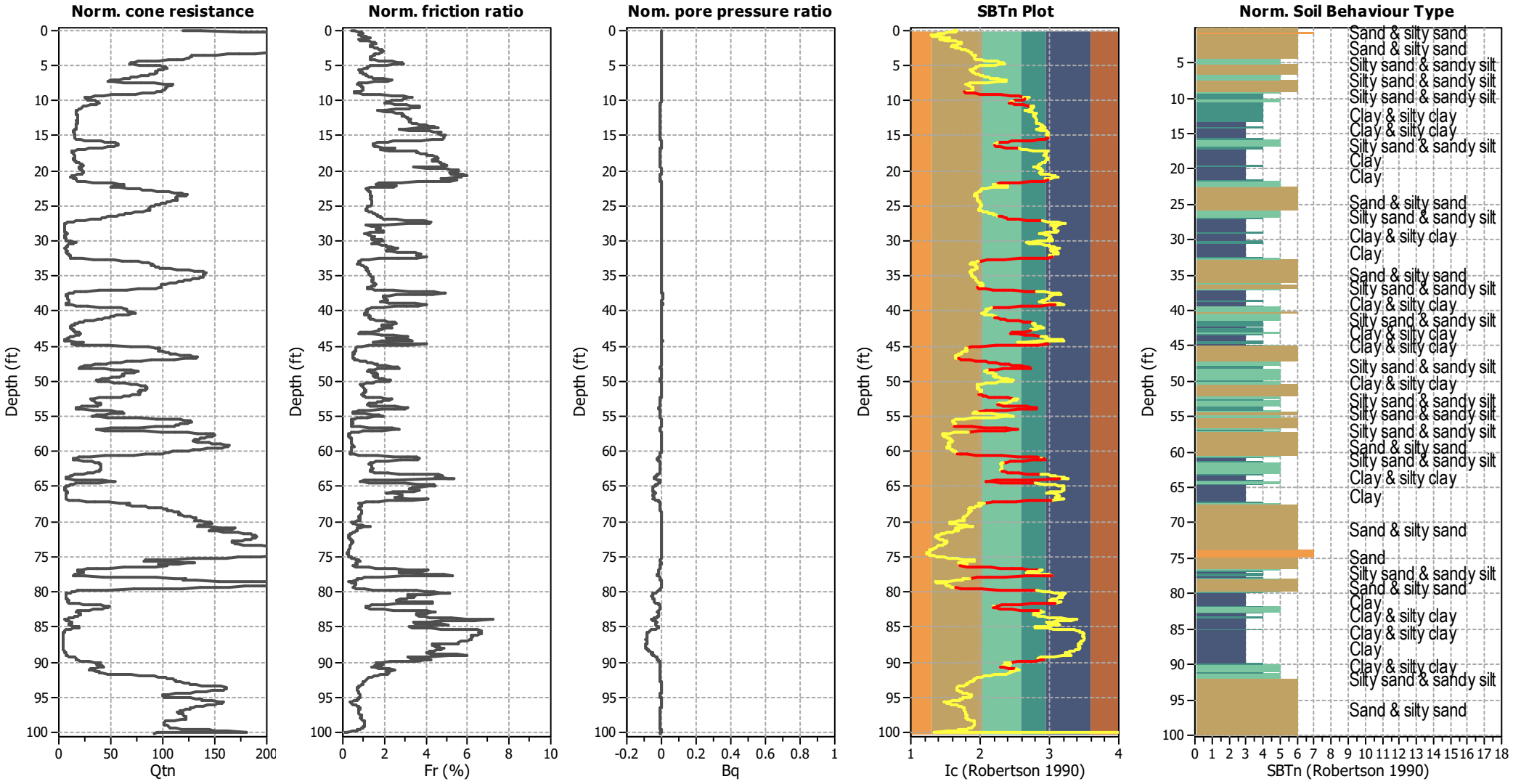
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

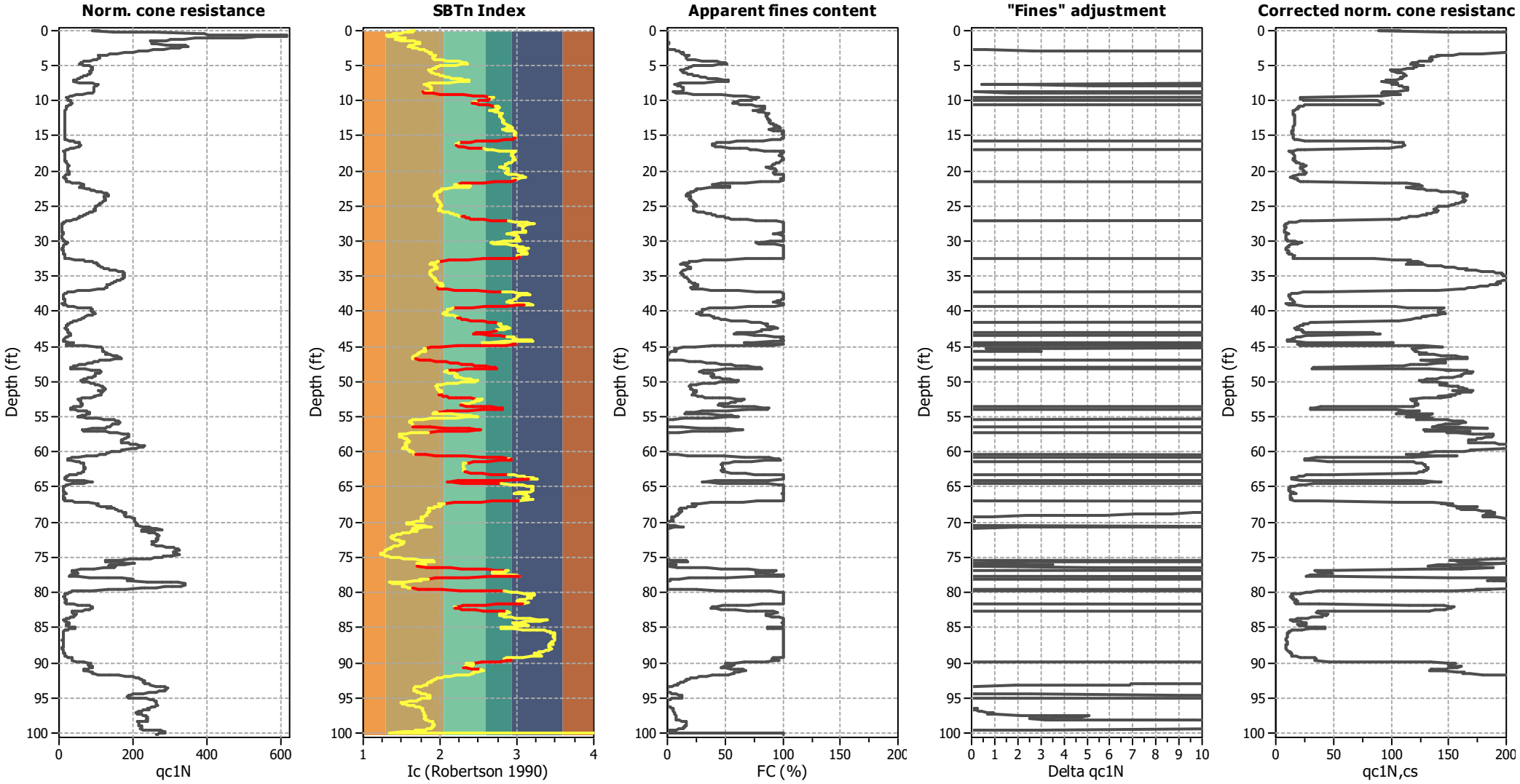
CPT basic interpretation plots (normalized)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

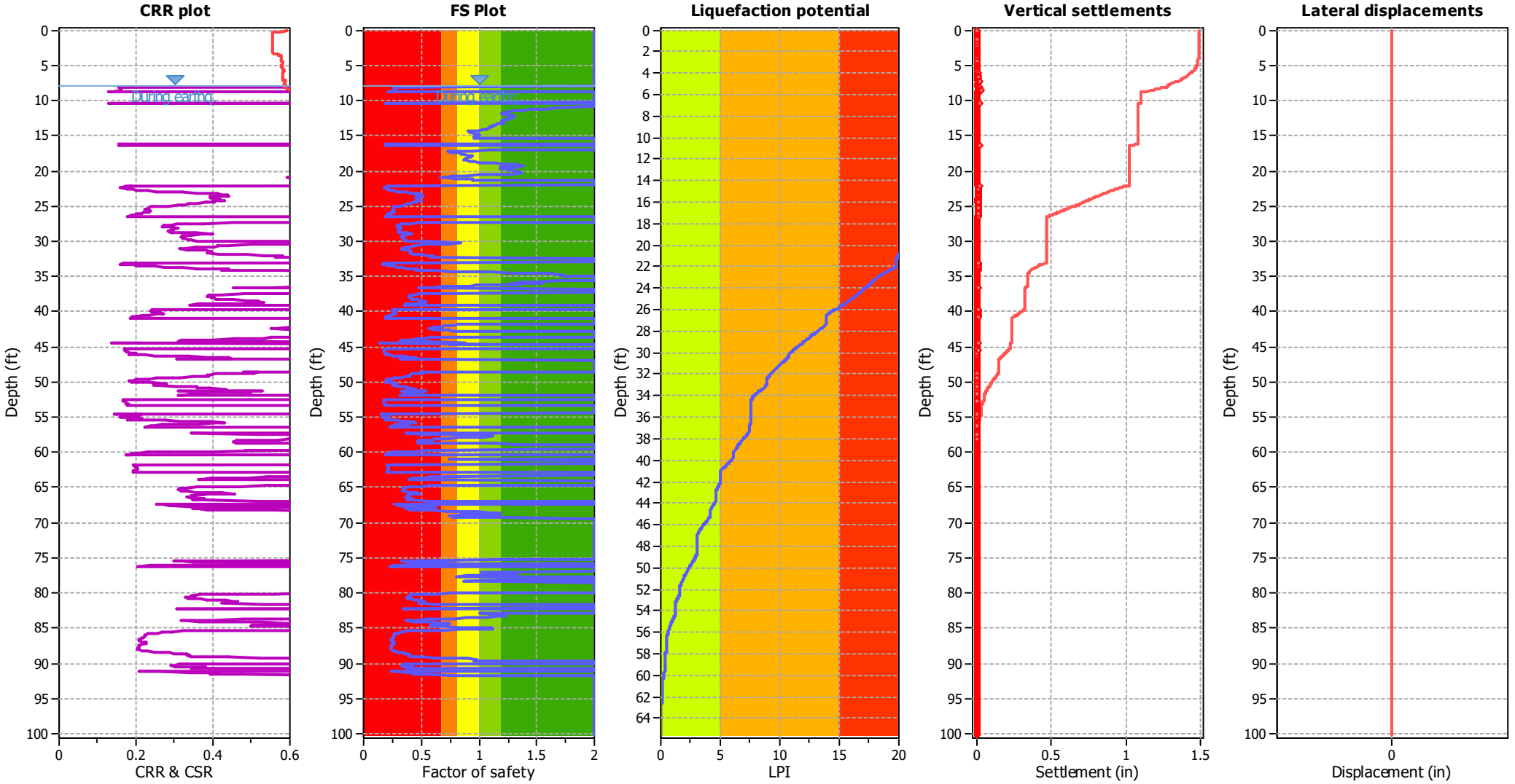
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

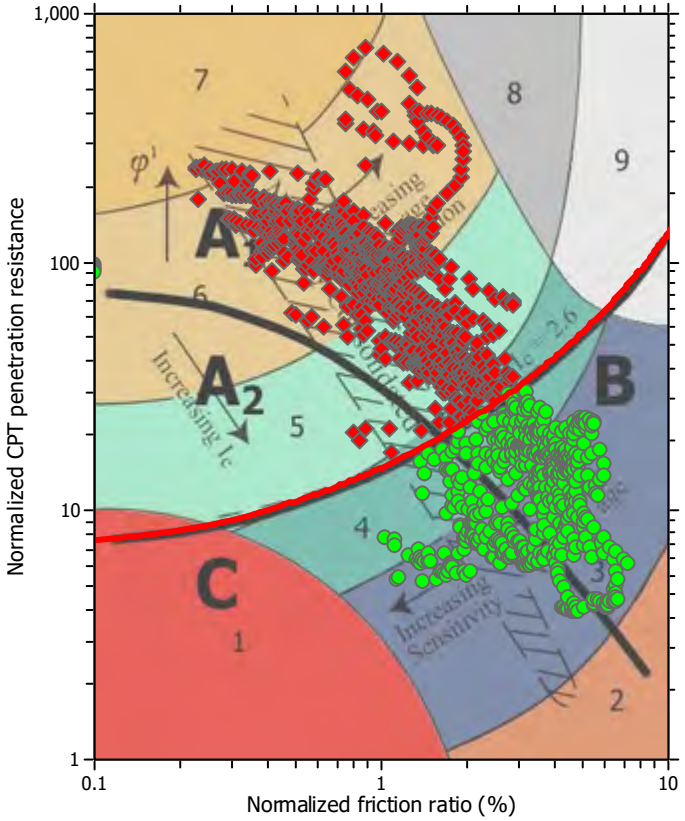
F.S. color scheme

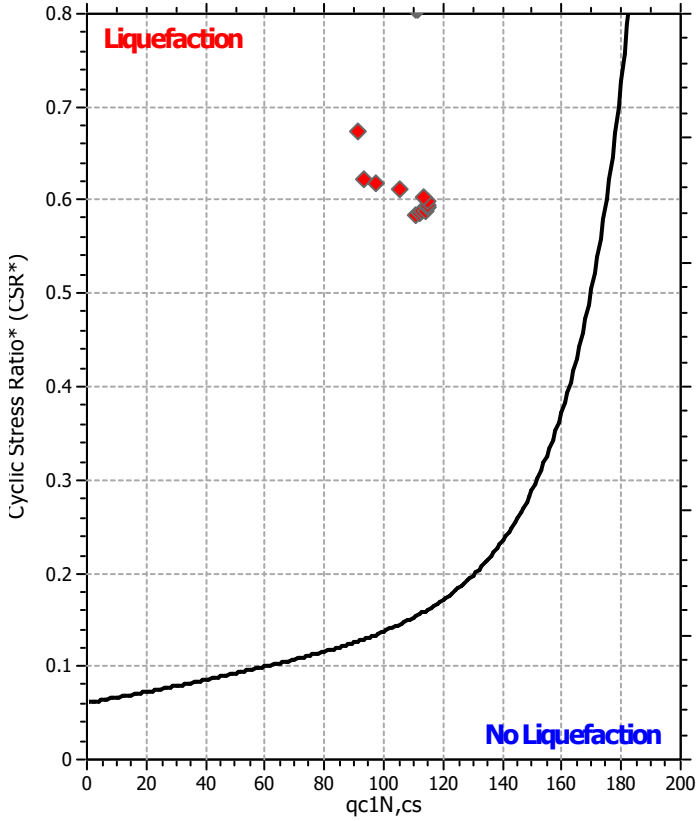
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

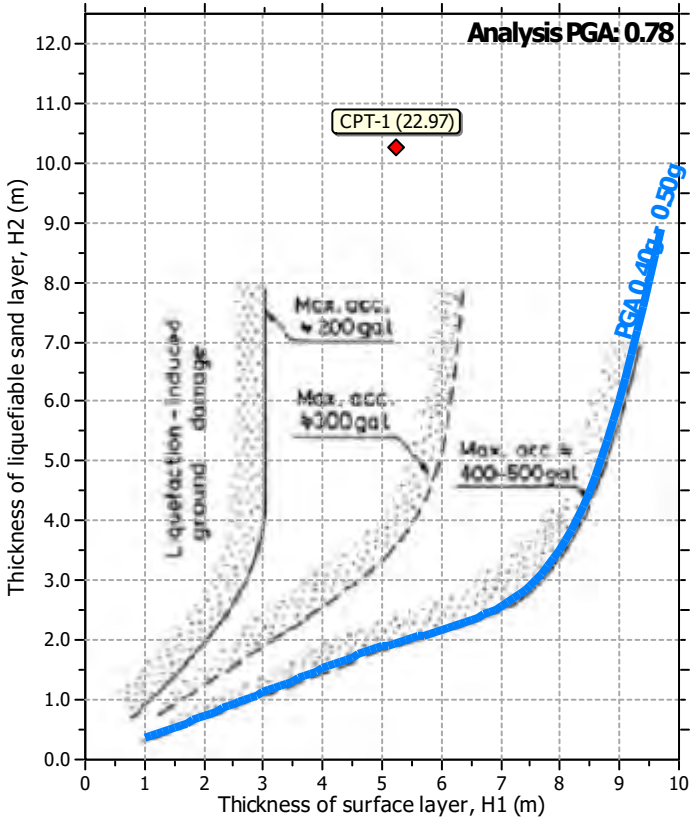
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



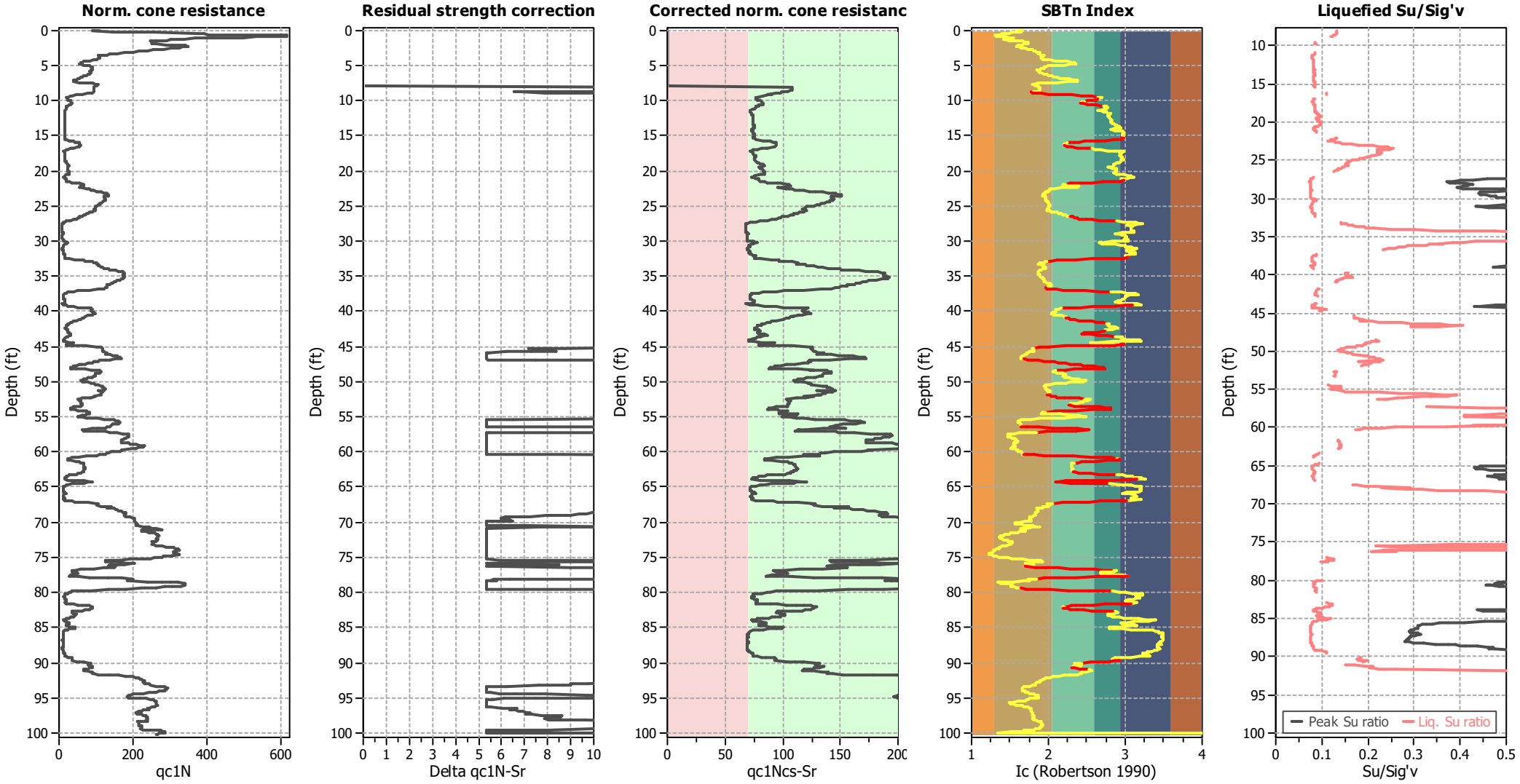




Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.07	2.00	0.00	9.99	0.08	0.00	0.14	2.00	0.00	9.98	0.08	0.00
0.22	2.00	0.00	9.97	0.08	0.00	0.27	2.00	0.00	9.96	0.05	0.00
0.34	2.00	0.00	9.95	0.07	0.00	0.44	2.00	0.00	9.93	0.10	0.00
0.50	2.00	0.00	9.92	0.07	0.00	0.56	2.00	0.00	9.91	0.06	0.00
0.61	2.00	0.00	9.91	0.05	0.00	0.68	2.00	0.00	9.90	0.07	0.00
0.74	2.00	0.00	9.89	0.06	0.00	0.79	2.00	0.00	9.88	0.06	0.00
0.86	2.00	0.00	9.87	0.06	0.00	0.94	2.00	0.00	9.86	0.09	0.00
1.00	2.00	0.00	9.85	0.06	0.00	1.07	2.00	0.00	9.84	0.07	0.00
1.13	2.00	0.00	9.83	0.06	0.00	1.20	2.00	0.00	9.82	0.07	0.00
1.26	2.00	0.00	9.81	0.06	0.00	1.40	2.00	0.00	9.79	0.14	0.00
1.44	2.00	0.00	9.78	0.04	0.00	1.48	2.00	0.00	9.77	0.04	0.00
1.51	2.00	0.00	9.77	0.03	0.00	1.58	2.00	0.00	9.76	0.07	0.00
1.67	2.00	0.00	9.75	0.09	0.00	1.71	2.00	0.00	9.74	0.04	0.00
1.78	2.00	0.00	9.73	0.07	0.00	1.85	2.00	0.00	9.72	0.07	0.00
1.91	2.00	0.00	9.71	0.06	0.00	1.97	2.00	0.00	9.70	0.06	0.00
2.04	2.00	0.00	9.69	0.07	0.00	2.10	2.00	0.00	9.68	0.06	0.00
2.20	2.00	0.00	9.66	0.10	0.00	2.25	2.00	0.00	9.66	0.05	0.00
2.32	2.00	0.00	9.65	0.07	0.00	2.38	2.00	0.00	9.64	0.06	0.00
2.47	2.00	0.00	9.62	0.09	0.00	2.51	2.00	0.00	9.62	0.04	0.00
2.59	2.00	0.00	9.61	0.07	0.00	2.65	2.00	0.00	9.60	0.06	0.00
2.70	2.00	0.00	9.59	0.06	0.00	2.78	2.00	0.00	9.58	0.08	0.00
2.82	2.00	0.00	9.57	0.04	0.00	2.91	2.00	0.00	9.56	0.08	0.00
2.96	2.00	0.00	9.55	0.05	0.00	3.03	2.00	0.00	9.54	0.07	0.00
3.11	2.00	0.00	9.53	0.08	0.00	3.18	2.00	0.00	9.52	0.07	0.00
3.22	2.00	0.00	9.51	0.04	0.00	3.31	2.00	0.00	9.50	0.09	0.00
3.35	2.00	0.00	9.49	0.04	0.00	3.42	2.00	0.00	9.48	0.07	0.00
3.49	2.00	0.00	9.47	0.07	0.00	3.57	2.00	0.00	9.46	0.09	0.00
3.62	2.00	0.00	9.45	0.04	0.00	3.68	2.00	0.00	9.44	0.06	0.00
3.76	2.00	0.00	9.43	0.08	0.00	3.81	2.00	0.00	9.42	0.06	0.00
3.87	2.00	0.00	9.41	0.06	0.00	3.94	2.00	0.00	9.40	0.07	0.00
4.03	2.00	0.00	9.39	0.09	0.00	4.08	2.00	0.00	9.38	0.05	0.00
4.16	2.00	0.00	9.37	0.08	0.00	4.21	2.00	0.00	9.36	0.05	0.00
4.27	2.00	0.00	9.35	0.06	0.00	4.34	2.00	0.00	9.34	0.07	0.00
4.43	2.00	0.00	9.32	0.09	0.00	4.47	2.00	0.00	9.32	0.04	0.00
4.57	2.00	0.00	9.30	0.10	0.00	4.60	2.00	0.00	9.30	0.04	0.00
4.69	2.00	0.00	9.28	0.09	0.00	4.74	2.00	0.00	9.28	0.05	0.00
4.81	2.00	0.00	9.27	0.07	0.00	4.87	2.00	0.00	9.26	0.06	0.00
4.93	2.00	0.00	9.25	0.06	0.00	5.00	2.00	0.00	9.24	0.07	0.00
5.10	2.00	0.00	9.22	0.09	0.00	5.13	2.00	0.00	9.22	0.03	0.00
5.19	2.00	0.00	9.21	0.07	0.00	5.27	2.00	0.00	9.20	0.08	0.00
5.38	2.00	0.00	9.18	0.11	0.00	5.45	2.00	0.00	9.17	0.07	0.00
5.50	2.00	0.00	9.16	0.05	0.00	5.58	2.00	0.00	9.15	0.08	0.00
5.63	2.00	0.00	9.14	0.04	0.00	5.68	2.00	0.00	9.13	0.06	0.00
5.75	2.00	0.00	9.12	0.07	0.00	5.82	2.00	0.00	9.11	0.06	0.00
5.88	2.00	0.00	9.10	0.06	0.00	5.92	2.00	0.00	9.10	0.04	0.00
6.01	2.00	0.00	9.08	0.08	0.00	6.05	2.00	0.00	9.08	0.04	0.00
6.14	2.00	0.00	9.06	0.09	0.00	6.20	2.00	0.00	9.06	0.06	0.00
6.28	2.00	0.00	9.04	0.09	0.00	6.35	2.00	0.00	9.03	0.07	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
6.40	2.00	0.00	9.02	0.05	0.00	6.45	2.00	0.00	9.02	0.04	0.00
6.54	2.00	0.00	9.00	0.09	0.00	6.58	2.00	0.00	9.00	0.04	0.00
6.63	2.00	0.00	8.99	0.05	0.00	6.75	2.00	0.00	8.97	0.12	0.00
6.79	2.00	0.00	8.97	0.04	0.00	6.85	2.00	0.00	8.96	0.06	0.00
6.93	2.00	0.00	8.94	0.09	0.00	7.06	2.00	0.00	8.92	0.13	0.00
7.11	2.00	0.00	8.92	0.04	0.00	7.17	2.00	0.00	8.91	0.06	0.00
7.24	2.00	0.00	8.90	0.07	0.00	7.30	2.00	0.00	8.89	0.06	0.00
7.37	2.00	0.00	8.88	0.07	0.00	7.42	2.00	0.00	8.87	0.05	0.00
7.48	2.00	0.00	8.86	0.07	0.00	7.55	2.00	0.00	8.85	0.07	0.00
7.61	2.00	0.00	8.84	0.06	0.00	7.68	2.00	0.00	8.83	0.07	0.00
7.73	2.00	0.00	8.82	0.04	0.00	7.79	2.00	0.00	8.81	0.06	0.00
7.86	2.00	0.00	8.80	0.07	0.00	7.91	2.00	0.00	8.80	0.05	0.00
7.98	2.00	0.00	8.78	0.08	0.00	8.04	0.26	0.74	8.78	0.05	0.11
8.09	0.27	0.73	8.77	0.05	0.10	8.17	0.27	0.73	8.76	0.08	0.15
8.22	0.27	0.73	8.75	0.05	0.10	8.30	0.27	0.73	8.74	0.08	0.15
8.34	0.27	0.73	8.73	0.05	0.09	8.40	0.27	0.73	8.72	0.05	0.11
8.48	0.27	0.73	8.71	0.08	0.16	8.60	0.26	0.74	8.69	0.12	0.23
8.66	0.24	0.76	8.68	0.06	0.12	8.72	0.22	0.78	8.67	0.06	0.13
8.79	0.21	0.79	8.66	0.06	0.13	8.83	2.00	0.00	8.65	0.05	0.00
8.91	2.00	0.00	8.64	0.08	0.00	8.97	2.00	0.00	8.63	0.06	0.00
9.02	2.00	0.00	8.62	0.06	0.00	9.08	2.00	0.00	8.62	0.05	0.00
9.16	2.00	0.00	8.60	0.08	0.00	9.21	2.00	0.00	8.60	0.05	0.00
9.25	2.00	0.00	8.59	0.05	0.00	9.34	2.00	0.00	8.58	0.09	0.00
9.38	2.00	0.00	8.57	0.04	0.00	9.47	2.00	0.00	8.56	0.09	0.00
9.52	2.00	0.00	8.55	0.04	0.00	9.60	2.00	0.00	8.54	0.08	0.00
9.66	2.00	0.00	8.53	0.06	0.00	9.74	2.00	0.00	8.52	0.08	0.00
9.81	2.00	0.00	8.50	0.07	0.00	9.88	2.00	0.00	8.50	0.06	0.00
9.94	2.00	0.00	8.49	0.06	0.00	10.01	2.00	0.00	8.47	0.08	0.00
10.05	2.00	0.00	8.47	0.04	0.00	10.16	2.00	0.00	8.45	0.11	0.00
10.20	2.00	0.00	8.45	0.04	0.00	10.29	0.19	0.81	8.43	0.09	0.19
10.34	2.00	0.00	8.42	0.05	0.00	10.37	2.00	0.00	8.42	0.03	0.00
10.45	2.00	0.00	8.41	0.08	0.00	10.51	2.00	0.00	8.40	0.05	0.00
10.58	2.00	0.00	8.39	0.08	0.00	10.68	2.00	0.00	8.37	0.10	0.00
10.72	2.00	0.00	8.37	0.04	0.00	10.76	2.00	0.00	8.36	0.04	0.00
10.87	2.00	0.00	8.34	0.11	0.00	10.97	1.69	0.00	8.33	0.10	0.00
11.02	1.70	0.00	8.32	0.05	0.00	11.10	1.67	0.00	8.31	0.08	0.00
11.16	1.59	0.00	8.30	0.06	0.00	11.20	1.51	0.00	8.29	0.05	0.00
11.29	1.44	0.00	8.28	0.08	0.00	11.33	1.39	0.00	8.27	0.04	0.00
11.41	1.33	0.00	8.26	0.08	0.00	11.52	1.28	0.00	8.24	0.11	0.00
11.59	1.26	0.00	8.23	0.07	0.00	11.64	1.24	0.00	8.23	0.04	0.00
11.70	1.22	0.00	8.22	0.06	0.00	11.75	1.21	0.00	8.21	0.05	0.00
11.84	1.19	0.00	8.20	0.09	0.00	11.91	1.19	0.00	8.18	0.07	0.00
12.01	1.22	0.00	8.17	0.10	0.00	12.08	1.25	0.00	8.16	0.08	0.00
12.14	1.29	0.00	8.15	0.05	0.00	12.18	1.30	0.00	8.14	0.04	0.00
12.25	1.31	0.00	8.13	0.07	0.00	12.31	1.30	0.00	8.12	0.07	0.00
12.40	1.29	0.00	8.11	0.09	0.00	12.46	1.28	0.00	8.10	0.05	0.00
12.53	1.28	0.00	8.09	0.07	0.00	12.57	1.26	0.00	8.08	0.04	0.00
12.63	1.25	0.00	8.08	0.06	0.00	12.70	1.23	0.00	8.06	0.07	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
12.75	1.22	0.00	8.06	0.06	0.00	12.84	1.20	0.00	8.04	0.09	0.00
12.91	1.20	0.00	8.03	0.07	0.00	12.95	1.20	0.00	8.03	0.04	0.00
13.02	1.21	0.00	8.02	0.07	0.00	13.07	1.22	0.00	8.01	0.05	0.00
13.13	1.23	0.00	8.00	0.06	0.00	13.20	1.21	0.00	7.99	0.07	0.00
13.33	1.18	0.00	7.97	0.13	0.00	13.37	1.16	0.00	7.96	0.05	0.00
13.42	1.14	0.00	7.95	0.05	0.00	13.50	1.14	0.00	7.94	0.07	0.00
13.55	1.12	0.00	7.94	0.05	0.00	13.62	1.11	0.00	7.93	0.07	0.00
13.68	1.10	0.00	7.91	0.07	0.00	13.73	1.10	0.00	7.91	0.05	0.00
13.80	1.09	0.00	7.90	0.07	0.00	13.90	1.08	0.00	7.88	0.10	0.00
13.95	1.08	0.00	7.87	0.04	0.00	13.99	1.08	0.00	7.87	0.05	0.00
14.05	1.06	0.00	7.86	0.05	0.00	14.12	1.03	0.00	7.85	0.08	0.00
14.25	0.99	0.01	7.83	0.13	0.00	14.30	0.95	0.05	7.82	0.05	0.01
14.34	0.93	0.07	7.81	0.04	0.01	14.39	0.91	0.09	7.81	0.05	0.01
14.44	0.92	0.08	7.80	0.05	0.01	14.52	0.93	0.07	7.79	0.08	0.01
14.58	0.94	0.06	7.78	0.06	0.01	14.65	0.96	0.04	7.77	0.07	0.01
14.73	0.97	0.03	7.76	0.08	0.01	14.77	0.99	0.01	7.75	0.04	0.00
14.83	1.00	0.00	7.74	0.07	0.00	14.92	1.01	0.00	7.73	0.09	0.00
14.97	1.01	0.00	7.72	0.05	0.00	15.13	0.99	0.01	7.69	0.16	0.01
15.18	0.97	0.03	7.69	0.05	0.00	15.23	0.96	0.04	7.68	0.05	0.01
15.28	0.96	0.04	7.67	0.05	0.00	15.36	0.97	0.03	7.66	0.07	0.00
15.41	2.00	0.00	7.65	0.05	0.00	15.45	2.00	0.00	7.65	0.04	0.00
15.51	2.00	0.00	7.64	0.06	0.00	15.68	2.00	0.00	7.61	0.17	0.00
15.72	2.00	0.00	7.60	0.04	0.00	15.77	2.00	0.00	7.60	0.05	0.00
15.83	2.00	0.00	7.59	0.06	0.00	15.90	2.00	0.00	7.58	0.07	0.00
15.94	2.00	0.00	7.57	0.04	0.00	15.98	2.00	0.00	7.56	0.04	0.00
16.05	2.00	0.00	7.55	0.07	0.00	16.11	2.00	0.00	7.55	0.06	0.00
16.16	0.19	0.81	7.54	0.05	0.10	16.22	0.19	0.81	7.53	0.06	0.11
16.28	0.19	0.81	7.52	0.06	0.11	16.40	0.19	0.81	7.50	0.11	0.21
16.47	2.00	0.00	7.49	0.07	0.00	16.52	2.00	0.00	7.48	0.05	0.00
16.59	2.00	0.00	7.47	0.07	0.00	16.70	2.00	0.00	7.45	0.11	0.00
16.78	2.00	0.00	7.44	0.07	0.00	16.83	2.00	0.00	7.44	0.05	0.00
16.91	2.00	0.00	7.42	0.08	0.00	16.96	1.29	0.00	7.42	0.05	0.00
17.01	1.09	0.00	7.41	0.05	0.00	17.13	0.94	0.06	7.39	0.12	0.02
17.20	0.81	0.19	7.38	0.06	0.03	17.26	0.74	0.26	7.37	0.06	0.04
17.27	0.73	0.27	7.37	0.01	0.00	17.40	0.76	0.24	7.35	0.13	0.07
17.44	0.81	0.19	7.34	0.04	0.02	17.49	0.83	0.17	7.34	0.04	0.02
17.53	0.84	0.16	7.33	0.04	0.02	17.62	0.84	0.16	7.32	0.09	0.03
17.67	0.87	0.13	7.31	0.05	0.01	17.75	0.90	0.10	7.29	0.09	0.02
17.81	0.94	0.06	7.29	0.06	0.01	17.86	0.94	0.06	7.28	0.04	0.01
17.92	0.94	0.06	7.27	0.06	0.01	18.00	0.93	0.07	7.26	0.09	0.01
18.11	0.91	0.09	7.24	0.10	0.02	18.15	0.89	0.11	7.23	0.05	0.01
18.20	0.88	0.12	7.23	0.04	0.01	18.28	0.87	0.13	7.21	0.09	0.02
18.34	0.86	0.14	7.20	0.06	0.02	18.41	0.87	0.13	7.19	0.07	0.02
18.46	0.86	0.14	7.19	0.05	0.01	18.50	0.89	0.11	7.18	0.04	0.01
18.60	0.91	0.09	7.17	0.09	0.02	18.65	0.94	0.06	7.16	0.05	0.01
18.71	0.96	0.04	7.15	0.06	0.01	18.77	1.01	0.00	7.14	0.06	0.00
18.86	1.07	0.00	7.13	0.09	0.00	18.91	1.15	0.00	7.12	0.05	0.00
19.01	1.21	0.00	7.10	0.10	0.00	19.05	1.28	0.00	7.10	0.05	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
19.10	1.33	0.00	7.09	0.05	0.00	19.25	1.35	0.00	7.07	0.15	0.00
19.29	1.39	0.00	7.06	0.04	0.00	19.34	1.37	0.00	7.05	0.05	0.00
19.38	1.34	0.00	7.05	0.04	0.00	19.44	1.26	0.00	7.04	0.05	0.00
19.52	1.22	0.00	7.03	0.09	0.00	19.56	1.18	0.00	7.02	0.04	0.00
19.65	1.18	0.00	7.00	0.09	0.00	19.70	1.20	0.00	7.00	0.05	0.00
19.76	1.23	0.00	6.99	0.06	0.00	19.85	1.26	0.00	6.98	0.09	0.00
19.89	1.28	0.00	6.97	0.04	0.00	19.96	1.30	0.00	6.96	0.07	0.00
20.02	1.32	0.00	6.95	0.06	0.00	20.10	1.34	0.00	6.94	0.08	0.00
20.16	1.36	0.00	6.93	0.06	0.00	20.25	1.35	0.00	6.91	0.09	0.00
20.28	1.36	0.00	6.91	0.04	0.00	20.38	1.35	0.00	6.89	0.09	0.00
20.41	1.29	0.00	6.89	0.04	0.00	20.49	1.18	0.00	6.88	0.07	0.00
20.54	1.02	0.00	6.87	0.05	0.00	20.65	0.89	0.11	6.85	0.11	0.03
20.69	0.80	0.20	6.85	0.04	0.02	20.74	0.76	0.24	6.84	0.05	0.03
20.85	0.72	0.28	6.82	0.11	0.06	20.87	0.68	0.32	6.82	0.03	0.02
20.97	0.66	0.34	6.80	0.10	0.07	21.00	0.71	0.29	6.80	0.03	0.02
21.09	0.80	0.20	6.79	0.09	0.04	21.13	0.89	0.11	6.78	0.04	0.01
21.22	0.94	0.06	6.77	0.09	0.01	21.26	0.96	0.04	6.76	0.05	0.00
21.34	0.94	0.06	6.75	0.08	0.01	21.39	2.00	0.00	6.74	0.05	0.00
21.47	2.00	0.00	6.73	0.08	0.00	21.54	2.00	0.00	6.72	0.07	0.00
21.60	2.00	0.00	6.71	0.06	0.00	21.67	2.00	0.00	6.70	0.07	0.00
21.75	2.00	0.00	6.69	0.08	0.00	21.79	2.00	0.00	6.68	0.04	0.00
21.89	2.00	0.00	6.66	0.09	0.00	21.93	2.00	0.00	6.66	0.04	0.00
22.06	0.21	0.79	6.64	0.13	0.21	22.11	0.21	0.79	6.63	0.05	0.08
22.16	0.21	0.79	6.62	0.05	0.08	22.19	0.21	0.79	6.62	0.04	0.06
22.25	0.20	0.80	6.61	0.05	0.09	22.32	0.18	0.82	6.60	0.07	0.12
22.40	0.18	0.82	6.59	0.08	0.13	22.45	0.18	0.82	6.58	0.05	0.08
22.55	0.20	0.80	6.56	0.09	0.15	22.60	0.21	0.79	6.56	0.05	0.08
22.65	0.22	0.78	6.55	0.05	0.08	22.71	0.23	0.77	6.54	0.06	0.10
22.80	0.24	0.76	6.53	0.09	0.13	22.85	0.26	0.74	6.52	0.05	0.08
22.93	0.29	0.71	6.51	0.08	0.11	22.98	0.33	0.67	6.50	0.05	0.07
23.05	0.37	0.63	6.49	0.07	0.09	23.11	0.41	0.59	6.48	0.06	0.07
23.18	0.45	0.55	6.47	0.07	0.08	23.24	0.48	0.52	6.46	0.06	0.06
23.32	0.49	0.51	6.45	0.08	0.08	23.38	0.50	0.50	6.44	0.06	0.06
23.43	0.51	0.49	6.43	0.06	0.06	23.51	0.51	0.49	6.42	0.07	0.07
23.58	0.50	0.50	6.41	0.07	0.07	23.64	0.48	0.52	6.40	0.06	0.06
23.70	0.45	0.55	6.39	0.06	0.06	23.77	0.46	0.54	6.38	0.07	0.07
23.84	0.46	0.54	6.37	0.07	0.07	23.91	0.45	0.55	6.36	0.07	0.07
23.99	0.47	0.53	6.34	0.08	0.09	24.03	0.47	0.53	6.34	0.04	0.04
24.09	0.48	0.52	6.33	0.06	0.06	24.17	0.48	0.52	6.32	0.08	0.08
24.21	0.50	0.50	6.31	0.05	0.05	24.31	0.46	0.54	6.30	0.09	0.10
24.35	0.46	0.54	6.29	0.04	0.04	24.45	0.44	0.56	6.27	0.11	0.11
24.49	0.44	0.56	6.27	0.04	0.04	24.57	0.41	0.59	6.26	0.08	0.09
24.62	0.41	0.59	6.25	0.04	0.05	24.71	0.38	0.62	6.23	0.09	0.11
24.78	0.37	0.63	6.22	0.07	0.08	24.83	0.36	0.64	6.22	0.05	0.06
24.88	0.35	0.65	6.21	0.05	0.06	24.96	0.32	0.68	6.20	0.09	0.11
25.03	0.30	0.70	6.19	0.06	0.08	25.09	0.28	0.72	6.18	0.06	0.09
25.14	0.27	0.73	6.17	0.05	0.07	25.23	0.26	0.74	6.15	0.09	0.12
25.29	0.26	0.74	6.15	0.06	0.08	25.34	0.26	0.74	6.14	0.05	0.07

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
25.40	0.25	0.75	6.13	0.06	0.09	25.47	0.25	0.75	6.12	0.07	0.09
25.53	0.25	0.75	6.11	0.06	0.08	25.59	0.26	0.74	6.10	0.07	0.09
25.66	0.26	0.74	6.09	0.06	0.09	25.72	0.26	0.74	6.08	0.07	0.09
25.79	0.26	0.74	6.07	0.07	0.10	25.88	0.25	0.75	6.06	0.09	0.12
25.93	0.24	0.76	6.05	0.05	0.07	26.01	0.24	0.76	6.04	0.08	0.11
26.06	0.23	0.77	6.03	0.05	0.07	26.15	0.22	0.78	6.01	0.10	0.14
26.20	0.22	0.78	6.01	0.04	0.06	26.27	0.21	0.79	6.00	0.07	0.11
26.32	0.21	0.79	5.99	0.05	0.08	26.41	0.19	0.81	5.97	0.09	0.13
26.46	0.19	0.81	5.97	0.05	0.07	26.54	2.00	0.00	5.96	0.08	0.00
26.58	2.00	0.00	5.95	0.04	0.00	26.64	2.00	0.00	5.94	0.06	0.00
26.72	2.00	0.00	5.93	0.08	0.00	26.81	2.00	0.00	5.91	0.09	0.00
26.86	2.00	0.00	5.91	0.05	0.00	26.93	2.00	0.00	5.90	0.08	0.00
26.99	2.00	0.00	5.89	0.05	0.00	27.06	2.00	0.00	5.88	0.07	0.00
27.12	2.00	0.00	5.87	0.06	0.00	27.18	2.00	0.00	5.86	0.06	0.00
27.25	2.00	0.00	5.85	0.07	0.00	27.33	0.60	0.40	5.84	0.07	0.05
27.39	0.48	0.52	5.83	0.07	0.06	27.47	0.40	0.60	5.81	0.08	0.08
27.51	0.35	0.65	5.81	0.04	0.05	27.57	0.33	0.67	5.80	0.06	0.07
27.66	0.31	0.69	5.78	0.09	0.11	27.71	0.29	0.71	5.78	0.04	0.05
27.80	0.29	0.71	5.76	0.09	0.12	27.84	0.28	0.72	5.76	0.05	0.06
27.91	0.29	0.71	5.75	0.06	0.08	27.96	0.30	0.70	5.74	0.05	0.06
28.03	0.31	0.69	5.73	0.08	0.09	28.10	0.32	0.68	5.72	0.06	0.08
28.16	0.32	0.68	5.71	0.06	0.07	28.23	0.32	0.68	5.70	0.07	0.08
28.29	0.31	0.69	5.69	0.06	0.07	28.36	0.31	0.69	5.68	0.07	0.08
28.41	0.31	0.69	5.67	0.06	0.07	28.48	0.30	0.70	5.66	0.07	0.08
28.55	0.30	0.70	5.65	0.07	0.08	28.63	0.30	0.70	5.64	0.08	0.10
28.68	0.31	0.69	5.63	0.05	0.06	28.74	0.33	0.67	5.62	0.06	0.07
28.82	0.37	0.63	5.61	0.07	0.08	28.90	0.41	0.59	5.60	0.09	0.09
28.95	0.42	0.58	5.59	0.04	0.04	29.01	0.39	0.61	5.58	0.06	0.07
29.13	0.36	0.64	5.56	0.12	0.13	29.17	0.34	0.66	5.55	0.04	0.05
29.22	0.33	0.67	5.55	0.05	0.06	29.30	0.33	0.67	5.53	0.08	0.09
29.35	0.33	0.67	5.53	0.04	0.05	29.44	0.33	0.67	5.51	0.09	0.10
29.48	0.33	0.67	5.51	0.04	0.05	29.56	0.34	0.66	5.49	0.09	0.10
29.60	0.34	0.66	5.49	0.04	0.04	29.71	0.35	0.65	5.47	0.11	0.11
29.75	0.36	0.64	5.47	0.04	0.04	29.79	0.36	0.64	5.46	0.04	0.05
29.87	0.36	0.64	5.45	0.08	0.09	29.97	0.37	0.63	5.43	0.09	0.10
30.01	0.47	0.53	5.43	0.04	0.04	30.09	0.61	0.39	5.41	0.08	0.05
30.13	0.77	0.23	5.41	0.04	0.02	30.18	0.85	0.15	5.40	0.05	0.01
30.26	0.83	0.17	5.39	0.08	0.02	30.34	0.73	0.27	5.38	0.08	0.03
30.42	0.62	0.38	5.36	0.08	0.05	30.47	0.52	0.48	5.36	0.05	0.04
30.56	0.46	0.54	5.34	0.10	0.08	30.58	0.43	0.57	5.34	0.02	0.01
30.66	0.43	0.57	5.33	0.08	0.08	30.71	0.43	0.57	5.32	0.05	0.05
30.79	0.42	0.58	5.31	0.07	0.07	30.87	0.40	0.60	5.30	0.08	0.08
30.92	0.37	0.63	5.29	0.05	0.06	31.01	0.34	0.66	5.27	0.09	0.09
31.06	0.32	0.68	5.27	0.05	0.05	31.11	0.33	0.67	5.26	0.05	0.06
31.18	0.35	0.65	5.25	0.07	0.07	31.26	0.37	0.63	5.24	0.08	0.08
31.32	0.39	0.61	5.23	0.06	0.06	31.37	0.41	0.59	5.22	0.05	0.05
31.44	0.41	0.59	5.21	0.07	0.06	31.50	0.41	0.59	5.20	0.06	0.06
31.59	0.40	0.60	5.19	0.09	0.09	31.64	0.40	0.60	5.18	0.05	0.05

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.72	0.40	0.60	5.17	0.07	0.07	31.76	0.43	0.57	5.16	0.04	0.04
31.83	0.46	0.54	5.15	0.07	0.06	31.91	0.51	0.49	5.14	0.09	0.07
31.99	0.55	0.45	5.13	0.07	0.05	32.03	0.58	0.42	5.12	0.04	0.03
32.09	0.60	0.40	5.11	0.06	0.04	32.17	0.60	0.40	5.10	0.08	0.05
32.25	0.59	0.41	5.08	0.08	0.05	32.33	0.58	0.42	5.07	0.08	0.05
32.38	0.58	0.42	5.07	0.05	0.03	32.42	2.00	0.00	5.06	0.04	0.00
32.49	2.00	0.00	5.05	0.08	0.00	32.56	2.00	0.00	5.04	0.07	0.00
32.65	2.00	0.00	5.02	0.09	0.00	32.69	2.00	0.00	5.02	0.05	0.00
32.78	2.00	0.00	5.00	0.09	0.00	32.81	2.00	0.00	5.00	0.04	0.00
32.88	2.00	0.00	4.99	0.07	0.00	32.96	2.00	0.00	4.98	0.08	0.00
33.05	0.20	0.80	4.96	0.08	0.10	33.08	0.19	0.81	4.96	0.03	0.04
33.18	0.17	0.83	4.94	0.09	0.12	33.22	0.16	0.84	4.94	0.05	0.06
33.31	0.17	0.83	4.92	0.09	0.11	33.36	0.19	0.81	4.92	0.05	0.06
33.40	0.20	0.80	4.91	0.04	0.05	33.50	0.21	0.79	4.89	0.10	0.12
33.54	0.24	0.76	4.89	0.04	0.05	33.62	0.26	0.74	4.88	0.07	0.08
33.67	0.29	0.71	4.87	0.05	0.05	33.77	0.32	0.68	4.85	0.10	0.10
33.81	0.34	0.66	4.85	0.05	0.04	33.90	0.38	0.62	4.83	0.08	0.08
33.94	0.37	0.63	4.83	0.04	0.04	34.03	0.47	0.53	4.81	0.09	0.07
34.07	0.45	0.55	4.81	0.04	0.03	34.12	0.54	0.46	4.80	0.05	0.03
34.21	0.62	0.38	4.79	0.08	0.05	34.26	0.75	0.25	4.78	0.05	0.02
34.34	0.91	0.09	4.77	0.08	0.01	34.40	1.11	0.00	4.76	0.06	0.00
34.47	1.30	0.00	4.75	0.07	0.00	34.53	1.48	0.00	4.74	0.06	0.00
34.61	1.63	0.00	4.73	0.08	0.00	34.69	1.66	0.00	4.71	0.09	0.00
34.73	1.72	0.00	4.71	0.04	0.00	34.79	1.71	0.00	4.70	0.06	0.00
34.87	1.72	0.00	4.69	0.07	0.00	34.91	1.82	0.00	4.68	0.04	0.00
35.00	2.00	0.00	4.67	0.09	0.00	35.04	2.00	0.00	4.66	0.04	0.00
35.12	2.00	0.00	4.65	0.08	0.00	35.18	2.00	0.00	4.64	0.06	0.00
35.27	2.00	0.00	4.63	0.09	0.00	35.30	2.00	0.00	4.62	0.03	0.00
35.37	2.00	0.00	4.61	0.07	0.00	35.44	2.00	0.00	4.60	0.08	0.00
35.50	2.00	0.00	4.59	0.06	0.00	35.57	2.00	0.00	4.58	0.07	0.00
35.65	1.70	0.00	4.57	0.08	0.00	35.71	1.49	0.00	4.56	0.06	0.00
35.79	1.35	0.00	4.54	0.08	0.00	35.83	1.43	0.00	4.54	0.04	0.00
35.93	1.26	0.00	4.52	0.10	0.00	35.97	1.54	0.00	4.52	0.04	0.00
36.06	1.35	0.00	4.50	0.09	0.00	36.11	1.36	0.00	4.50	0.05	0.00
36.16	1.17	0.00	4.49	0.05	0.00	36.25	0.98	0.02	4.48	0.09	0.00
36.32	0.92	0.08	4.47	0.06	0.01	36.37	0.84	0.16	4.46	0.05	0.01
36.42	0.76	0.24	4.45	0.05	0.02	36.49	0.68	0.32	4.44	0.07	0.03
36.57	0.59	0.41	4.43	0.08	0.04	36.61	0.54	0.46	4.42	0.05	0.03
36.70	0.48	0.52	4.41	0.09	0.06	36.75	2.00	0.00	4.40	0.05	0.00
36.83	2.00	0.00	4.39	0.08	0.00	36.88	2.00	0.00	4.38	0.04	0.00
36.97	2.00	0.00	4.37	0.09	0.00	37.01	2.00	0.00	4.36	0.05	0.00
37.10	2.00	0.00	4.35	0.09	0.00	37.15	2.00	0.00	4.34	0.05	0.00
37.22	2.00	0.00	4.33	0.08	0.00	37.28	2.00	0.00	4.32	0.06	0.00
37.36	0.70	0.30	4.31	0.08	0.03	37.41	0.57	0.43	4.30	0.04	0.02
37.49	0.50	0.50	4.29	0.09	0.06	37.54	0.43	0.57	4.28	0.05	0.04
37.63	0.41	0.59	4.27	0.09	0.07	37.67	0.40	0.60	4.26	0.04	0.03
37.76	0.40	0.60	4.24	0.09	0.07	37.84	0.40	0.60	4.23	0.08	0.06
37.89	0.40	0.60	4.23	0.05	0.04	37.93	0.40	0.60	4.22	0.04	0.03

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
38.00	0.41	0.59	4.21	0.06	0.05	38.07	0.41	0.59	4.20	0.08	0.06
38.16	0.41	0.59	4.18	0.09	0.06	38.20	0.42	0.58	4.18	0.04	0.03
38.27	0.43	0.57	4.17	0.07	0.05	38.34	0.46	0.54	4.16	0.07	0.05
38.39	0.50	0.50	4.15	0.05	0.03	38.47	0.52	0.48	4.14	0.09	0.05
38.57	0.53	0.47	4.12	0.10	0.06	38.60	0.54	0.46	4.12	0.03	0.02
38.69	0.55	0.45	4.10	0.08	0.05	38.72	0.54	0.46	4.10	0.03	0.02
38.80	0.51	0.49	4.09	0.09	0.05	38.89	0.41	0.59	4.07	0.08	0.06
38.91	0.37	0.63	4.07	0.02	0.02	38.99	0.35	0.65	4.06	0.08	0.07
39.06	0.42	0.58	4.05	0.07	0.05	39.12	0.49	0.51	4.04	0.06	0.04
39.17	2.00	0.00	4.03	0.05	0.00	39.28	2.00	0.00	4.01	0.10	0.00
39.33	2.00	0.00	4.01	0.05	0.00	39.38	2.00	0.00	4.00	0.05	0.00
39.44	2.00	0.00	3.99	0.06	0.00	39.51	2.00	0.00	3.98	0.06	0.00
39.60	2.00	0.00	3.97	0.09	0.00	39.63	2.00	0.00	3.96	0.04	0.00
39.72	0.26	0.74	3.95	0.09	0.08	39.78	0.25	0.75	3.94	0.06	0.05
39.85	0.25	0.75	3.93	0.07	0.07	39.90	0.25	0.75	3.92	0.04	0.04
39.98	0.25	0.75	3.91	0.09	0.08	40.03	0.25	0.75	3.90	0.05	0.04
40.11	0.26	0.74	3.89	0.07	0.07	40.16	0.27	0.73	3.88	0.06	0.05
40.25	0.28	0.72	3.87	0.09	0.07	40.29	0.28	0.72	3.86	0.04	0.04
40.36	0.26	0.74	3.85	0.06	0.05	40.44	0.24	0.76	3.84	0.08	0.07
40.52	0.22	0.78	3.83	0.08	0.07	40.56	0.23	0.77	3.82	0.04	0.04
40.69	0.19	0.81	3.80	0.13	0.12	40.75	0.20	0.80	3.79	0.06	0.06
40.84	0.20	0.80	3.78	0.09	0.08	40.90	0.19	0.81	3.77	0.05	0.05
40.96	2.00	0.00	3.76	0.06	0.00	41.02	2.00	0.00	3.75	0.06	0.00
41.11	2.00	0.00	3.74	0.09	0.00	41.15	2.00	0.00	3.73	0.04	0.00
41.26	2.00	0.00	3.71	0.11	0.00	41.28	2.00	0.00	3.71	0.02	0.00
41.35	2.00	0.00	3.70	0.07	0.00	41.42	2.00	0.00	3.69	0.07	0.00
41.47	2.00	0.00	3.68	0.05	0.00	41.54	2.00	0.00	3.67	0.07	0.00
41.64	2.00	0.00	3.65	0.09	0.00	41.69	2.00	0.00	3.65	0.05	0.00
41.76	2.00	0.00	3.64	0.07	0.00	41.81	0.82	0.18	3.63	0.05	0.01
41.88	0.78	0.22	3.62	0.07	0.02	41.95	0.74	0.26	3.61	0.06	0.02
42.04	0.71	0.29	3.59	0.09	0.03	42.07	0.69	0.31	3.59	0.04	0.01
42.16	0.68	0.32	3.58	0.08	0.03	42.21	0.65	0.35	3.57	0.05	0.02
42.27	0.62	0.38	3.56	0.05	0.02	42.34	0.58	0.42	3.55	0.08	0.04
42.43	0.56	0.44	3.53	0.09	0.04	42.47	0.57	0.43	3.53	0.03	0.02
42.54	0.62	0.38	3.52	0.08	0.03	42.61	0.68	0.32	3.51	0.07	0.02
42.65	0.75	0.25	3.50	0.04	0.01	42.73	0.76	0.24	3.49	0.08	0.02
42.79	0.77	0.23	3.48	0.06	0.02	42.88	2.00	0.00	3.47	0.08	0.00
42.92	2.00	0.00	3.46	0.04	0.00	43.01	2.00	0.00	3.45	0.09	0.00
43.05	2.00	0.00	3.44	0.04	0.00	43.15	2.00	0.00	3.42	0.10	0.00
43.23	2.00	0.00	3.41	0.08	0.00	43.28	2.00	0.00	3.40	0.05	0.00
43.32	2.00	0.00	3.40	0.04	0.00	43.37	2.00	0.00	3.39	0.05	0.00
43.46	2.00	0.00	3.38	0.09	0.00	43.54	2.00	0.00	3.37	0.08	0.00
43.59	2.00	0.00	3.36	0.06	0.00	43.68	0.60	0.40	3.34	0.08	0.03
43.70	0.56	0.44	3.34	0.03	0.01	43.77	0.54	0.46	3.33	0.07	0.03
43.85	0.52	0.48	3.32	0.08	0.04	43.90	0.47	0.53	3.31	0.04	0.02
43.99	0.41	0.59	3.30	0.09	0.05	44.03	0.35	0.65	3.29	0.05	0.03
44.12	0.33	0.67	3.28	0.09	0.06	44.17	0.32	0.68	3.27	0.04	0.03
44.25	0.38	0.62	3.26	0.09	0.05	44.32	0.57	0.43	3.25	0.06	0.03

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
44.38	0.88	0.12	3.24	0.07	0.01	44.43	0.14	0.86	3.23	0.05	0.04
44.51	0.14	0.86	3.22	0.08	0.06	44.57	1.07	0.00	3.21	0.06	0.00
44.65	0.90	0.10	3.20	0.08	0.01	44.69	0.74	0.26	3.19	0.04	0.01
44.76	2.00	0.00	3.18	0.07	0.00	44.84	2.00	0.00	3.17	0.07	0.00
44.90	2.00	0.00	3.16	0.06	0.00	44.96	2.00	0.00	3.15	0.06	0.00
45.01	2.00	0.00	3.14	0.05	0.00	45.11	2.00	0.00	3.12	0.10	0.00
45.19	2.00	0.00	3.11	0.07	0.00	45.23	2.00	0.00	3.11	0.05	0.00
45.32	0.17	0.83	3.09	0.08	0.06	45.36	0.17	0.83	3.09	0.04	0.03
45.49	0.17	0.83	3.07	0.13	0.10	45.53	0.18	0.82	3.06	0.05	0.04
45.58	0.18	0.82	3.05	0.04	0.03	45.62	0.18	0.82	3.05	0.05	0.04
45.67	0.18	0.82	3.04	0.05	0.04	45.76	0.18	0.82	3.03	0.09	0.06
45.84	0.19	0.81	3.01	0.09	0.07	45.89	0.19	0.81	3.01	0.04	0.03
45.98	0.21	0.79	2.99	0.09	0.07	46.02	0.19	0.81	2.99	0.04	0.03
46.10	0.21	0.79	2.97	0.08	0.06	46.14	0.23	0.77	2.97	0.04	0.03
46.23	0.26	0.74	2.95	0.09	0.06	46.31	0.29	0.71	2.94	0.08	0.05
46.36	0.31	0.69	2.94	0.05	0.03	46.41	0.35	0.65	2.93	0.05	0.03
46.47	0.40	0.60	2.92	0.06	0.03	46.54	0.43	0.57	2.91	0.07	0.04
46.61	0.45	0.55	2.90	0.07	0.03	46.67	0.47	0.53	2.89	0.06	0.03
46.73	0.39	0.61	2.88	0.07	0.03	46.80	0.31	0.69	2.87	0.07	0.04
46.87	2.00	0.00	2.86	0.06	0.00	46.93	2.00	0.00	2.85	0.07	0.00
47.01	2.00	0.00	2.84	0.07	0.00	47.06	2.00	0.00	2.83	0.06	0.00
47.13	2.00	0.00	2.82	0.06	0.00	47.20	2.00	0.00	2.81	0.08	0.00
47.25	2.00	0.00	2.80	0.04	0.00	47.33	2.00	0.00	2.79	0.09	0.00
47.38	2.00	0.00	2.78	0.04	0.00	47.47	2.00	0.00	2.77	0.09	0.00
47.52	2.00	0.00	2.76	0.05	0.00	47.60	2.00	0.00	2.75	0.08	0.00
47.64	2.00	0.00	2.74	0.04	0.00	47.73	2.00	0.00	2.73	0.09	0.00
47.79	2.00	0.00	2.72	0.06	0.00	47.86	2.00	0.00	2.71	0.07	0.00
47.90	2.00	0.00	2.70	0.04	0.00	48.00	2.00	0.00	2.69	0.10	0.00
48.07	2.00	0.00	2.67	0.08	0.00	48.10	2.00	0.00	2.67	0.03	0.00
48.18	2.00	0.00	2.66	0.08	0.00	48.24	2.00	0.00	2.65	0.07	0.00
48.31	2.00	0.00	2.64	0.06	0.00	48.37	2.00	0.00	2.63	0.06	0.00
48.45	2.00	0.00	2.62	0.09	0.00	48.51	2.00	0.00	2.61	0.05	0.00
48.56	0.50	0.50	2.60	0.05	0.02	48.63	0.53	0.47	2.59	0.07	0.03
48.72	0.52	0.48	2.58	0.09	0.03	48.78	0.47	0.53	2.57	0.06	0.02
48.84	0.45	0.55	2.56	0.07	0.03	48.90	0.42	0.58	2.55	0.05	0.02
48.95	0.40	0.60	2.54	0.05	0.03	49.03	0.40	0.60	2.53	0.08	0.04
49.12	0.40	0.60	2.51	0.09	0.04	49.15	0.39	0.61	2.51	0.04	0.02
49.23	0.38	0.62	2.50	0.08	0.04	49.29	0.36	0.64	2.49	0.06	0.03
49.37	0.32	0.68	2.48	0.08	0.04	49.43	0.30	0.70	2.47	0.06	0.03
49.52	0.26	0.74	2.45	0.09	0.05	49.56	0.24	0.76	2.45	0.04	0.02
49.62	0.22	0.78	2.44	0.06	0.04	49.69	0.21	0.79	2.43	0.07	0.04
49.76	0.20	0.80	2.42	0.06	0.04	49.82	0.19	0.81	2.41	0.07	0.04
49.88	0.19	0.81	2.40	0.06	0.03	49.96	0.19	0.81	2.39	0.08	0.05
50.00	0.21	0.79	2.38	0.05	0.03	50.09	0.23	0.77	2.37	0.09	0.05
50.13	0.24	0.76	2.36	0.05	0.02	50.23	0.28	0.72	2.34	0.10	0.05
50.27	0.28	0.72	2.34	0.03	0.02	50.34	0.29	0.71	2.33	0.07	0.04
50.40	0.28	0.72	2.32	0.06	0.03	50.47	0.25	0.75	2.31	0.07	0.04
50.62	0.31	0.69	2.29	0.15	0.07	50.65	0.33	0.67	2.28	0.03	0.01

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
50.71	0.35	0.65	2.27	0.06	0.03	50.74	0.37	0.63	2.27	0.04	0.02
50.80	0.37	0.63	2.26	0.06	0.02	50.88	0.40	0.60	2.25	0.08	0.03
50.92	0.41	0.59	2.24	0.04	0.02	51.01	0.44	0.56	2.23	0.09	0.03
51.05	0.45	0.55	2.22	0.04	0.02	51.14	0.45	0.55	2.21	0.09	0.03
51.19	0.45	0.55	2.20	0.05	0.02	51.26	0.55	0.45	2.19	0.07	0.02
51.32	0.32	0.68	2.18	0.06	0.03	51.41	0.51	0.49	2.17	0.09	0.03
51.45	0.42	0.58	2.16	0.05	0.02	51.53	0.42	0.58	2.15	0.08	0.03
51.58	0.40	0.60	2.14	0.04	0.02	51.67	0.38	0.62	2.13	0.09	0.04
51.72	0.36	0.64	2.12	0.05	0.02	51.80	0.33	0.67	2.11	0.08	0.04
51.85	0.32	0.68	2.10	0.05	0.02	51.96	2.00	0.00	2.08	0.11	0.00
51.98	2.00	0.00	2.08	0.03	0.00	52.06	2.00	0.00	2.07	0.07	0.00
52.12	2.00	0.00	2.06	0.06	0.00	52.20	2.00	0.00	2.04	0.09	0.00
52.25	2.00	0.00	2.04	0.05	0.00	52.33	2.00	0.00	2.03	0.08	0.00
52.38	2.00	0.00	2.02	0.05	0.00	52.47	2.00	0.00	2.00	0.09	0.00
52.51	2.00	0.00	2.00	0.04	0.00	52.61	0.17	0.83	1.98	0.10	0.05
52.63	0.17	0.83	1.98	0.02	0.01	52.74	0.18	0.82	1.96	0.11	0.05
52.76	0.18	0.82	1.96	0.02	0.01	52.82	0.18	0.82	1.95	0.06	0.03
52.91	0.18	0.82	1.94	0.09	0.04	52.97	0.18	0.82	1.93	0.05	0.03
53.04	0.18	0.82	1.92	0.07	0.03	53.10	0.18	0.82	1.91	0.06	0.03
53.16	0.18	0.82	1.90	0.07	0.03	53.22	0.19	0.81	1.89	0.06	0.03
53.29	0.18	0.82	1.88	0.07	0.03	53.36	2.00	0.00	1.87	0.07	0.00
53.44	2.00	0.00	1.86	0.08	0.00	53.48	2.00	0.00	1.85	0.04	0.00
53.55	2.00	0.00	1.84	0.07	0.00	53.64	2.00	0.00	1.83	0.09	0.00
53.69	2.00	0.00	1.82	0.05	0.00	53.75	2.00	0.00	1.81	0.06	0.00
53.84	2.00	0.00	1.79	0.09	0.00	53.89	2.00	0.00	1.79	0.04	0.00
53.96	2.00	0.00	1.78	0.08	0.00	54.04	2.00	0.00	1.76	0.08	0.00
54.08	2.00	0.00	1.76	0.04	0.00	54.14	2.00	0.00	1.75	0.07	0.00
54.23	2.00	0.00	1.74	0.08	0.00	54.27	2.00	0.00	1.73	0.04	0.00
54.34	2.00	0.00	1.72	0.07	0.00	54.41	2.00	0.00	1.71	0.06	0.00
54.49	0.15	0.85	1.70	0.09	0.04	54.53	0.17	0.83	1.69	0.04	0.02
54.62	0.19	0.81	1.68	0.09	0.04	54.67	0.22	0.78	1.67	0.04	0.02
54.73	0.21	0.79	1.66	0.07	0.03	54.80	0.19	0.81	1.65	0.07	0.03
54.89	0.16	0.84	1.64	0.09	0.04	54.95	0.19	0.81	1.63	0.06	0.03
55.02	0.16	0.84	1.62	0.07	0.03	55.06	0.18	0.82	1.61	0.04	0.02
55.12	0.22	0.78	1.60	0.06	0.02	55.20	0.23	0.77	1.59	0.08	0.03
55.27	0.19	0.81	1.58	0.07	0.03	55.33	0.18	0.82	1.57	0.06	0.02
55.41	0.24	0.76	1.56	0.08	0.03	55.47	0.29	0.71	1.55	0.06	0.02
55.55	0.33	0.67	1.53	0.08	0.02	55.59	0.36	0.64	1.53	0.05	0.01
55.65	0.41	0.59	1.52	0.06	0.02	55.73	0.45	0.55	1.51	0.08	0.02
55.83	0.44	0.56	1.49	0.10	0.03	55.86	0.42	0.58	1.49	0.03	0.01
55.95	0.37	0.63	1.47	0.09	0.03	55.99	0.34	0.66	1.47	0.04	0.01
56.07	0.30	0.70	1.46	0.08	0.02	56.11	0.28	0.72	1.45	0.04	0.01
56.23	0.25	0.75	1.43	0.12	0.04	56.28	0.25	0.75	1.42	0.05	0.02
56.31	0.25	0.75	1.42	0.03	0.01	56.39	0.23	0.77	1.41	0.08	0.03
56.44	2.00	0.00	1.40	0.05	0.00	56.53	2.00	0.00	1.38	0.10	0.00
56.60	2.00	0.00	1.37	0.06	0.00	56.65	2.00	0.00	1.37	0.05	0.00
56.72	2.00	0.00	1.36	0.07	0.00	56.77	2.00	0.00	1.35	0.05	0.00
56.84	2.00	0.00	1.34	0.07	0.00	56.90	2.00	0.00	1.33	0.06	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
56.96	2.00	0.00	1.32	0.06	0.00	57.07	2.00	0.00	1.30	0.11	0.00
57.11	2.00	0.00	1.30	0.04	0.00	57.17	2.00	0.00	1.29	0.05	0.00
57.23	2.00	0.00	1.28	0.07	0.00	57.29	0.36	0.64	1.27	0.06	0.01
57.38	0.53	0.47	1.25	0.09	0.02	57.42	0.68	0.32	1.25	0.04	0.01
57.51	0.93	0.07	1.24	0.09	0.00	57.56	1.09	0.00	1.23	0.05	0.00
57.64	1.11	0.00	1.22	0.09	0.00	57.69	1.12	0.00	1.21	0.05	0.00
57.78	1.03	0.00	1.19	0.09	0.00	57.87	0.90	0.10	1.18	0.09	0.00
57.91	0.86	0.14	1.17	0.04	0.00	57.95	0.82	0.18	1.17	0.05	0.00
58.05	0.72	0.28	1.15	0.09	0.01	58.09	0.69	0.31	1.15	0.04	0.00
58.17	0.62	0.38	1.13	0.09	0.01	58.22	0.59	0.41	1.13	0.05	0.01
58.31	0.51	0.49	1.11	0.09	0.01	58.35	0.48	0.52	1.11	0.04	0.01
58.45	0.47	0.53	1.09	0.09	0.02	58.49	0.47	0.53	1.09	0.05	0.01
58.55	0.47	0.53	1.08	0.05	0.01	58.60	0.48	0.52	1.07	0.06	0.01
58.75	0.85	0.15	1.05	0.14	0.01	58.79	1.13	0.00	1.04	0.05	0.00
58.84	1.34	0.00	1.03	0.05	0.00	58.88	1.95	0.00	1.03	0.04	0.00
58.93	2.00	0.00	1.02	0.04	0.00	59.04	2.00	0.00	1.00	0.11	0.00
59.10	2.00	0.00	0.99	0.06	0.00	59.15	2.00	0.00	0.99	0.05	0.00
59.23	2.00	0.00	0.97	0.08	0.00	59.28	2.00	0.00	0.97	0.05	0.00
59.35	2.00	0.00	0.95	0.07	0.00	59.41	2.00	0.00	0.95	0.06	0.00
59.47	2.00	0.00	0.94	0.05	0.00	59.54	2.00	0.00	0.93	0.08	0.00
59.59	1.68	0.00	0.92	0.04	0.00	59.68	0.50	0.50	0.91	0.09	0.01
59.74	0.58	0.42	0.90	0.06	0.01	59.78	0.55	0.45	0.89	0.04	0.00
59.87	0.42	0.58	0.88	0.09	0.01	59.95	0.30	0.70	0.86	0.09	0.02
59.98	0.27	0.73	0.86	0.03	0.01	60.04	0.24	0.76	0.85	0.06	0.01
60.11	0.21	0.79	0.84	0.07	0.01	60.17	0.20	0.80	0.83	0.06	0.01
60.26	0.19	0.81	0.82	0.08	0.02	60.36	0.18	0.82	0.80	0.10	0.02
60.39	2.00	0.00	0.80	0.03	0.00	60.46	2.00	0.00	0.79	0.07	0.00
60.53	2.00	0.00	0.78	0.07	0.00	60.58	2.00	0.00	0.77	0.05	0.00
60.66	2.00	0.00	0.76	0.09	0.00	60.75	2.00	0.00	0.74	0.08	0.00
60.78	2.00	0.00	0.74	0.04	0.00	60.83	2.00	0.00	0.73	0.05	0.00
60.92	2.00	0.00	0.72	0.09	0.00	60.97	2.00	0.00	0.71	0.05	0.00
61.03	0.74	0.26	0.70	0.07	0.00	61.11	2.00	0.00	0.69	0.07	0.00
61.16	2.00	0.00	0.68	0.05	0.00	61.23	2.00	0.00	0.67	0.07	0.00
61.33	2.00	0.00	0.65	0.10	0.00	61.41	2.00	0.00	0.64	0.08	0.00
61.46	2.00	0.00	0.63	0.05	0.00	61.52	2.00	0.00	0.62	0.06	0.00
61.59	2.00	0.00	0.61	0.07	0.00	61.64	2.00	0.00	0.61	0.05	0.00
61.72	0.20	0.80	0.59	0.08	0.01	61.82	0.20	0.80	0.58	0.10	0.01
61.90	0.21	0.79	0.57	0.08	0.01	61.94	0.21	0.79	0.56	0.04	0.01
62.00	0.21	0.79	0.55	0.06	0.01	62.08	0.21	0.79	0.54	0.07	0.01
62.12	0.21	0.79	0.53	0.05	0.01	62.21	0.21	0.79	0.52	0.09	0.01
62.25	0.21	0.79	0.51	0.05	0.01	62.33	0.22	0.78	0.50	0.07	0.01
62.34	0.21	0.79	0.50	0.02	0.00	62.43	0.21	0.79	0.49	0.09	0.01
62.55	0.21	0.79	0.47	0.12	0.01	62.60	0.21	0.79	0.46	0.05	0.01
62.68	0.21	0.79	0.45	0.08	0.01	62.73	0.21	0.79	0.44	0.04	0.00
62.78	0.20	0.80	0.43	0.06	0.01	62.91	2.00	0.00	0.41	0.13	0.00
62.97	2.00	0.00	0.40	0.06	0.00	63.04	2.00	0.00	0.39	0.06	0.00
63.08	2.00	0.00	0.39	0.05	0.00	63.17	2.00	0.00	0.37	0.09	0.00
63.21	2.00	0.00	0.37	0.05	0.00	63.28	2.00	0.00	0.36	0.07	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
63.35	2.00	0.00	0.35	0.06	0.00	63.40	0.72	0.28	0.34	0.05	0.00
63.47	0.65	0.35	0.33	0.07	0.00	63.52	0.58	0.42	0.32	0.05	0.00
63.58	0.53	0.47	0.31	0.05	0.00	63.63	0.48	0.52	0.30	0.06	0.00
63.69	0.45	0.55	0.29	0.06	0.00	63.75	0.42	0.58	0.29	0.05	0.00
63.79	0.40	0.60	0.28	0.04	0.00	63.87	0.39	0.61	0.27	0.08	0.00
63.92	0.48	0.52	0.26	0.05	0.00	64.01	2.00	0.00	0.25	0.09	0.00
64.07	2.00	0.00	0.24	0.06	0.00	64.12	2.00	0.00	0.23	0.05	0.00
64.18	2.00	0.00	0.22	0.07	0.00	64.27	2.00	0.00	0.21	0.09	0.00
64.36	2.00	0.00	0.19	0.09	0.00	64.41	2.00	0.00	0.18	0.05	0.00
64.45	2.00	0.00	0.18	0.04	0.00	64.53	2.00	0.00	0.17	0.08	0.00
64.58	2.00	0.00	0.16	0.05	0.00	64.67	2.00	0.00	0.14	0.09	0.00
64.72	0.66	0.34	0.14	0.05	0.00	64.77	0.58	0.42	0.13	0.05	0.00
64.85	0.51	0.49	0.12	0.08	0.00	64.90	0.43	0.57	0.11	0.05	0.00
64.99	0.39	0.61	0.10	0.09	0.00	65.04	0.35	0.65	0.09	0.05	0.00
65.12	0.35	0.65	0.08	0.09	0.00	65.17	0.34	0.66	0.07	0.05	0.00
65.25	0.34	0.66	0.06	0.08	0.00	65.30	0.34	0.66	0.05	0.05	0.00
65.36	0.34	0.66	0.04	0.06	0.00	65.43	0.34	0.66	0.03	0.07	0.00
65.52	0.35	0.65	0.01	0.09	0.00	65.57	0.36	0.64	0.01	0.04	0.00
65.66	0.38	0.00	0.00	0.00	0.00	65.71	0.42	0.00	0.00	0.00	0.00
65.78	0.46	0.00	0.00	0.00	0.00	65.83	0.49	0.00	0.00	0.00	0.00
65.91	0.50	0.00	0.00	0.00	0.00	65.97	0.47	0.00	0.00	0.00	0.00
66.01	0.42	0.00	0.00	0.00	0.00	66.10	0.39	0.00	0.00	0.00	0.00
66.19	0.37	0.00	0.00	0.00	0.00	66.23	0.37	0.00	0.00	0.00	0.00
66.32	0.37	0.00	0.00	0.00	0.00	66.35	0.36	0.00	0.00	0.00	0.00
66.41	0.36	0.00	0.00	0.00	0.00	66.49	0.38	0.00	0.00	0.00	0.00
66.54	0.40	0.00	0.00	0.00	0.00	66.61	0.41	0.00	0.00	0.00	0.00
66.67	0.39	0.00	0.00	0.00	0.00	66.76	0.38	0.00	0.00	0.00	0.00
66.80	0.41	0.00	0.00	0.00	0.00	66.89	0.56	0.00	0.00	0.00	0.00
66.98	2.00	0.00	0.00	0.00	0.00	67.02	2.00	0.00	0.00	0.00	0.00
67.07	2.00	0.00	0.00	0.00	0.00	67.16	2.00	0.00	0.00	0.00	0.00
67.20	2.00	0.00	0.00	0.00	0.00	67.32	2.00	0.00	0.00	0.00	0.00
67.38	2.00	0.00	0.00	0.00	0.00	67.43	0.27	0.00	0.00	0.00	0.00
67.47	0.28	0.00	0.00	0.00	0.00	67.54	0.30	0.00	0.00	0.00	0.00
67.60	0.31	0.00	0.00	0.00	0.00	67.70	0.38	0.00	0.00	0.00	0.00
67.77	0.41	0.00	0.00	0.00	0.00	67.86	0.63	0.00	0.00	0.00	0.00
67.91	0.38	0.00	0.00	0.00	0.00	67.94	0.37	0.00	0.00	0.00	0.00
68.00	0.44	0.00	0.00	0.00	0.00	68.05	0.38	0.00	0.00	0.00	0.00
68.12	0.41	0.00	0.00	0.00	0.00	68.20	0.48	0.00	0.00	0.00	0.00
68.25	0.59	0.00	0.00	0.00	0.00	68.31	0.72	0.00	0.00	0.00	0.00
68.37	0.87	0.00	0.00	0.00	0.00	68.46	0.99	0.00	0.00	0.00	0.00
68.53	1.11	0.00	0.00	0.00	0.00	68.62	1.19	0.00	0.00	0.00	0.00
68.65	1.12	0.00	0.00	0.00	0.00	68.73	1.18	0.00	0.00	0.00	0.00
68.78	1.11	0.00	0.00	0.00	0.00	68.86	1.02	0.00	0.00	0.00	0.00
68.92	0.85	0.00	0.00	0.00	0.00	69.04	0.78	0.00	0.00	0.00	0.00
69.09	0.74	0.00	0.00	0.00	0.00	69.13	0.75	0.00	0.00	0.00	0.00
69.17	0.77	0.00	0.00	0.00	0.00	69.26	1.01	0.00	0.00	0.00	0.00
69.31	1.22	0.00	0.00	0.00	0.00	69.40	1.77	0.00	0.00	0.00	0.00
69.44	2.00	0.00	0.00	0.00	0.00	69.53	2.00	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
69.57	2.00	0.00	0.00	0.00	0.00	69.66	2.00	0.00	0.00	0.00	0.00
69.70	2.00	0.00	0.00	0.00	0.00	69.76	2.00	0.00	0.00	0.00	0.00
69.84	2.00	0.00	0.00	0.00	0.00	69.89	2.00	0.00	0.00	0.00	0.00
70.03	2.00	0.00	0.00	0.00	0.00	70.07	2.00	0.00	0.00	0.00	0.00
70.14	2.00	0.00	0.00	0.00	0.00	70.19	2.00	0.00	0.00	0.00	0.00
70.23	2.00	0.00	0.00	0.00	0.00	70.28	2.00	0.00	0.00	0.00	0.00
70.37	2.00	0.00	0.00	0.00	0.00	70.41	2.00	0.00	0.00	0.00	0.00
70.47	2.00	0.00	0.00	0.00	0.00	70.58	2.00	0.00	0.00	0.00	0.00
70.63	2.00	0.00	0.00	0.00	0.00	70.68	2.00	0.00	0.00	0.00	0.00
70.77	2.00	0.00	0.00	0.00	0.00	70.81	2.00	0.00	0.00	0.00	0.00
70.91	2.00	0.00	0.00	0.00	0.00	70.94	2.00	0.00	0.00	0.00	0.00
71.03	2.00	0.00	0.00	0.00	0.00	71.07	2.00	0.00	0.00	0.00	0.00
71.16	2.00	0.00	0.00	0.00	0.00	71.21	2.00	0.00	0.00	0.00	0.00
71.29	2.00	0.00	0.00	0.00	0.00	71.34	2.00	0.00	0.00	0.00	0.00
71.40	2.00	0.00	0.00	0.00	0.00	71.48	2.00	0.00	0.00	0.00	0.00
71.53	2.00	0.00	0.00	0.00	0.00	71.61	2.00	0.00	0.00	0.00	0.00
71.69	2.00	0.00	0.00	0.00	0.00	71.74	2.00	0.00	0.00	0.00	0.00
71.80	2.00	0.00	0.00	0.00	0.00	71.87	2.00	0.00	0.00	0.00	0.00
71.92	2.00	0.00	0.00	0.00	0.00	72.00	2.00	0.00	0.00	0.00	0.00
72.09	2.00	0.00	0.00	0.00	0.00	72.14	2.00	0.00	0.00	0.00	0.00
72.18	2.00	0.00	0.00	0.00	0.00	72.27	2.00	0.00	0.00	0.00	0.00
72.33	2.00	0.00	0.00	0.00	0.00	72.38	2.00	0.00	0.00	0.00	0.00
72.45	2.00	0.00	0.00	0.00	0.00	72.53	2.00	0.00	0.00	0.00	0.00
72.58	2.00	0.00	0.00	0.00	0.00	72.67	2.00	0.00	0.00	0.00	0.00
72.71	2.00	0.00	0.00	0.00	0.00	72.80	2.00	0.00	0.00	0.00	0.00
72.85	2.00	0.00	0.00	0.00	0.00	72.93	2.00	0.00	0.00	0.00	0.00
72.98	2.00	0.00	0.00	0.00	0.00	73.04	2.00	0.00	0.00	0.00	0.00
73.10	2.00	0.00	0.00	0.00	0.00	73.20	2.00	0.00	0.00	0.00	0.00
73.25	2.00	0.00	0.00	0.00	0.00	73.32	2.00	0.00	0.00	0.00	0.00
73.37	2.00	0.00	0.00	0.00	0.00	73.45	2.00	0.00	0.00	0.00	0.00
73.51	2.00	0.00	0.00	0.00	0.00	73.56	2.00	0.00	0.00	0.00	0.00
73.64	2.00	0.00	0.00	0.00	0.00	73.73	2.00	0.00	0.00	0.00	0.00
73.77	2.00	0.00	0.00	0.00	0.00	73.83	2.00	0.00	0.00	0.00	0.00
73.89	2.00	0.00	0.00	0.00	0.00	73.97	2.00	0.00	0.00	0.00	0.00
74.02	2.00	0.00	0.00	0.00	0.00	74.09	2.00	0.00	0.00	0.00	0.00
74.17	2.00	0.00	0.00	0.00	0.00	74.22	2.00	0.00	0.00	0.00	0.00
74.30	2.00	0.00	0.00	0.00	0.00	74.35	2.00	0.00	0.00	0.00	0.00
74.43	2.00	0.00	0.00	0.00	0.00	74.48	2.00	0.00	0.00	0.00	0.00
74.57	2.00	0.00	0.00	0.00	0.00	74.61	2.00	0.00	0.00	0.00	0.00
74.68	2.00	0.00	0.00	0.00	0.00	74.74	2.00	0.00	0.00	0.00	0.00
74.81	2.00	0.00	0.00	0.00	0.00	74.90	2.00	0.00	0.00	0.00	0.00
74.94	2.00	0.00	0.00	0.00	0.00	75.03	2.00	0.00	0.00	0.00	0.00
75.08	2.00	0.00	0.00	0.00	0.00	75.13	2.00	0.00	0.00	0.00	0.00
75.21	2.00	0.00	0.00	0.00	0.00	75.30	1.25	0.00	0.00	0.00	0.00
75.36	0.44	0.00	0.00	0.00	0.00	75.43	0.32	0.00	0.00	0.00	0.00
75.48	0.34	0.00	0.00	0.00	0.00	75.56	0.38	0.00	0.00	0.00	0.00
75.61	0.41	0.00	0.00	0.00	0.00	75.68	0.43	0.00	0.00	0.00	0.00
75.74	0.83	0.00	0.00	0.00	0.00	75.80	2.00	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
75.88	1.57	0.00	0.00	0.00	0.00	75.92	1.75	0.00	0.00	0.00	0.00
76.00	0.70	0.00	0.00	0.00	0.00	76.05	0.41	0.00	0.00	0.00	0.00
76.14	0.26	0.00	0.00	0.00	0.00	76.22	0.22	0.00	0.00	0.00	0.00
76.32	0.29	0.00	0.00	0.00	0.00	76.36	2.00	0.00	0.00	0.00	0.00
76.41	2.00	0.00	0.00	0.00	0.00	76.49	2.00	0.00	0.00	0.00	0.00
76.51	2.00	0.00	0.00	0.00	0.00	76.59	2.00	0.00	0.00	0.00	0.00
76.67	2.00	0.00	0.00	0.00	0.00	76.72	2.00	0.00	0.00	0.00	0.00
76.80	2.00	0.00	0.00	0.00	0.00	76.88	2.00	0.00	0.00	0.00	0.00
76.91	2.00	0.00	0.00	0.00	0.00	77.04	1.02	0.00	0.00	0.00	0.00
77.08	1.13	0.00	0.00	0.00	0.00	77.13	1.22	0.00	0.00	0.00	0.00
77.17	1.31	0.00	0.00	0.00	0.00	77.28	1.33	0.00	0.00	0.00	0.00
77.34	1.30	0.00	0.00	0.00	0.00	77.39	1.20	0.00	0.00	0.00	0.00
77.45	1.11	0.00	0.00	0.00	0.00	77.51	1.00	0.00	0.00	0.00	0.00
77.60	0.90	0.00	0.00	0.00	0.00	77.65	0.80	0.00	0.00	0.00	0.00
77.69	2.00	0.00	0.00	0.00	0.00	77.77	2.00	0.00	0.00	0.00	0.00
77.84	2.00	0.00	0.00	0.00	0.00	77.91	2.00	0.00	0.00	0.00	0.00
77.96	2.00	0.00	0.00	0.00	0.00	78.05	2.00	0.00	0.00	0.00	0.00
78.09	2.00	0.00	0.00	0.00	0.00	78.17	1.22	0.00	0.00	0.00	0.00
78.22	0.87	0.00	0.00	0.00	0.00	78.31	1.14	0.00	0.00	0.00	0.00
78.35	1.08	0.00	0.00	0.00	0.00	78.44	2.00	0.00	0.00	0.00	0.00
78.49	2.00	0.00	0.00	0.00	0.00	78.57	2.00	0.00	0.00	0.00	0.00
78.61	2.00	0.00	0.00	0.00	0.00	78.71	2.00	0.00	0.00	0.00	0.00
78.75	2.00	0.00	0.00	0.00	0.00	78.82	2.00	0.00	0.00	0.00	0.00
78.89	2.00	0.00	0.00	0.00	0.00	78.98	2.00	0.00	0.00	0.00	0.00
79.01	2.00	0.00	0.00	0.00	0.00	79.10	2.00	0.00	0.00	0.00	0.00
79.14	2.00	0.00	0.00	0.00	0.00	79.21	2.00	0.00	0.00	0.00	0.00
79.28	2.00	0.00	0.00	0.00	0.00	79.36	2.00	0.00	0.00	0.00	0.00
79.41	2.00	0.00	0.00	0.00	0.00	79.50	2.00	0.00	0.00	0.00	0.00
79.55	2.00	0.00	0.00	0.00	0.00	79.61	2.00	0.00	0.00	0.00	0.00
79.68	2.00	0.00	0.00	0.00	0.00	79.75	2.00	0.00	0.00	0.00	0.00
79.80	2.00	0.00	0.00	0.00	0.00	79.87	2.00	0.00	0.00	0.00	0.00
79.94	2.00	0.00	0.00	0.00	0.00	80.00	0.75	0.00	0.00	0.00	0.00
80.08	0.64	0.00	0.00	0.00	0.00	80.13	0.53	0.00	0.00	0.00	0.00
80.21	0.46	0.00	0.00	0.00	0.00	80.26	0.42	0.00	0.00	0.00	0.00
80.32	0.40	0.00	0.00	0.00	0.00	80.39	0.39	0.00	0.00	0.00	0.00
80.47	0.41	0.00	0.00	0.00	0.00	80.52	0.40	0.00	0.00	0.00	0.00
80.59	0.39	0.00	0.00	0.00	0.00	80.65	0.37	0.00	0.00	0.00	0.00
80.71	0.38	0.00	0.00	0.00	0.00	80.78	0.40	0.00	0.00	0.00	0.00
80.87	0.42	0.00	0.00	0.00	0.00	80.92	0.44	0.00	0.00	0.00	0.00
81.01	0.47	0.00	0.00	0.00	0.00	81.05	0.50	0.00	0.00	0.00	0.00
81.14	0.52	0.00	0.00	0.00	0.00	81.19	0.52	0.00	0.00	0.00	0.00
81.29	0.53	0.00	0.00	0.00	0.00	81.34	0.52	0.00	0.00	0.00	0.00
81.37	0.50	0.00	0.00	0.00	0.00	81.47	0.48	0.00	0.00	0.00	0.00
81.53	0.60	0.00	0.00	0.00	0.00	81.65	2.00	0.00	0.00	0.00	0.00
81.72	2.00	0.00	0.00	0.00	0.00	81.76	2.00	0.00	0.00	0.00	0.00
81.81	2.00	0.00	0.00	0.00	0.00	81.88	2.00	0.00	0.00	0.00	0.00
81.93	2.00	0.00	0.00	0.00	0.00	81.98	2.00	0.00	0.00	0.00	0.00
82.04	2.00	0.00	0.00	0.00	0.00	82.10	2.00	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
82.17	0.33	0.00	0.00	0.00	0.00	82.23	2.00	0.00	0.00	0.00	0.00
82.30	2.00	0.00	0.00	0.00	0.00	82.38	2.00	0.00	0.00	0.00	0.00
82.42	2.00	0.00	0.00	0.00	0.00	82.51	2.00	0.00	0.00	0.00	0.00
82.56	2.00	0.00	0.00	0.00	0.00	82.62	2.00	0.00	0.00	0.00	0.00
82.70	2.00	0.00	0.00	0.00	0.00	82.76	2.00	0.00	0.00	0.00	0.00
82.83	2.00	0.00	0.00	0.00	0.00	82.92	1.00	0.00	0.00	0.00	0.00
82.96	1.04	0.00	0.00	0.00	0.00	83.01	1.13	0.00	0.00	0.00	0.00
83.10	1.20	0.00	0.00	0.00	0.00	83.14	1.24	0.00	0.00	0.00	0.00
83.21	1.23	0.00	0.00	0.00	0.00	83.28	1.20	0.00	0.00	0.00	0.00
83.36	1.16	0.00	0.00	0.00	0.00	83.40	1.07	0.00	0.00	0.00	0.00
83.49	0.99	0.00	0.00	0.00	0.00	83.53	0.89	0.00	0.00	0.00	0.00
83.61	0.79	0.00	0.00	0.00	0.00	83.67	0.66	0.00	0.00	0.00	0.00
83.74	0.55	0.00	0.00	0.00	0.00	83.80	0.46	0.00	0.00	0.00	0.00
83.89	0.40	0.00	0.00	0.00	0.00	83.94	0.36	0.00	0.00	0.00	0.00
83.99	0.37	0.00	0.00	0.00	0.00	84.07	0.42	0.00	0.00	0.00	0.00
84.13	0.51	0.00	0.00	0.00	0.00	84.20	0.60	0.00	0.00	0.00	0.00
84.29	0.67	0.00	0.00	0.00	0.00	84.33	0.72	0.00	0.00	0.00	0.00
84.40	0.74	0.00	0.00	0.00	0.00	84.47	0.71	0.00	0.00	0.00	0.00
84.56	0.64	0.00	0.00	0.00	0.00	84.62	0.58	0.00	0.00	0.00	0.00
84.68	0.58	0.00	0.00	0.00	0.00	84.73	0.62	0.00	0.00	0.00	0.00
84.80	0.70	0.00	0.00	0.00	0.00	84.87	0.82	0.00	0.00	0.00	0.00
84.92	0.99	0.00	0.00	0.00	0.00	85.01	1.11	0.00	0.00	0.00	0.00
85.06	1.12	0.00	0.00	0.00	0.00	85.11	1.00	0.00	0.00	0.00	0.00
85.19	0.83	0.00	0.00	0.00	0.00	85.27	0.68	0.00	0.00	0.00	0.00
85.32	0.54	0.00	0.00	0.00	0.00	85.40	0.45	0.00	0.00	0.00	0.00
85.44	0.38	0.00	0.00	0.00	0.00	85.51	0.34	0.00	0.00	0.00	0.00
85.58	0.31	0.00	0.00	0.00	0.00	85.66	0.30	0.00	0.00	0.00	0.00
85.72	0.29	0.00	0.00	0.00	0.00	85.76	0.28	0.00	0.00	0.00	0.00
85.85	0.27	0.00	0.00	0.00	0.00	85.94	0.26	0.00	0.00	0.00	0.00
85.98	0.26	0.00	0.00	0.00	0.00	86.03	0.26	0.00	0.00	0.00	0.00
86.10	0.26	0.00	0.00	0.00	0.00	86.16	0.26	0.00	0.00	0.00	0.00
86.25	0.26	0.00	0.00	0.00	0.00	86.29	0.26	0.00	0.00	0.00	0.00
86.38	0.25	0.00	0.00	0.00	0.00	86.47	0.25	0.00	0.00	0.00	0.00
86.51	0.25	0.00	0.00	0.00	0.00	86.57	0.25	0.00	0.00	0.00	0.00
86.64	0.24	0.00	0.00	0.00	0.00	86.69	0.24	0.00	0.00	0.00	0.00
86.76	0.24	0.00	0.00	0.00	0.00	86.82	0.25	0.00	0.00	0.00	0.00
86.91	0.25	0.00	0.00	0.00	0.00	86.94	0.26	0.00	0.00	0.00	0.00
87.02	0.26	0.00	0.00	0.00	0.00	87.11	0.26	0.00	0.00	0.00	0.00
87.15	0.26	0.00	0.00	0.00	0.00	87.22	0.25	0.00	0.00	0.00	0.00
87.31	0.25	0.00	0.00	0.00	0.00	87.35	0.25	0.00	0.00	0.00	0.00
87.44	0.25	0.00	0.00	0.00	0.00	87.48	0.24	0.00	0.00	0.00	0.00
87.57	0.24	0.00	0.00	0.00	0.00	87.62	0.24	0.00	0.00	0.00	0.00
87.68	0.24	0.00	0.00	0.00	0.00	87.73	0.24	0.00	0.00	0.00	0.00
87.80	0.24	0.00	0.00	0.00	0.00	87.86	0.24	0.00	0.00	0.00	0.00
87.93	0.24	0.00	0.00	0.00	0.00	88.00	0.24	0.00	0.00	0.00	0.00
88.09	0.24	0.00	0.00	0.00	0.00	88.12	0.24	0.00	0.00	0.00	0.00
88.21	0.25	0.00	0.00	0.00	0.00	88.26	0.27	0.00	0.00	0.00	0.00
88.36	0.29	0.00	0.00	0.00	0.00	88.42	0.31	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
88.48	0.33	0.00	0.00	0.00	0.00	88.54	0.34	0.00	0.00	0.00	0.00
88.58	0.35	0.00	0.00	0.00	0.00	88.66	0.37	0.00	0.00	0.00	0.00
88.72	0.39	0.00	0.00	0.00	0.00	88.82	0.40	0.00	0.00	0.00	0.00
88.89	0.39	0.00	0.00	0.00	0.00	88.93	0.39	0.00	0.00	0.00	0.00
89.04	0.40	0.00	0.00	0.00	0.00	89.11	0.44	0.00	0.00	0.00	0.00
89.16	0.51	0.00	0.00	0.00	0.00	89.20	0.61	0.00	0.00	0.00	0.00
89.25	0.76	0.00	0.00	0.00	0.00	89.35	0.89	0.00	0.00	0.00	0.00
89.41	0.98	0.00	0.00	0.00	0.00	89.46	0.98	0.00	0.00	0.00	0.00
89.51	0.97	0.00	0.00	0.00	0.00	89.60	0.96	0.00	0.00	0.00	0.00
89.65	2.00	0.00	0.00	0.00	0.00	89.70	2.00	0.00	0.00	0.00	0.00
89.78	2.00	0.00	0.00	0.00	0.00	89.85	2.00	0.00	0.00	0.00	0.00
89.90	2.00	0.00	0.00	0.00	0.00	89.99	2.00	0.00	0.00	0.00	0.00
90.04	2.00	0.00	0.00	0.00	0.00	90.13	0.37	0.00	0.00	0.00	0.00
90.18	0.35	0.00	0.00	0.00	0.00	90.24	0.34	0.00	0.00	0.00	0.00
90.29	0.33	0.00	0.00	0.00	0.00	90.38	0.32	0.00	0.00	0.00	0.00
90.44	0.33	0.00	0.00	0.00	0.00	90.53	0.41	0.00	0.00	0.00	0.00
90.57	0.42	0.00	0.00	0.00	0.00	90.62	0.38	0.00	0.00	0.00	0.00
90.69	2.00	0.00	0.00	0.00	0.00	90.78	2.00	0.00	0.00	0.00	0.00
90.83	2.00	0.00	0.00	0.00	0.00	90.90	2.00	0.00	0.00	0.00	0.00
90.96	2.00	0.00	0.00	0.00	0.00	91.03	2.00	0.00	0.00	0.00	0.00
91.09	0.24	0.00	0.00	0.00	0.00	91.18	0.29	0.00	0.00	0.00	0.00
91.25	0.38	0.00	0.00	0.00	0.00	91.31	0.46	0.00	0.00	0.00	0.00
91.36	0.46	0.00	0.00	0.00	0.00	91.44	0.44	0.00	0.00	0.00	0.00
91.49	0.43	0.00	0.00	0.00	0.00	91.55	0.45	0.00	0.00	0.00	0.00
91.62	0.52	0.00	0.00	0.00	0.00	91.67	0.79	0.00	0.00	0.00	0.00
91.76	2.00	0.00	0.00	0.00	0.00	91.84	2.00	0.00	0.00	0.00	0.00
91.89	2.00	0.00	0.00	0.00	0.00	91.95	2.00	0.00	0.00	0.00	0.00
92.03	2.00	0.00	0.00	0.00	0.00	92.08	2.00	0.00	0.00	0.00	0.00
92.15	2.00	0.00	0.00	0.00	0.00	92.20	2.00	0.00	0.00	0.00	0.00
92.28	2.00	0.00	0.00	0.00	0.00	92.33	2.00	0.00	0.00	0.00	0.00
92.40	2.00	0.00	0.00	0.00	0.00	92.46	2.00	0.00	0.00	0.00	0.00
92.55	2.00	0.00	0.00	0.00	0.00	92.59	2.00	0.00	0.00	0.00	0.00
92.66	2.00	0.00	0.00	0.00	0.00	92.72	2.00	0.00	0.00	0.00	0.00
92.78	2.00	0.00	0.00	0.00	0.00	92.86	2.00	0.00	0.00	0.00	0.00
92.93	2.00	0.00	0.00	0.00	0.00	92.99	2.00	0.00	0.00	0.00	0.00
93.08	2.00	0.00	0.00	0.00	0.00	93.12	2.00	0.00	0.00	0.00	0.00
93.19	2.00	0.00	0.00	0.00	0.00	93.27	2.00	0.00	0.00	0.00	0.00
93.32	2.00	0.00	0.00	0.00	0.00	93.38	2.00	0.00	0.00	0.00	0.00
93.45	2.00	0.00	0.00	0.00	0.00	93.53	2.00	0.00	0.00	0.00	0.00
93.58	2.00	0.00	0.00	0.00	0.00	93.67	2.00	0.00	0.00	0.00	0.00
93.71	2.00	0.00	0.00	0.00	0.00	93.79	2.00	0.00	0.00	0.00	0.00
93.84	2.00	0.00	0.00	0.00	0.00	93.93	2.00	0.00	0.00	0.00	0.00
93.97	2.00	0.00	0.00	0.00	0.00	94.04	2.00	0.00	0.00	0.00	0.00
94.10	2.00	0.00	0.00	0.00	0.00	94.17	2.00	0.00	0.00	0.00	0.00
94.24	2.00	0.00	0.00	0.00	0.00	94.31	2.00	0.00	0.00	0.00	0.00
94.38	2.00	0.00	0.00	0.00	0.00	94.43	2.00	0.00	0.00	0.00	0.00
94.51	2.00	0.00	0.00	0.00	0.00	94.56	2.00	0.00	0.00	0.00	0.00
94.65	2.00	0.00	0.00	0.00	0.00	94.69	2.00	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
94.77	2.00	0.00	0.00	0.00	0.00	94.82	2.00	0.00	0.00	0.00	0.00
94.90	2.00	0.00	0.00	0.00	0.00	94.97	2.00	0.00	0.00	0.00	0.00
95.03	2.00	0.00	0.00	0.00	0.00	95.10	2.00	0.00	0.00	0.00	0.00
95.15	2.00	0.00	0.00	0.00	0.00	95.22	2.00	0.00	0.00	0.00	0.00
95.31	2.00	0.00	0.00	0.00	0.00	95.35	2.00	0.00	0.00	0.00	0.00
95.41	2.00	0.00	0.00	0.00	0.00	95.47	2.00	0.00	0.00	0.00	0.00
95.54	2.00	0.00	0.00	0.00	0.00	95.62	2.00	0.00	0.00	0.00	0.00
95.70	2.00	0.00	0.00	0.00	0.00	95.75	2.00	0.00	0.00	0.00	0.00
95.84	2.00	0.00	0.00	0.00	0.00	95.88	2.00	0.00	0.00	0.00	0.00
95.93	2.00	0.00	0.00	0.00	0.00	96.01	2.00	0.00	0.00	0.00	0.00
96.08	2.00	0.00	0.00	0.00	0.00	96.14	2.00	0.00	0.00	0.00	0.00
96.20	2.00	0.00	0.00	0.00	0.00	96.28	2.00	0.00	0.00	0.00	0.00
96.33	2.00	0.00	0.00	0.00	0.00	96.40	2.00	0.00	0.00	0.00	0.00
96.46	2.00	0.00	0.00	0.00	0.00	96.54	2.00	0.00	0.00	0.00	0.00
96.62	2.00	0.00	0.00	0.00	0.00	96.67	2.00	0.00	0.00	0.00	0.00
96.72	2.00	0.00	0.00	0.00	0.00	96.79	2.00	0.00	0.00	0.00	0.00
96.89	2.00	0.00	0.00	0.00	0.00	96.94	2.00	0.00	0.00	0.00	0.00
96.99	2.00	0.00	0.00	0.00	0.00	97.08	2.00	0.00	0.00	0.00	0.00
97.12	2.00	0.00	0.00	0.00	0.00	97.18	2.00	0.00	0.00	0.00	0.00
97.25	2.00	0.00	0.00	0.00	0.00	97.34	2.00	0.00	0.00	0.00	0.00
97.38	2.00	0.00	0.00	0.00	0.00	97.47	2.00	0.00	0.00	0.00	0.00
97.52	2.00	0.00	0.00	0.00	0.00	97.58	2.00	0.00	0.00	0.00	0.00
97.64	2.00	0.00	0.00	0.00	0.00	97.74	2.00	0.00	0.00	0.00	0.00
97.78	2.00	0.00	0.00	0.00	0.00	97.87	2.00	0.00	0.00	0.00	0.00
97.92	2.00	0.00	0.00	0.00	0.00	97.97	2.00	0.00	0.00	0.00	0.00
98.04	2.00	0.00	0.00	0.00	0.00	98.13	2.00	0.00	0.00	0.00	0.00
98.18	2.00	0.00	0.00	0.00	0.00	98.26	2.00	0.00	0.00	0.00	0.00
98.31	2.00	0.00	0.00	0.00	0.00	98.36	2.00	0.00	0.00	0.00	0.00
98.43	2.00	0.00	0.00	0.00	0.00	98.52	2.00	0.00	0.00	0.00	0.00
98.57	2.00	0.00	0.00	0.00	0.00	98.64	2.00	0.00	0.00	0.00	0.00
98.69	2.00	0.00	0.00	0.00	0.00	98.76	2.00	0.00	0.00	0.00	0.00
98.83	2.00	0.00	0.00	0.00	0.00	98.91	2.00	0.00	0.00	0.00	0.00
98.96	2.00	0.00	0.00	0.00	0.00	99.02	2.00	0.00	0.00	0.00	0.00
99.08	2.00	0.00	0.00	0.00	0.00	99.17	2.00	0.00	0.00	0.00	0.00
99.22	2.00	0.00	0.00	0.00	0.00	99.30	2.00	0.00	0.00	0.00	0.00
99.37	2.00	0.00	0.00	0.00	0.00	99.41	2.00	0.00	0.00	0.00	0.00
99.50	2.00	0.00	0.00	0.00	0.00	99.55	2.00	0.00	0.00	0.00	0.00
99.62	2.00	0.00	0.00	0.00	0.00	99.68	2.00	0.00	0.00	0.00	0.00
99.77	2.00	0.00	0.00	0.00	0.00	99.81	2.00	0.00	0.00	0.00	0.00
99.90	2.00	0.00	0.00	0.00	0.00	99.94	2.00	0.00	0.00	0.00	0.00
100.03	2.00	0.00	0.00	0.00	0.00	100.08	2.00	0.00	0.00	0.00	0.00
100.15	2.00	0.00	0.00	0.00	0.00	100.21	2.00	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI

Overall liquefaction potential: 22.97

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

:: Post-earthquake settlement of dry sands ::

Depth (ft)	Ic	Q_{tn}	K_c	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vd(15)}$ (%)	N_c	e_v (%)	Settle. (in)
0.07	1.61	120.08	1.00	120.08	22	438	0.59	0.000	0.00	13.34	0.00	0.000
0.14	1.66	136.32	1.01	137.39	25	529	0.59	0.001	0.00	13.34	0.00	0.000
0.22	1.64	177.07	1.00	177.07	32	669	0.57	0.001	0.00	13.34	0.00	0.000
0.27	1.59	244.28	1.00	244.28	44	869	0.55	0.001	0.00	13.34	0.00	0.000
0.34	1.52	333.48	1.00	333.48	59	1089	0.55	0.001	0.00	13.34	0.00	0.000
0.44	1.48	404.07	1.00	404.07	70	1256	0.55	0.001	0.00	13.34	0.00	0.000
0.50	1.43	455.73	1.00	455.73	78	1320	0.55	0.001	0.00	13.34	0.00	0.000
0.56	1.39	466.34	1.00	466.34	79	1287	0.55	0.001	0.00	13.34	0.00	0.000
0.61	1.35	493.25	1.00	493.25	82	1305	0.55	0.002	0.00	13.34	0.00	0.000
0.68	1.31	581.13	1.00	581.13	95	1445	0.55	0.002	0.00	13.34	0.00	0.000
0.74	1.30	664.13	1.00	664.13	109	1637	0.55	0.002	0.00	13.34	0.00	0.000
0.79	1.31	724.92	1.00	724.92	119	1823	0.55	0.001	0.00	13.34	0.00	0.000
0.86	1.38	691.96	1.00	691.96	116	1895	0.55	0.002	0.00	13.34	0.00	0.000
0.94	1.44	645.45	1.00	645.45	110	1895	0.55	0.002	0.00	13.34	0.00	0.000
1.00	1.50	566.57	1.00	566.57	99	1802	0.55	0.002	0.00	13.34	0.00	0.000
1.07	1.55	502.10	1.00	502.10	89	1701	0.55	0.002	0.00	13.34	0.00	0.000
1.13	1.55	439.36	1.00	439.36	78	1494	0.55	0.003	0.00	13.34	0.00	0.000
1.20	1.49	404.79	1.00	404.79	70	1276	0.55	0.004	0.00	13.34	0.00	0.000
1.26	1.41	379.00	1.00	379.00	64	1082	0.55	0.005	0.00	13.34	0.00	0.000
1.40	1.43	360.45	1.00	360.45	61	1046	0.55	0.005	0.00	13.34	0.00	0.000
1.44	1.49	341.38	1.00	341.38	59	1072	0.55	0.005	0.00	13.34	0.00	0.000
1.48	1.54	326.50	1.00	326.50	58	1087	0.55	0.006	0.00	13.34	0.00	0.000
1.51	1.60	308.99	1.00	308.99	56	1109	0.55	0.006	0.00	13.34	0.00	0.000
1.58	1.65	298.42	1.00	299.70	55	1150	0.55	0.006	0.00	13.34	0.00	0.000
1.67	1.70	293.36	1.04	303.65	57	1196	0.55	0.006	0.00	13.34	0.00	0.000
1.71	1.72	295.55	1.05	310.41	58	1240	0.55	0.005	0.00	13.34	0.00	0.000
1.78	1.73	295.42	1.06	312.81	59	1260	0.55	0.006	0.00	13.34	0.00	0.000
1.85	1.73	297.36	1.06	314.82	59	1268	0.55	0.006	0.00	13.34	0.00	0.000
1.91	1.72	302.00	1.05	317.07	60	1266	0.55	0.006	0.00	13.34	0.00	0.000
1.97	1.69	316.75	1.03	326.07	61	1278	0.55	0.006	0.00	13.34	0.00	0.000
2.04	1.66	335.68	1.01	338.82	62	1305	0.55	0.006	0.00	13.34	0.00	0.000
2.10	1.62	365.57	1.00	365.57	66	1356	0.55	0.006	0.00	13.34	0.00	0.000
2.20	1.60	389.61	1.00	389.61	70	1405	0.55	0.006	0.00	13.34	0.00	0.000
2.25	1.59	404.98	1.00	404.98	73	1446	0.55	0.006	0.00	13.34	0.00	0.000
2.32	1.60	405.49	1.00	405.49	73	1470	0.55	0.006	0.00	13.34	0.00	0.000
2.38	1.63	399.86	1.00	399.86	73	1495	0.55	0.006	0.00	13.34	0.00	0.000
2.47	1.65	396.46	1.00	396.41	73	1516	0.55	0.006	0.00	13.34	0.00	0.000
2.51	1.66	390.71	1.01	395.95	73	1531	0.55	0.006	0.00	13.34	0.00	0.000
2.59	1.68	383.47	1.02	392.80	73	1533	0.55	0.007	0.00	13.34	0.00	0.000
2.65	1.71	369.57	1.04	384.92	72	1525	0.55	0.007	0.00	13.34	0.00	0.000
2.70	1.73	352.29	1.06	373.55	71	1506	0.55	0.007	0.00	13.34	0.00	0.000
2.78	1.76	334.55	1.08	360.90	69	1480	0.55	0.008	0.00	13.34	0.00	0.000
2.82	1.78	315.78	1.09	345.75	66	1439	0.55	0.008	0.00	13.34	0.00	0.000
2.91	1.80	297.97	1.11	330.24	64	1390	0.55	0.009	0.00	13.34	0.00	0.000
2.96	1.82	277.93	1.12	311.76	61	1327	0.55	0.010	0.00	13.34	0.00	0.000
3.03	1.84	257.66	1.14	292.48	57	1257	0.55	0.011	0.00	13.34	0.00	0.000
3.11	1.85	237.68	1.15	273.01	54	1185	0.55	0.012	0.00	13.34	0.00	0.000
3.18	1.87	219.76	1.17	256.20	51	1124	0.55	0.013	0.00	13.34	0.00	0.000

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	K_c	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vd(15)}$ (%)	N_c	e_v (%)	Settle. (in)
3.22	1.88	202.99	1.17	238.03	47	1048	0.55	0.015	0.01	13.34	0.00	0.000
3.31	1.88	188.46	1.17	220.56	44	970	0.56	0.018	0.01	13.34	0.01	0.000
3.35	1.87	173.76	1.17	202.48	40	888	0.56	0.022	0.01	13.34	0.01	0.000
3.42	1.88	162.38	1.17	190.44	38	839	0.57	0.025	0.01	13.34	0.01	0.000
3.49	1.90	151.69	1.19	180.11	36	799	0.57	0.029	0.01	13.34	0.01	0.000
3.57	1.93	139.34	1.22	169.39	34	762	0.57	0.034	0.02	13.34	0.02	0.000
3.62	1.94	131.99	1.23	161.95	33	731	0.58	0.038	0.02	13.34	0.02	0.000
3.68	1.94	127.16	1.23	156.55	32	708	0.57	0.043	0.02	13.34	0.02	0.000
3.76	1.92	127.95	1.21	154.73	31	694	0.58	0.047	0.03	13.34	0.02	0.000
3.81	1.92	127.09	1.20	152.99	31	684	0.58	0.050	0.03	13.34	0.03	0.000
3.87	1.91	126.51	1.20	152.01	31	679	0.58	0.052	0.03	13.34	0.03	0.000
3.94	1.91	125.64	1.20	151.02	30	675	0.58	0.055	0.03	13.34	0.03	0.001
4.03	1.91	125.05	1.20	150.07	30	670	0.58	0.058	0.04	13.34	0.03	0.001
4.08	1.92	123.09	1.21	148.51	30	665	0.58	0.061	0.04	13.34	0.03	0.000
4.16	1.93	119.86	1.22	146.44	30	660	0.58	0.064	0.04	13.34	0.04	0.001
4.21	1.96	114.24	1.26	143.48	29	654	0.58	0.068	0.04	13.34	0.04	0.000
4.27	2.01	106.19	1.32	140.01	29	648	0.58	0.072	0.05	13.34	0.04	0.001
4.34	2.09	95.57	1.43	136.92	29	640	0.58	0.077	0.05	13.34	0.04	0.001
4.43	2.17	85.05	1.60	135.76	30	632	0.58	0.083	0.05	13.34	0.04	0.001
4.47	2.25	76.89	1.80	138.27	32	632	0.58	0.085	0.05	13.34	0.04	0.000
4.57	2.30	72.81	1.94	141.45	33	637	0.58	0.086	0.05	13.34	0.04	0.001
4.60	2.34	69.64	2.07	144.13	34	639	0.58	0.086	0.04	13.34	0.04	0.000
4.69	2.34	69.20	2.08	144.24	35	638	0.58	0.090	0.05	13.34	0.04	0.001
4.74	2.35	67.41	2.12	142.75	34	629	0.58	0.096	0.05	13.34	0.04	0.001
4.81	2.32	68.67	2.03	139.46	33	621	0.58	0.104	0.06	13.34	0.05	0.001
4.87	2.29	71.04	1.90	135.09	32	611	0.58	0.113	0.07	13.34	0.06	0.001
4.93	2.20	78.09	1.67	130.56	29	605	0.58	0.120	0.08	13.34	0.07	0.001
5.00	2.11	86.23	1.48	127.55	28	596	0.58	0.131	0.09	13.34	0.08	0.001
5.10	2.04	92.54	1.36	126.12	27	587	0.58	0.144	0.10	13.34	0.09	0.002
5.13	1.99	97.48	1.29	126.07	26	580	0.58	0.153	0.11	13.34	0.10	0.001
5.19	1.97	100.35	1.26	126.17	26	576	0.58	0.162	0.12	13.34	0.10	0.002
5.27	1.94	103.04	1.23	126.84	26	574	0.58	0.170	0.13	13.34	0.11	0.002
5.38	1.93	104.24	1.22	127.51	26	576	0.58	0.174	0.13	13.34	0.11	0.003
5.45	1.94	104.42	1.23	127.95	26	582	0.58	0.172	0.13	13.34	0.11	0.002
5.50	1.91	102.91	1.20	123.47	25	564	0.58	0.200	0.15	13.34	0.13	0.002
5.58	1.88	100.42	1.17	117.98	24	542	0.58	0.246	0.20	13.34	0.17	0.003
5.63	1.86	97.56	1.15	112.14	22	516	0.58	0.317	0.28	13.34	0.24	0.003
5.68	1.86	95.99	1.16	110.91	22	513	0.58	0.332	0.30	13.34	0.25	0.004
5.75	1.87	94.77	1.16	110.01	22	513	0.58	0.344	0.31	13.34	0.27	0.005
5.82	1.88	93.46	1.17	109.26	22	514	0.58	0.350	0.32	13.34	0.27	0.004
5.88	1.89	92.46	1.18	108.83	22	515	0.58	0.354	0.32	13.34	0.27	0.004
5.92	1.89	92.77	1.18	109.42	22	520	0.58	0.344	0.31	13.34	0.26	0.003
6.01	1.89	93.47	1.18	110.27	22	528	0.58	0.330	0.29	13.34	0.25	0.005
6.05	1.90	94.59	1.19	112.14	22	539	0.58	0.303	0.26	13.34	0.22	0.002
6.14	1.91	93.89	1.20	112.96	23	548	0.58	0.290	0.25	13.34	0.21	0.005
6.20	1.94	92.30	1.23	113.24	23	552	0.58	0.285	0.24	13.34	0.20	0.003
6.28	1.96	90.00	1.25	112.32	23	552	0.58	0.295	0.25	13.34	0.21	0.004
6.35	1.98	87.63	1.27	111.20	23	549	0.58	0.310	0.26	13.34	0.22	0.004

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	K_c	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vd(15)}$ (%)	N_c	e_v (%)	Settle. (in)
6.40	1.99	85.53	1.29	110.19	23	546	0.58	0.324	0.28	13.34	0.23	0.003
6.45	2.01	82.38	1.32	108.69	23	539	0.58	0.350	0.30	13.34	0.25	0.003
6.54	2.04	78.76	1.36	106.93	23	532	0.58	0.388	0.33	13.34	0.28	0.006
6.58	2.07	75.29	1.40	105.40	23	523	0.58	0.429	0.37	13.34	0.31	0.003
6.63	2.09	72.38	1.44	104.28	23	516	0.58	0.467	0.41	13.34	0.34	0.004
6.75	2.12	69.47	1.49	103.49	23	513	0.58	0.504	0.44	13.34	0.37	0.010
6.79	2.15	67.49	1.55	104.37	23	513	0.58	0.510	0.43	13.34	0.36	0.004
6.85	2.20	65.91	1.66	109.10	25	527	0.58	0.455	0.36	13.34	0.30	0.004
6.93	2.25	63.02	1.81	114.20	26	537	0.58	0.428	0.31	13.34	0.26	0.005
7.06	2.32	58.56	2.01	117.63	28	536	0.58	0.452	0.30	13.34	0.25	0.008
7.11	2.36	53.61	2.17	116.25	28	514	0.58	0.572	0.38	13.34	0.32	0.003
7.17	2.38	50.00	2.22	111.25	27	488	0.59	0.769	0.53	13.34	0.45	0.006
7.24	2.37	47.83	2.20	105.20	26	468	0.59	1.016	0.76	13.34	0.63	0.011
7.30	2.34	47.26	2.09	98.61	24	451	0.59	1.285	1.05	13.34	0.87	0.013
7.37	2.25	51.91	1.81	93.72	22	460	0.59	1.182	1.08	13.34	0.89	0.016
7.42	2.11	63.08	1.47	92.70	20	490	0.59	0.831	0.82	13.34	0.68	0.008
7.48	1.96	78.51	1.25	98.30	20	533	0.58	0.535	0.53	13.34	0.44	0.007
7.55	1.86	91.89	1.15	105.91	21	569	0.59	0.392	0.37	13.34	0.31	0.005
7.61	1.80	101.17	1.11	112.28	22	597	0.59	0.317	0.29	13.34	0.24	0.003
7.68	1.78	106.77	1.09	116.88	22	621	0.59	0.272	0.24	13.34	0.20	0.003
7.73	1.78	109.39	1.10	119.86	23	639	0.58	0.243	0.21	13.34	0.17	0.002
7.79	1.80	109.42	1.11	121.28	23	652	0.58	0.226	0.19	13.34	0.15	0.002
7.86	1.83	107.86	1.13	121.40	24	661	0.58	0.219	0.18	13.34	0.15	0.003
7.91	1.85	106.19	1.14	121.30	24	666	0.58	0.214	0.17	13.34	0.14	0.002
7.98	1.86	104.56	1.15	120.71	24	669	0.58	0.215	0.17	13.34	0.14	0.003

Total estimated settlement: 0.21

Abbreviations

Q_{tn}: Normalized cone resistance
K_c: Fines correction factor
$Q_{tn,cs}$: Equivalent clean sand normalized cone resistance
G_{max}: Small strain shear modulus
CSR: Soil cyclic stress ratio
γ: Cyclic shear strain
$e_{vd(15)}$: Volumetric strain after 15 cycles
N_c: Equivalent number of cycles
e_v: Volumetric strain
Settle.: Calculated settlement

:: Post-earthquake settlement due to soil liquefaction ::

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
8.04	111.06	0.26	1.85	0.86	0.01	8.09	112.20	0.27	1.83	0.86	0.01
8.17	113.02	0.27	1.82	0.86	0.02	8.22	113.91	0.27	1.81	0.86	0.01
8.30	114.67	0.27	1.79	0.86	0.02	8.34	114.96	0.27	1.79	0.86	0.01
8.40	114.68	0.27	1.79	0.86	0.01	8.48	114.46	0.27	1.79	0.86	0.02
8.60	113.27	0.26	1.80	0.85	0.03	8.66	105.30	0.24	1.91	0.85	0.01
8.72	97.13	0.22	2.04	0.85	0.02	8.79	93.59	0.21	2.10	0.85	0.02
8.83	92.83	2.00	0.00	0.85	0.00	8.91	91.95	2.00	0.00	0.85	0.00
8.97	94.08	2.00	0.00	0.85	0.00	9.02	103.50	2.00	0.00	0.85	0.00
9.08	101.28	2.00	0.00	0.85	0.00	9.16	108.40	2.00	0.00	0.84	0.00
9.21	107.82	2.00	0.00	0.84	0.00	9.25	101.53	2.00	0.00	0.84	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
9.34	91.23	2.00	0.00	0.84	0.00	9.38	89.27	2.00	0.00	0.84	0.00
9.47	23.55	2.00	0.00	0.84	0.00	9.52	21.18	2.00	0.00	0.84	0.00
9.60	21.08	2.00	0.00	0.84	0.00	9.66	21.02	2.00	0.00	0.84	0.00
9.74	21.74	2.00	0.00	0.83	0.00	9.81	23.15	2.00	0.00	0.83	0.00
9.88	23.42	2.00	0.00	0.83	0.00	9.94	24.48	2.00	0.00	0.83	0.00
10.01	86.01	2.00	0.00	0.83	0.00	10.05	87.43	2.00	0.00	0.83	0.00
10.16	90.10	2.00	0.00	0.83	0.00	10.20	90.06	2.00	0.00	0.83	0.00
10.29	91.49	0.19	2.08	0.83	0.02	10.34	91.91	2.00	0.00	0.82	0.00
10.37	92.46	2.00	0.00	0.82	0.00	10.45	91.42	2.00	0.00	0.82	0.00
10.51	90.56	2.00	0.00	0.82	0.00	10.58	87.60	2.00	0.00	0.82	0.00
10.68	25.46	2.00	0.00	0.82	0.00	10.72	23.44	2.00	0.00	0.82	0.00
10.76	21.43	2.00	0.00	0.82	0.00	10.87	19.57	2.00	0.00	0.82	0.00
10.97	19.06	1.69	0.00	0.81	0.00	11.02	19.77	1.70	0.00	0.81	0.00
11.10	19.81	1.67	0.00	0.81	0.00	11.16	18.46	1.59	0.00	0.81	0.00
11.20	17.67	1.51	0.00	0.81	0.00	11.29	17.28	1.44	0.00	0.81	0.00
11.33	16.52	1.39	0.00	0.81	0.00	11.41	16.13	1.33	0.00	0.81	0.00
11.52	15.63	1.28	0.00	0.80	0.00	11.59	15.47	1.26	0.00	0.80	0.00
11.64	15.38	1.24	0.00	0.80	0.00	11.70	15.17	1.22	0.00	0.80	0.00
11.75	15.13	1.21	0.00	0.80	0.00	11.84	14.86	1.19	0.00	0.80	0.00
11.91	14.92	1.19	0.00	0.80	0.00	12.01	15.39	1.22	0.00	0.80	0.00
12.08	15.98	1.25	0.00	0.80	0.00	12.14	16.46	1.29	0.00	0.79	0.00
12.18	16.74	1.30	0.00	0.79	0.00	12.25	16.69	1.31	0.00	0.79	0.00
12.31	16.96	1.30	0.00	0.79	0.00	12.40	16.58	1.29	0.00	0.79	0.00
12.46	16.66	1.28	0.00	0.79	0.00	12.53	16.71	1.28	0.00	0.79	0.00
12.57	16.68	1.26	0.00	0.79	0.00	12.63	16.33	1.25	0.00	0.79	0.00
12.70	16.28	1.23	0.00	0.78	0.00	12.75	16.34	1.22	0.00	0.78	0.00
12.84	16.08	1.20	0.00	0.78	0.00	12.91	15.94	1.20	0.00	0.78	0.00
12.95	16.33	1.20	0.00	0.78	0.00	13.02	16.28	1.21	0.00	0.78	0.00
13.07	16.55	1.22	0.00	0.78	0.00	13.13	16.81	1.23	0.00	0.78	0.00
13.20	16.66	1.21	0.00	0.78	0.00	13.33	16.18	1.18	0.00	0.77	0.00
13.37	15.94	1.16	0.00	0.77	0.00	13.42	15.91	1.14	0.00	0.77	0.00
13.50	15.86	1.14	0.00	0.77	0.00	13.55	15.83	1.12	0.00	0.77	0.00
13.62	15.59	1.11	0.00	0.77	0.00	13.68	15.65	1.10	0.00	0.77	0.00
13.73	15.62	1.10	0.00	0.77	0.00	13.80	15.58	1.09	0.00	0.77	0.00
13.90	15.51	1.08	0.00	0.76	0.00	13.95	15.59	1.08	0.00	0.76	0.00
13.99	15.56	1.08	0.00	0.76	0.00	14.05	15.64	1.06	0.00	0.76	0.00
14.12	15.01	1.03	0.00	0.76	0.00	14.25	14.54	0.99	0.00	0.76	0.00
14.30	14.42	0.95	0.00	0.76	0.00	14.34	13.43	0.93	0.00	0.76	0.00
14.39	13.50	0.91	0.00	0.76	0.00	14.44	13.87	0.92	0.00	0.76	0.00
14.52	13.82	0.93	0.00	0.75	0.00	14.58	14.08	0.94	0.00	0.75	0.00
14.65	14.43	0.96	0.00	0.75	0.00	14.73	14.77	0.97	0.00	0.75	0.00
14.77	14.93	0.99	0.00	0.75	0.00	14.83	15.19	1.00	0.00	0.75	0.00
14.92	15.42	1.01	0.00	0.75	0.00	14.97	15.40	1.01	0.00	0.75	0.00
15.13	15.31	0.99	0.00	0.74	0.00	15.18	15.00	0.97	0.00	0.74	0.00
15.23	14.78	0.96	0.00	0.74	0.00	15.28	14.75	0.96	0.00	0.74	0.00
15.36	15.28	0.97	0.00	0.74	0.00	15.41	15.62	2.00	0.00	0.74	0.00
15.45	16.63	2.00	0.00	0.74	0.00	15.51	18.27	2.00	0.00	0.74	0.00
15.68	25.62	2.00	0.00	0.73	0.00	15.72	29.26	2.00	0.00	0.73	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
15.77	93.53	2.00	0.00	0.73	0.00	15.83	98.65	2.00	0.00	0.73	0.00
15.90	103.34	2.00	0.00	0.73	0.00	15.94	107.07	2.00	0.00	0.73	0.00
15.98	109.16	2.00	0.00	0.73	0.00	16.05	110.11	2.00	0.00	0.73	0.00
16.11	110.52	2.00	0.00	0.73	0.00	16.16	110.81	0.19	1.56	0.73	0.01
16.22	111.16	0.19	1.55	0.73	0.01	16.28	111.48	0.19	1.55	0.72	0.01
16.40	111.31	0.19	1.55	0.72	0.02	16.47	110.68	2.00	0.00	0.72	0.00
16.52	109.05	2.00	0.00	0.72	0.00	16.59	107.38	2.00	0.00	0.72	0.00
16.70	98.49	2.00	0.00	0.72	0.00	16.78	93.88	2.00	0.00	0.72	0.00
16.83	87.99	2.00	0.00	0.71	0.00	16.91	24.53	2.00	0.00	0.71	0.00
16.96	21.30	1.29	0.00	0.71	0.00	17.01	18.43	1.09	0.00	0.71	0.00
17.13	15.17	0.94	0.00	0.71	0.00	17.20	14.61	0.81	0.00	0.71	0.00
17.26	12.28	0.74	0.00	0.71	0.00	17.27	11.93	0.73	0.00	0.71	0.00
17.40	13.73	0.76	0.00	0.71	0.00	17.44	13.98	0.81	0.00	0.70	0.00
17.49	14.66	0.83	0.00	0.70	0.00	17.53	14.64	0.84	0.00	0.70	0.00
17.62	14.60	0.84	0.00	0.70	0.00	17.67	14.84	0.87	0.00	0.70	0.00
17.75	16.11	0.90	0.00	0.70	0.00	17.81	16.50	0.94	0.00	0.70	0.00
17.86	16.48	0.94	0.00	0.70	0.00	17.92	16.45	0.94	0.00	0.70	0.00
18.00	16.58	0.93	0.00	0.69	0.00	18.11	15.93	0.91	0.00	0.69	0.00
18.15	15.91	0.89	0.00	0.69	0.00	18.20	15.89	0.88	0.00	0.69	0.00
18.28	15.33	0.87	0.00	0.69	0.00	18.34	15.82	0.86	0.00	0.69	0.00
18.41	15.35	0.87	0.00	0.69	0.00	18.46	15.76	0.86	0.00	0.69	0.00
18.50	15.65	0.89	0.00	0.69	0.00	18.60	16.97	0.91	0.00	0.68	0.00
18.65	16.86	0.94	0.00	0.68	0.00	18.71	17.25	0.96	0.00	0.68	0.00
18.77	17.81	1.01	0.00	0.68	0.00	18.86	19.54	1.07	0.00	0.68	0.00
18.91	20.52	1.15	0.00	0.68	0.00	19.01	21.98	1.21	0.00	0.68	0.00
19.05	23.04	1.28	0.00	0.68	0.00	19.10	24.10	1.33	0.00	0.68	0.00
19.25	24.83	1.35	0.00	0.67	0.00	19.29	24.72	1.39	0.00	0.67	0.00
19.34	25.94	1.37	0.00	0.67	0.00	19.38	23.82	1.34	0.00	0.67	0.00
19.44	23.71	1.26	0.00	0.67	0.00	19.52	21.81	1.22	0.00	0.67	0.00
19.56	21.71	1.18	0.00	0.67	0.00	19.65	21.65	1.18	0.00	0.67	0.00
19.70	22.21	1.20	0.00	0.67	0.00	19.76	22.75	1.23	0.00	0.67	0.00
19.85	23.60	1.26	0.00	0.66	0.00	19.89	24.07	1.28	0.00	0.66	0.00
19.96	24.02	1.30	0.00	0.66	0.00	20.02	24.47	1.32	0.00	0.66	0.00
20.10	25.49	1.34	0.00	0.66	0.00	20.16	25.37	1.36	0.00	0.66	0.00
20.25	25.47	1.35	0.00	0.66	0.00	20.28	25.61	1.36	0.00	0.66	0.00
20.38	25.95	1.35	0.00	0.65	0.00	20.41	25.02	1.29	0.00	0.65	0.00
20.49	22.30	1.18	0.00	0.65	0.00	20.54	20.40	1.02	0.00	0.65	0.00
20.65	16.06	0.89	0.00	0.65	0.00	20.69	15.65	0.80	0.00	0.65	0.00
20.74	15.47	0.76	0.00	0.65	0.00	20.85	14.14	0.72	0.00	0.65	0.00
20.87	13.57	0.68	0.00	0.65	0.00	20.97	12.89	0.66	0.00	0.64	0.00
21.00	13.60	0.71	0.00	0.64	0.00	21.09	16.28	0.80	0.00	0.64	0.00
21.13	17.77	0.89	0.00	0.64	0.00	21.22	19.16	0.94	0.00	0.64	0.00
21.26	18.98	0.96	0.00	0.64	0.00	21.34	18.70	0.94	0.00	0.64	0.00
21.39	18.67	2.00	0.00	0.64	0.00	21.47	20.77	2.00	0.00	0.64	0.00
21.54	24.39	2.00	0.00	0.63	0.00	21.60	27.36	2.00	0.00	0.63	0.00
21.67	94.67	2.00	0.00	0.63	0.00	21.75	107.47	2.00	0.00	0.63	0.00
21.79	113.73	2.00	0.00	0.63	0.00	21.89	123.94	2.00	0.00	0.63	0.00
21.93	125.02	2.00	0.00	0.63	0.00	22.06	125.95	0.21	1.21	0.63	0.02

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
22.11	126.50	0.21	1.20	0.63	0.01	22.16	125.96	0.21	1.21	0.62	0.01
22.19	124.17	0.21	1.22	0.62	0.01	22.25	121.38	0.20	1.24	0.62	0.01
22.32	115.73	0.18	1.29	0.62	0.01	22.40	115.20	0.18	1.29	0.62	0.01
22.45	113.15	0.18	1.31	0.62	0.01	22.55	123.26	0.20	1.22	0.62	0.01
22.60	125.74	0.21	1.19	0.62	0.01	22.65	128.68	0.22	1.17	0.62	0.01
22.71	131.26	0.23	1.15	0.62	0.01	22.80	134.39	0.24	1.13	0.61	0.01
22.85	139.14	0.26	1.09	0.61	0.01	22.93	143.46	0.29	1.06	0.61	0.01
22.98	149.37	0.33	1.03	0.61	0.01	23.05	154.17	0.37	1.00	0.61	0.01
23.11	158.62	0.41	0.97	0.61	0.01	23.18	161.41	0.45	0.96	0.61	0.01
23.24	163.58	0.48	0.95	0.61	0.01	23.32	164.44	0.49	0.94	0.60	0.01
23.38	164.87	0.50	0.94	0.60	0.01	23.43	165.59	0.51	0.93	0.60	0.01
23.51	165.81	0.51	0.93	0.60	0.01	23.58	165.32	0.50	0.93	0.60	0.01
23.64	163.67	0.48	0.94	0.60	0.01	23.70	162.01	0.45	0.94	0.60	0.01
23.77	162.75	0.46	0.94	0.60	0.01	23.84	162.58	0.46	0.93	0.60	0.01
23.91	161.97	0.45	0.94	0.59	0.01	23.99	163.52	0.47	0.93	0.59	0.01
24.03	163.42	0.47	0.93	0.59	0.00	24.09	164.03	0.48	0.92	0.59	0.01
24.17	164.10	0.48	0.92	0.59	0.01	24.21	165.12	0.50	0.91	0.59	0.01
24.31	162.57	0.46	0.92	0.59	0.01	24.35	163.01	0.46	0.92	0.59	0.00
24.45	161.23	0.44	0.92	0.59	0.01	24.49	160.97	0.44	0.93	0.58	0.00
24.57	158.68	0.41	0.93	0.58	0.01	24.62	158.54	0.41	0.93	0.58	0.00
24.71	156.29	0.38	0.94	0.58	0.01	24.78	155.17	0.37	0.95	0.58	0.01
24.83	153.94	0.36	0.95	0.58	0.01	24.88	152.78	0.35	0.95	0.58	0.01
24.96	149.22	0.32	0.97	0.58	0.01	25.03	146.34	0.30	0.98	0.58	0.01
25.09	142.61	0.28	1.00	0.57	0.01	25.14	140.80	0.27	1.01	0.57	0.01
25.23	139.88	0.26	1.02	0.57	0.01	25.29	139.43	0.26	1.02	0.57	0.01
25.34	139.47	0.26	1.01	0.57	0.01	25.40	138.23	0.25	1.02	0.57	0.01
25.47	137.03	0.25	1.03	0.57	0.01	25.53	138.67	0.25	1.01	0.57	0.01
25.59	139.79	0.26	1.01	0.57	0.01	25.66	139.86	0.26	1.00	0.57	0.01
25.72	140.90	0.26	0.99	0.56	0.01	25.79	140.09	0.26	1.00	0.56	0.01
25.88	137.94	0.25	1.01	0.56	0.01	25.93	136.52	0.24	1.01	0.56	0.01
26.01	134.94	0.24	1.02	0.56	0.01	26.06	134.00	0.23	1.03	0.56	0.01
26.15	130.42	0.22	1.05	0.56	0.01	26.20	130.42	0.22	1.04	0.56	0.01
26.27	128.92	0.21	1.05	0.55	0.01	26.32	127.00	0.21	1.06	0.55	0.01
26.41	122.86	0.19	1.09	0.55	0.01	26.46	121.91	0.19	1.10	0.55	0.01
26.54	117.49	2.00	0.00	0.55	0.00	26.58	115.79	2.00	0.00	0.55	0.00
26.64	112.74	2.00	0.00	0.55	0.00	26.72	109.98	2.00	0.00	0.55	0.00
26.81	107.26	2.00	0.00	0.55	0.00	26.86	106.05	2.00	0.00	0.54	0.00
26.93	102.97	2.00	0.00	0.54	0.00	26.99	98.62	2.00	0.00	0.54	0.00
27.06	31.70	2.00	0.00	0.54	0.00	27.12	26.36	2.00	0.00	0.54	0.00
27.18	20.96	2.00	0.00	0.54	0.00	27.25	17.08	2.00	0.00	0.54	0.00
27.33	14.27	0.60	0.00	0.54	0.00	27.39	11.64	0.48	0.00	0.54	0.00
27.47	9.51	0.40	0.00	0.53	0.00	27.51	8.82	0.35	0.00	0.53	0.00
27.57	8.27	0.33	0.00	0.53	0.00	27.66	7.91	0.31	0.00	0.53	0.00
27.71	7.64	0.29	0.00	0.53	0.00	27.80	7.29	0.29	0.00	0.53	0.00
27.84	7.62	0.28	0.00	0.53	0.00	27.91	7.41	0.29	0.00	0.53	0.00
27.96	7.61	0.30	0.00	0.53	0.00	28.03	8.20	0.31	0.00	0.52	0.00
28.10	8.45	0.32	0.00	0.52	0.00	28.16	8.51	0.32	0.00	0.52	0.00
28.23	8.30	0.32	0.00	0.52	0.00	28.29	8.16	0.31	0.00	0.52	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
28.36	8.15	0.31	0.00	0.52	0.00	28.41	8.01	0.31	0.00	0.52	0.00
28.48	8.00	0.30	0.00	0.52	0.00	28.55	7.85	0.30	0.00	0.52	0.00
28.63	7.90	0.30	0.00	0.51	0.00	28.68	7.90	0.31	0.00	0.51	0.00
28.74	8.48	0.33	0.00	0.51	0.00	28.82	9.41	0.37	0.00	0.51	0.00
28.90	11.05	0.41	0.00	0.51	0.00	28.95	11.04	0.42	0.00	0.51	0.00
29.01	10.03	0.39	0.00	0.51	0.00	29.13	9.02	0.36	0.00	0.51	0.00
29.17	8.95	0.34	0.00	0.51	0.00	29.22	8.74	0.33	0.00	0.50	0.00
29.30	8.73	0.33	0.00	0.50	0.00	29.35	8.79	0.33	0.00	0.50	0.00
29.44	8.84	0.33	0.00	0.50	0.00	29.48	8.83	0.33	0.00	0.50	0.00
29.56	8.89	0.34	0.00	0.50	0.00	29.60	8.94	0.34	0.00	0.50	0.00
29.71	9.32	0.35	0.00	0.50	0.00	29.75	9.45	0.36	0.00	0.50	0.00
29.79	9.50	0.36	0.00	0.50	0.00	29.87	9.49	0.36	0.00	0.49	0.00
29.97	9.47	0.37	0.00	0.49	0.00	30.01	10.51	0.47	0.00	0.49	0.00
30.09	16.09	0.61	0.00	0.49	0.00	30.13	19.73	0.77	0.00	0.49	0.00
30.18	22.26	0.85	0.00	0.49	0.00	30.26	21.68	0.83	0.00	0.49	0.00
30.34	18.45	0.73	0.00	0.49	0.00	30.42	15.32	0.62	0.00	0.48	0.00
30.47	13.55	0.52	0.00	0.48	0.00	30.56	11.12	0.46	0.00	0.48	0.00
30.58	11.21	0.43	0.00	0.48	0.00	30.66	11.30	0.43	0.00	0.48	0.00
30.71	11.35	0.43	0.00	0.48	0.00	30.79	11.27	0.42	0.00	0.48	0.00
30.87	10.61	0.40	0.00	0.48	0.00	30.92	10.02	0.37	0.00	0.48	0.00
31.01	9.04	0.34	0.00	0.47	0.00	31.06	8.71	0.32	0.00	0.47	0.00
31.11	8.77	0.33	0.00	0.47	0.00	31.18	9.20	0.35	0.00	0.47	0.00
31.26	10.15	0.37	0.00	0.47	0.00	31.32	10.65	0.39	0.00	0.47	0.00
31.37	10.90	0.41	0.00	0.47	0.00	31.44	11.08	0.41	0.00	0.47	0.00
31.50	10.81	0.41	0.00	0.47	0.00	31.59	11.05	0.40	0.00	0.46	0.00
31.64	10.27	0.40	0.00	0.46	0.00	31.72	11.03	0.40	0.00	0.46	0.00
31.76	11.21	0.43	0.00	0.46	0.00	31.83	12.28	0.46	0.00	0.46	0.00
31.91	13.35	0.51	0.00	0.46	0.00	31.99	14.81	0.55	0.00	0.46	0.00
32.03	15.38	0.58	0.00	0.46	0.00	32.09	15.94	0.60	0.00	0.46	0.00
32.17	16.18	0.60	0.00	0.45	0.00	32.25	15.45	0.59	0.00	0.45	0.00
32.33	15.43	0.58	0.00	0.45	0.00	32.38	15.42	0.58	0.00	0.45	0.00
32.42	15.41	2.00	0.00	0.45	0.00	32.49	18.32	2.00	0.00	0.45	0.00
32.56	85.94	2.00	0.00	0.45	0.00	32.65	102.54	2.00	0.00	0.45	0.00
32.69	106.44	2.00	0.00	0.45	0.00	32.78	116.45	2.00	0.00	0.44	0.00
32.81	114.67	2.00	0.00	0.44	0.00	32.88	118.81	2.00	0.00	0.44	0.00
32.96	123.29	2.00	0.00	0.44	0.00	33.05	126.94	0.20	0.85	0.44	0.01
33.08	122.76	0.19	0.87	0.44	0.00	33.18	117.36	0.17	0.90	0.44	0.01
33.22	113.07	0.16	0.92	0.44	0.01	33.31	117.57	0.17	0.89	0.44	0.01
33.36	122.95	0.19	0.86	0.43	0.01	33.40	128.12	0.20	0.83	0.43	0.00
33.50	131.99	0.21	0.80	0.43	0.01	33.54	137.94	0.24	0.77	0.43	0.00
33.62	142.88	0.26	0.75	0.43	0.01	33.67	147.62	0.29	0.73	0.43	0.00
33.77	152.60	0.32	0.71	0.43	0.01	33.81	154.24	0.34	0.70	0.43	0.00
33.90	159.03	0.38	0.68	0.43	0.01	33.94	158.09	0.37	0.68	0.42	0.00
34.03	165.90	0.47	0.65	0.42	0.01	34.07	164.53	0.45	0.66	0.42	0.00
34.12	169.94	0.54	0.64	0.42	0.00	34.21	174.19	0.62	0.57	0.42	0.01
34.26	179.12	0.75	0.36	0.42	0.00	34.34	183.62	0.91	0.27	0.42	0.00
34.40	188.06	1.11	0.15	0.42	0.00	34.47	191.44	1.30	0.08	0.42	0.00
34.53	194.02	1.48	0.00	0.41	0.00	34.61	195.97	1.63	0.00	0.41	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
34.69	196.31	1.66	0.00	0.41	0.00	34.73	197.03	1.72	0.00	0.41	0.00
34.79	196.84	1.71	0.00	0.41	0.00	34.87	197.00	1.72	0.00	0.41	0.00
34.91	198.07	1.82	0.00	0.41	0.00	35.00	200.61	2.00	0.00	0.41	0.00
35.04	203.04	2.00	0.00	0.41	0.00	35.12	206.62	2.00	0.00	0.40	0.00
35.18	209.77	2.00	0.00	0.40	0.00	35.27	210.11	2.00	0.00	0.40	0.00
35.30	211.55	2.00	0.00	0.40	0.00	35.37	209.83	2.00	0.00	0.40	0.00
35.44	208.36	2.00	0.00	0.40	0.00	35.50	204.17	2.00	0.00	0.40	0.00
35.57	201.73	2.00	0.00	0.40	0.00	35.65	196.89	1.70	0.00	0.40	0.00
35.71	194.34	1.49	0.00	0.39	0.00	35.79	192.27	1.35	0.07	0.39	0.00
35.83	193.49	1.43	0.00	0.39	0.00	35.93	191.01	1.26	0.07	0.39	0.00
35.97	195.02	1.54	0.00	0.39	0.00	36.06	192.42	1.35	0.00	0.39	0.00
36.11	192.48	1.36	0.00	0.39	0.00	36.16	189.42	1.17	0.10	0.39	0.00
36.25	185.56	0.98	0.19	0.39	0.00	36.32	184.10	0.92	0.24	0.38	0.00
36.37	181.85	0.84	0.33	0.38	0.00	36.42	179.70	0.76	0.33	0.38	0.00
36.49	176.74	0.68	0.42	0.38	0.00	36.57	172.78	0.59	0.52	0.38	0.00
36.61	170.62	0.54	0.57	0.38	0.00	36.70	166.76	0.48	0.58	0.38	0.01
36.75	163.68	2.00	0.00	0.38	0.00	36.83	160.86	2.00	0.00	0.38	0.00
36.88	160.07	2.00	0.00	0.37	0.00	36.97	141.05	2.00	0.00	0.37	0.00
37.01	139.09	2.00	0.00	0.37	0.00	37.10	115.12	2.00	0.00	0.37	0.00
37.15	38.46	2.00	0.00	0.37	0.00	37.22	29.29	2.00	0.00	0.37	0.00
37.28	23.63	2.00	0.00	0.37	0.00	37.36	18.67	0.70	0.00	0.37	0.00
37.41	17.40	0.57	0.00	0.37	0.00	37.49	13.34	0.50	0.00	0.36	0.00
37.54	12.39	0.43	0.00	0.36	0.00	37.63	11.85	0.41	0.00	0.36	0.00
37.67	11.79	0.40	0.00	0.36	0.00	37.76	11.54	0.40	0.00	0.36	0.00
37.84	11.70	0.40	0.00	0.36	0.00	37.89	11.93	0.40	0.00	0.36	0.00
37.93	11.92	0.40	0.00	0.36	0.00	38.00	11.97	0.41	0.00	0.36	0.00
38.07	12.18	0.41	0.00	0.35	0.00	38.16	12.17	0.41	0.00	0.35	0.00
38.20	12.16	0.42	0.00	0.35	0.00	38.27	12.50	0.43	0.00	0.35	0.00
38.34	13.64	0.46	0.00	0.35	0.00	38.39	14.56	0.50	0.00	0.35	0.00
38.47	15.35	0.52	0.00	0.35	0.00	38.57	15.39	0.53	0.00	0.35	0.00
38.60	15.49	0.54	0.00	0.35	0.00	38.69	16.11	0.55	0.00	0.34	0.00
38.72	16.17	0.54	0.00	0.34	0.00	38.80	14.88	0.51	0.00	0.34	0.00
38.89	13.70	0.41	0.00	0.34	0.00	38.91	8.19	0.37	0.00	0.34	0.00
38.99	11.62	0.35	0.00	0.34	0.00	39.06	11.84	0.42	0.00	0.34	0.00
39.12	14.24	0.49	0.00	0.34	0.00	39.17	17.60	2.00	0.00	0.34	0.00
39.28	24.88	2.00	0.00	0.33	0.00	39.33	32.04	2.00	0.00	0.33	0.00
39.38	102.93	2.00	0.00	0.33	0.00	39.44	114.78	2.00	0.00	0.33	0.00
39.51	135.43	2.00	0.00	0.33	0.00	39.60	146.15	2.00	0.00	0.33	0.00
39.63	143.20	2.00	0.00	0.33	0.00	39.72	143.29	0.26	0.57	0.33	0.01
39.78	141.55	0.25	0.57	0.33	0.00	39.85	140.75	0.25	0.57	0.32	0.01
39.90	140.76	0.25	0.57	0.32	0.00	39.98	141.29	0.25	0.57	0.32	0.01
40.03	141.43	0.25	0.57	0.32	0.00	40.11	142.96	0.26	0.56	0.32	0.00
40.16	145.87	0.27	0.55	0.32	0.00	40.25	147.50	0.28	0.54	0.32	0.01
40.29	146.92	0.28	0.54	0.32	0.00	40.36	144.15	0.26	0.55	0.32	0.00
40.44	139.67	0.24	0.56	0.31	0.01	40.52	135.59	0.22	0.57	0.31	0.01
40.56	137.26	0.23	0.56	0.31	0.00	40.69	127.25	0.19	0.60	0.31	0.01
40.75	130.37	0.20	0.58	0.31	0.00	40.84	127.67	0.20	0.59	0.31	0.01
40.90	125.52	0.19	0.60	0.31	0.00	40.96	123.50	2.00	0.00	0.31	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
41.02	121.49	2.00	0.00	0.30	0.00	41.11	117.17	2.00	0.00	0.30	0.00
41.15	116.72	2.00	0.00	0.30	0.00	41.26	106.79	2.00	0.00	0.30	0.00
41.28	106.13	2.00	0.00	0.30	0.00	41.35	102.50	2.00	0.00	0.30	0.00
41.42	99.54	2.00	0.00	0.30	0.00	41.47	35.68	2.00	0.00	0.30	0.00
41.54	33.06	2.00	0.00	0.30	0.00	41.64	29.77	2.00	0.00	0.29	0.00
41.69	27.68	2.00	0.00	0.29	0.00	41.76	25.88	2.00	0.00	0.29	0.00
41.81	24.46	0.82	0.00	0.29	0.00	41.88	23.44	0.78	0.00	0.29	0.00
41.95	22.43	0.74	0.00	0.29	0.00	42.04	21.19	0.71	0.00	0.29	0.00
42.07	20.94	0.69	0.00	0.29	0.00	42.16	20.52	0.68	0.00	0.29	0.00
42.21	19.89	0.65	0.00	0.28	0.00	42.27	18.92	0.62	0.00	0.28	0.00
42.34	17.62	0.58	0.00	0.28	0.00	42.43	16.25	0.56	0.00	0.28	0.00
42.47	17.72	0.57	0.00	0.28	0.00	42.54	17.82	0.62	0.00	0.28	0.00
42.61	21.36	0.68	0.00	0.28	0.00	42.65	22.82	0.75	0.00	0.28	0.00
42.73	23.72	0.76	0.00	0.28	0.00	42.79	23.07	0.77	0.00	0.27	0.00
42.88	22.98	2.00	0.00	0.27	0.00	42.92	23.84	2.00	0.00	0.27	0.00
43.01	84.40	2.00	0.00	0.27	0.00	43.05	84.62	2.00	0.00	0.27	0.00
43.15	86.65	2.00	0.00	0.27	0.00	43.23	88.53	2.00	0.00	0.27	0.00
43.28	90.56	2.00	0.00	0.27	0.00	43.32	90.74	2.00	0.00	0.27	0.00
43.37	31.59	2.00	0.00	0.26	0.00	43.46	26.87	2.00	0.00	0.26	0.00
43.54	21.77	2.00	0.00	0.26	0.00	43.59	19.80	2.00	0.00	0.26	0.00
43.68	18.05	0.60	0.00	0.26	0.00	43.70	17.48	0.56	0.00	0.26	0.00
43.77	16.75	0.54	0.00	0.26	0.00	43.85	16.23	0.52	0.00	0.26	0.00
43.90	15.35	0.47	0.00	0.26	0.00	43.99	12.24	0.41	0.00	0.25	0.00
44.03	11.16	0.35	0.00	0.25	0.00	44.12	10.30	0.33	0.00	0.25	0.00
44.17	10.03	0.32	0.00	0.25	0.00	44.25	10.45	0.38	0.00	0.25	0.00
44.32	16.11	0.57	0.00	0.25	0.00	44.38	26.98	0.88	0.00	0.25	0.00
44.43	99.83	0.14	0.58	0.25	0.00	44.51	102.44	0.14	0.56	0.25	0.01
44.57	34.10	1.07	0.00	0.24	0.00	44.65	26.63	0.90	0.00	0.24	0.00
44.69	23.17	0.74	0.00	0.24	0.00	44.76	19.28	2.00	0.00	0.24	0.00
44.84	21.00	2.00	0.00	0.24	0.00	44.90	99.49	2.00	0.00	0.24	0.00
44.96	128.48	2.00	0.00	0.24	0.00	45.01	144.70	2.00	0.00	0.24	0.00
45.11	131.84	2.00	0.00	0.24	0.00	45.19	121.10	2.00	0.00	0.23	0.00
45.23	118.73	2.00	0.00	0.23	0.00	45.32	118.68	0.17	0.47	0.23	0.00
45.36	118.61	0.17	0.47	0.23	0.00	45.49	118.96	0.17	0.46	0.23	0.01
45.53	119.97	0.18	0.46	0.23	0.00	45.58	120.20	0.18	0.46	0.23	0.00
45.62	121.69	0.18	0.45	0.23	0.00	45.67	120.13	0.18	0.45	0.23	0.00
45.76	121.93	0.18	0.45	0.22	0.00	45.84	125.61	0.19	0.43	0.22	0.00
45.89	126.87	0.19	0.43	0.22	0.00	45.98	130.85	0.21	0.41	0.22	0.00
46.02	124.82	0.19	0.43	0.22	0.00	46.10	133.18	0.21	0.40	0.22	0.00
46.14	137.45	0.23	0.39	0.22	0.00	46.23	143.06	0.26	0.38	0.22	0.00
46.31	148.59	0.29	0.36	0.22	0.00	46.36	152.14	0.31	0.35	0.21	0.00
46.41	156.26	0.35	0.35	0.21	0.00	46.47	161.18	0.40	0.34	0.21	0.00
46.54	163.69	0.43	0.33	0.21	0.00	46.61	165.75	0.45	0.32	0.21	0.00
46.67	166.55	0.47	0.32	0.21	0.00	46.73	160.69	0.39	0.33	0.21	0.00
46.80	152.27	0.31	0.34	0.21	0.00	46.87	136.06	2.00	0.00	0.21	0.00
46.93	125.41	2.00	0.00	0.20	0.00	47.01	125.85	2.00	0.00	0.20	0.00
47.06	141.00	2.00	0.00	0.20	0.00	47.13	144.12	2.00	0.00	0.20	0.00
47.20	146.95	2.00	0.00	0.20	0.00	47.25	146.77	2.00	0.00	0.20	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
47.33	140.69	2.00	0.00	0.20	0.00	47.38	140.49	2.00	0.00	0.20	0.00
47.47	130.61	2.00	0.00	0.20	0.00	47.52	124.71	2.00	0.00	0.19	0.00
47.60	119.38	2.00	0.00	0.19	0.00	47.64	117.20	2.00	0.00	0.19	0.00
47.73	110.54	2.00	0.00	0.19	0.00	47.79	106.49	2.00	0.00	0.19	0.00
47.86	102.50	2.00	0.00	0.19	0.00	47.90	38.11	2.00	0.00	0.19	0.00
48.00	32.49	2.00	0.00	0.19	0.00	48.07	31.51	2.00	0.00	0.19	0.00
48.10	34.66	2.00	0.00	0.18	0.00	48.18	110.87	2.00	0.00	0.18	0.00
48.24	132.78	2.00	0.00	0.18	0.00	48.31	152.14	2.00	0.00	0.18	0.00
48.37	147.55	2.00	0.00	0.18	0.00	48.45	166.03	2.00	0.00	0.18	0.00
48.51	165.85	2.00	0.00	0.18	0.00	48.56	168.51	0.50	0.27	0.18	0.00
48.63	170.72	0.53	0.26	0.18	0.00	48.72	169.99	0.52	0.26	0.17	0.00
48.78	166.72	0.47	0.27	0.17	0.00	48.84	165.17	0.45	0.27	0.17	0.00
48.90	163.21	0.42	0.27	0.17	0.00	48.95	161.83	0.40	0.27	0.17	0.00
49.03	161.23	0.40	0.27	0.17	0.00	49.12	161.46	0.40	0.26	0.17	0.00
49.15	160.70	0.39	0.26	0.17	0.00	49.23	159.39	0.38	0.26	0.17	0.00
49.29	157.94	0.36	0.26	0.16	0.00	49.37	153.66	0.32	0.27	0.16	0.00
49.43	150.83	0.30	0.27	0.16	0.00	49.52	143.62	0.26	0.28	0.16	0.00
49.56	139.68	0.24	0.28	0.16	0.00	49.62	135.58	0.22	0.29	0.16	0.00
49.69	130.99	0.21	0.30	0.16	0.00	49.76	128.44	0.20	0.30	0.16	0.00
49.82	125.06	0.19	0.30	0.16	0.00	49.88	124.34	0.19	0.30	0.15	0.00
49.96	126.57	0.19	0.30	0.15	0.00	50.00	131.56	0.21	0.28	0.15	0.00
50.09	136.20	0.23	0.27	0.15	0.00	50.13	139.84	0.24	0.27	0.15	0.00
50.23	147.32	0.28	0.25	0.15	0.00	50.27	146.87	0.28	0.25	0.15	0.00
50.34	148.68	0.29	0.25	0.15	0.00	50.40	146.42	0.28	0.25	0.15	0.00
50.47	142.56	0.25	0.25	0.14	0.00	50.62	152.27	0.31	0.24	0.14	0.00
50.65	153.89	0.33	0.23	0.14	0.00	50.71	156.90	0.35	0.23	0.14	0.00
50.74	158.66	0.37	0.22	0.14	0.00	50.80	158.80	0.37	0.22	0.14	0.00
50.88	161.51	0.40	0.22	0.14	0.00	50.92	162.04	0.41	0.22	0.14	0.00
51.01	165.07	0.44	0.21	0.14	0.00	51.05	165.42	0.45	0.21	0.13	0.00
51.14	165.38	0.45	0.21	0.13	0.00	51.19	165.64	0.45	0.20	0.13	0.00
51.26	171.35	0.55	0.20	0.13	0.00	51.32	153.14	0.32	0.21	0.13	0.00
51.41	169.57	0.51	0.20	0.13	0.00	51.45	163.53	0.42	0.20	0.13	0.00
51.53	162.78	0.42	0.20	0.13	0.00	51.58	161.12	0.40	0.20	0.13	0.00
51.67	159.76	0.38	0.20	0.12	0.00	51.72	157.10	0.36	0.20	0.12	0.00
51.80	154.63	0.33	0.20	0.12	0.00	51.85	152.71	0.32	0.20	0.12	0.00
51.96	150.54	2.00	0.00	0.12	0.00	51.98	155.89	2.00	0.00	0.12	0.00
52.06	140.67	2.00	0.00	0.12	0.00	52.12	152.40	2.00	0.00	0.12	0.00
52.20	143.73	2.00	0.00	0.12	0.00	52.25	142.25	2.00	0.00	0.11	0.00
52.33	133.26	2.00	0.00	0.11	0.00	52.38	128.93	2.00	0.00	0.11	0.00
52.47	117.33	2.00	0.00	0.11	0.00	52.51	116.91	2.00	0.00	0.11	0.00
52.61	117.61	0.17	0.22	0.11	0.00	52.63	117.90	0.17	0.22	0.11	0.00
52.74	121.40	0.18	0.21	0.11	0.00	52.76	121.11	0.18	0.21	0.11	0.00
52.82	120.94	0.18	0.21	0.10	0.00	52.91	120.74	0.18	0.21	0.10	0.00
52.97	120.96	0.18	0.20	0.10	0.00	53.04	120.93	0.18	0.20	0.10	0.00
53.10	121.63	0.18	0.20	0.10	0.00	53.16	122.66	0.18	0.20	0.10	0.00
53.22	123.40	0.19	0.19	0.10	0.00	53.29	122.88	0.18	0.19	0.10	0.00
53.36	122.58	2.00	0.00	0.10	0.00	53.44	119.76	2.00	0.00	0.09	0.00
53.48	118.79	2.00	0.00	0.09	0.00	53.55	111.04	2.00	0.00	0.09	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
53.64	39.07	2.00	0.00	0.09	0.00	53.69	34.05	2.00	0.00	0.09	0.00
53.75	29.82	2.00	0.00	0.09	0.00	53.84	30.15	2.00	0.00	0.09	0.00
53.89	30.14	2.00	0.00	0.09	0.00	53.96	30.38	2.00	0.00	0.09	0.00
54.04	104.45	2.00	0.00	0.08	0.00	54.08	111.36	2.00	0.00	0.08	0.00
54.14	124.56	2.00	0.00	0.08	0.00	54.23	124.35	2.00	0.00	0.08	0.00
54.27	116.71	2.00	0.00	0.08	0.00	54.34	112.19	2.00	0.00	0.08	0.00
54.41	106.67	2.00	0.00	0.08	0.00	54.49	103.96	0.15	0.17	0.08	0.00
54.53	114.45	0.17	0.16	0.08	0.00	54.62	125.00	0.19	0.14	0.07	0.00
54.67	135.41	0.22	0.13	0.07	0.00	54.73	132.74	0.21	0.13	0.07	0.00
54.80	124.94	0.19	0.14	0.07	0.00	54.89	112.79	0.16	0.15	0.07	0.00
54.95	125.85	0.19	0.13	0.07	0.00	55.02	113.67	0.16	0.14	0.07	0.00
55.06	120.35	0.18	0.13	0.07	0.00	55.12	133.89	0.22	0.12	0.07	0.00
55.20	135.61	0.23	0.12	0.06	0.00	55.27	125.34	0.19	0.12	0.06	0.00
55.33	122.07	0.18	0.12	0.06	0.00	55.41	138.48	0.24	0.11	0.06	0.00
55.47	147.82	0.29	0.10	0.06	0.00	55.55	153.66	0.33	0.10	0.06	0.00
55.59	157.15	0.36	0.09	0.06	0.00	55.65	161.80	0.41	0.09	0.06	0.00
55.73	165.16	0.45	0.09	0.06	0.00	55.83	164.45	0.44	0.08	0.05	0.00
55.86	162.86	0.42	0.08	0.05	0.00	55.95	158.68	0.37	0.08	0.05	0.00
55.99	155.72	0.34	0.08	0.05	0.00	56.07	149.50	0.30	0.08	0.05	0.00
56.11	146.68	0.28	0.08	0.05	0.00	56.23	142.25	0.25	0.08	0.05	0.00
56.28	141.91	0.25	0.08	0.05	0.00	56.31	140.70	0.25	0.08	0.05	0.00
56.39	137.10	0.23	0.08	0.04	0.00	56.44	135.46	2.00	0.00	0.04	0.00
56.53	149.39	2.00	0.00	0.04	0.00	56.60	184.15	2.00	0.00	0.04	0.00
56.65	175.72	2.00	0.00	0.04	0.00	56.72	160.09	2.00	0.00	0.04	0.00
56.77	136.72	2.00	0.00	0.04	0.00	56.84	128.66	2.00	0.00	0.04	0.00
56.90	130.30	2.00	0.00	0.04	0.00	56.96	129.16	2.00	0.00	0.03	0.00
57.07	164.94	2.00	0.00	0.03	0.00	57.11	168.45	2.00	0.00	0.03	0.00
57.17	147.88	2.00	0.00	0.03	0.00	57.23	149.84	2.00	0.00	0.03	0.00
57.29	157.25	0.36	0.05	0.03	0.00	57.38	170.49	0.53	0.04	0.03	0.00
57.42	177.61	0.68	0.03	0.03	0.00	57.51	185.11	0.93	0.02	0.03	0.00
57.56	188.83	1.09	0.01	0.02	0.00	57.64	189.24	1.11	0.01	0.02	0.00
57.69	189.28	1.12	0.01	0.02	0.00	57.78	187.40	1.03	0.01	0.02	0.00
57.87	184.39	0.90	0.01	0.02	0.00	57.91	183.22	0.86	0.01	0.02	0.00
57.95	182.13	0.82	0.02	0.02	0.00	58.05	178.98	0.72	0.02	0.02	0.00
58.09	177.66	0.69	0.02	0.02	0.00	58.17	174.87	0.62	0.02	0.01	0.00
58.22	173.55	0.59	0.02	0.01	0.00	58.31	169.45	0.51	0.02	0.01	0.00
58.35	167.21	0.48	0.02	0.01	0.00	58.45	166.96	0.47	0.01	0.01	0.00
58.49	166.92	0.47	0.01	0.01	0.00	58.55	166.72	0.47	0.01	0.01	0.00
58.60	167.30	0.48	0.01	0.01	0.00	58.75	182.94	0.85	0.00	0.00	0.00
58.79	189.57	1.13	0.00	0.00	0.00	58.84	193.23	1.34	0.00	0.00	0.00
58.88	200.51	1.95	0.00	0.00	0.00	58.93	209.50	2.00	0.00	0.00	0.00
59.04	221.19	2.00	0.00	0.00	0.00	59.10	228.99	2.00	0.00	0.00	0.00
59.15	229.30	2.00	0.00	0.00	0.00	59.23	225.93	2.00	0.00	0.00	0.00
59.28	222.79	2.00	0.00	0.00	0.00	59.35	219.64	2.00	0.00	0.00	0.00
59.41	217.14	2.00	0.00	0.00	0.00	59.47	209.57	2.00	0.00	0.00	0.00
59.54	203.93	2.00	0.00	0.00	0.00	59.59	197.73	1.68	0.00	0.00	0.00
59.68	168.60	0.50	0.00	0.00	0.00	59.74	172.80	0.58	0.00	0.00	0.00
59.78	171.19	0.55	0.00	0.00	0.00	59.87	162.97	0.42	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
59.95	149.60	0.30	0.00	0.00	0.00	59.98	145.46	0.27	0.00	0.00	0.00
60.04	138.91	0.24	0.00	0.00	0.00	60.11	131.37	0.21	0.00	0.00	0.00
60.17	127.53	0.20	0.00	0.00	0.00	60.26	124.99	0.19	0.00	0.00	0.00
60.36	120.97	0.18	0.00	0.00	0.00	60.39	117.79	2.00	0.00	0.00	0.00
60.46	113.28	2.00	0.00	0.00	0.00	60.53	134.91	2.00	0.00	0.00	0.00
60.58	157.78	2.00	0.00	0.00	0.00	60.66	140.11	2.00	0.00	0.00	0.00
60.75	117.66	2.00	0.00	0.00	0.00	60.78	42.83	2.00	0.00	0.00	0.00
60.83	35.83	2.00	0.00	0.00	0.00	60.92	28.11	2.00	0.00	0.00	0.00
60.97	24.66	2.00	0.00	0.00	0.00	61.03	24.71	0.74	0.00	0.00	0.00
61.11	24.71	2.00	0.00	0.00	0.00	61.16	24.72	2.00	0.00	0.00	0.00
61.23	32.80	2.00	0.00	0.00	0.00	61.33	44.66	2.00	0.00	0.00	0.00
61.41	114.60	2.00	0.00	0.00	0.00	61.46	119.19	2.00	0.00	0.00	0.00
61.52	121.94	2.00	0.00	0.00	0.00	61.59	124.88	2.00	0.00	0.00	0.00
61.64	126.81	2.00	0.00	0.00	0.00	61.72	127.91	0.20	0.00	0.00	0.00
61.82	128.82	0.20	0.00	0.00	0.00	61.90	129.52	0.21	0.00	0.00	0.00
61.94	129.78	0.21	0.00	0.00	0.00	62.00	130.10	0.21	0.00	0.00	0.00
62.08	130.17	0.21	0.00	0.00	0.00	62.12	130.79	0.21	0.00	0.00	0.00
62.21	131.11	0.21	0.00	0.00	0.00	62.25	131.60	0.21	0.00	0.00	0.00
62.33	131.94	0.22	0.00	0.00	0.00	62.34	131.62	0.21	0.00	0.00	0.00
62.43	130.87	0.21	0.00	0.00	0.00	62.55	131.34	0.21	0.00	0.00	0.00
62.60	130.57	0.21	0.00	0.00	0.00	62.68	129.79	0.21	0.00	0.00	0.00
62.73	128.87	0.21	0.00	0.00	0.00	62.78	128.18	0.20	0.00	0.00	0.00
62.91	124.48	2.00	0.00	0.00	0.00	62.97	122.63	2.00	0.00	0.00	0.00
63.04	120.38	2.00	0.00	0.00	0.00	63.08	117.20	2.00	0.00	0.00	0.00
63.17	46.38	2.00	0.00	0.00	0.00	63.21	38.99	2.00	0.00	0.00	0.00
63.28	31.93	2.00	0.00	0.00	0.00	63.35	26.98	2.00	0.00	0.00	0.00
63.40	24.09	0.72	0.00	0.00	0.00	63.47	21.55	0.65	0.00	0.00	0.00
63.52	19.66	0.58	0.00	0.00	0.00	63.58	17.45	0.53	0.00	0.00	0.00
63.63	16.26	0.48	0.00	0.00	0.00	63.69	15.37	0.45	0.00	0.00	0.00
63.75	14.29	0.42	0.00	0.00	0.00	63.79	13.37	0.40	0.00	0.00	0.00
63.87	13.37	0.39	0.00	0.00	0.00	63.92	13.36	0.48	0.00	0.00	0.00
64.01	22.33	2.00	0.00	0.00	0.00	64.07	113.01	2.00	0.00	0.00	0.00
64.12	125.79	2.00	0.00	0.00	0.00	64.18	141.29	2.00	0.00	0.00	0.00
64.27	143.73	2.00	0.00	0.00	0.00	64.36	134.16	2.00	0.00	0.00	0.00
64.41	128.19	2.00	0.00	0.00	0.00	64.45	120.04	2.00	0.00	0.00	0.00
64.53	39.06	2.00	0.00	0.00	0.00	64.58	33.32	2.00	0.00	0.00	0.00
64.67	24.63	2.00	0.00	0.00	0.00	64.72	22.07	0.66	0.00	0.00	0.00
64.77	19.88	0.58	0.00	0.00	0.00	64.85	16.64	0.51	0.00	0.00	0.00
64.90	15.03	0.43	0.00	0.00	0.00	64.99	12.61	0.39	0.00	0.00	0.00
65.04	12.28	0.35	0.00	0.00	0.00	65.12	11.99	0.35	0.00	0.00	0.00
65.17	11.84	0.34	0.00	0.00	0.00	65.25	11.74	0.34	0.00	0.00	0.00
65.30	11.86	0.34	0.00	0.00	0.00	65.36	11.64	0.34	0.00	0.00	0.00
65.43	11.87	0.34	0.00	0.00	0.00	65.52	12.25	0.35	0.00	0.00	0.00
65.57	12.48	0.36	0.00	0.00	0.00	65.66	13.09	0.38	0.00	0.00	0.00
65.71	14.19	0.42	0.00	0.00	0.00	65.78	15.64	0.46	0.00	0.00	0.00
65.83	17.05	0.49	0.00	0.00	0.00	65.91	17.19	0.50	0.00	0.00	0.00
65.97	16.11	0.47	0.00	0.00	0.00	66.01	14.27	0.42	0.00	0.00	0.00
66.10	12.74	0.39	0.00	0.00	0.00	66.19	12.87	0.37	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
66.23	13.01	0.37	0.00	0.00	0.00	66.32	12.72	0.37	0.00	0.00	0.00
66.35	12.48	0.36	0.00	0.00	0.00	66.41	12.24	0.36	0.00	0.00	0.00
66.49	12.81	0.38	0.00	0.00	0.00	66.54	14.14	0.40	0.00	0.00	0.00
66.61	14.32	0.41	0.00	0.00	0.00	66.67	13.75	0.39	0.00	0.00	0.00
66.76	12.74	0.38	0.00	0.00	0.00	66.80	12.79	0.41	0.00	0.00	0.00
66.89	16.82	0.56	0.00	0.00	0.00	66.98	27.83	2.00	0.00	0.00	0.00
67.02	36.01	2.00	0.00	0.00	0.00	67.07	106.60	2.00	0.00	0.00	0.00
67.16	129.45	2.00	0.00	0.00	0.00	67.20	135.81	2.00	0.00	0.00	0.00
67.32	153.42	2.00	0.00	0.00	0.00	67.38	144.61	2.00	0.00	0.00	0.00
67.43	143.65	0.27	0.00	0.00	0.00	67.47	146.56	0.28	0.00	0.00	0.00
67.54	149.40	0.30	0.00	0.00	0.00	67.60	150.63	0.31	0.00	0.00	0.00
67.70	158.65	0.38	0.00	0.00	0.00	67.77	161.16	0.41	0.00	0.00	0.00
67.86	175.27	0.63	0.00	0.00	0.00	67.91	158.98	0.38	0.00	0.00	0.00
67.94	157.34	0.37	0.00	0.00	0.00	68.00	164.35	0.44	0.00	0.00	0.00
68.05	159.02	0.38	0.00	0.00	0.00	68.12	161.25	0.41	0.00	0.00	0.00
68.20	167.03	0.48	0.00	0.00	0.00	68.25	173.00	0.59	0.00	0.00	0.00
68.31	178.80	0.72	0.00	0.00	0.00	68.37	183.36	0.87	0.00	0.00	0.00
68.46	186.30	0.99	0.00	0.00	0.00	68.53	189.03	1.11	0.00	0.00	0.00
68.62	190.49	1.19	0.00	0.00	0.00	68.65	189.25	1.12	0.00	0.00	0.00
68.73	190.40	1.18	0.00	0.00	0.00	68.78	189.00	1.11	0.00	0.00	0.00
68.86	187.03	1.02	0.00	0.00	0.00	68.92	182.74	0.85	0.00	0.00	0.00
69.04	180.67	0.78	0.00	0.00	0.00	69.09	179.28	0.74	0.00	0.00	0.00
69.13	179.78	0.75	0.00	0.00	0.00	69.17	180.23	0.77	0.00	0.00	0.00
69.26	186.93	1.01	0.00	0.00	0.00	69.31	191.07	1.22	0.00	0.00	0.00
69.40	198.66	1.77	0.00	0.00	0.00	69.44	201.41	2.00	0.00	0.00	0.00
69.53	205.67	2.00	0.00	0.00	0.00	69.57	205.14	2.00	0.00	0.00	0.00
69.66	203.89	2.00	0.00	0.00	0.00	69.70	203.12	2.00	0.00	0.00	0.00
69.76	203.86	2.00	0.00	0.00	0.00	69.84	202.56	2.00	0.00	0.00	0.00
69.89	203.52	2.00	0.00	0.00	0.00	70.03	206.72	2.00	0.00	0.00	0.00
70.07	207.45	2.00	0.00	0.00	0.00	70.14	208.77	2.00	0.00	0.00	0.00
70.19	210.36	2.00	0.00	0.00	0.00	70.23	212.58	2.00	0.00	0.00	0.00
70.28	207.61	2.00	0.00	0.00	0.00	70.37	212.66	2.00	0.00	0.00	0.00
70.41	209.37	2.00	0.00	0.00	0.00	70.47	213.67	2.00	0.00	0.00	0.00
70.58	245.76	2.00	0.00	0.00	0.00	70.63	254.00	2.00	0.00	0.00	0.00
70.68	254.00	2.00	0.00	0.00	0.00	70.77	246.93	2.00	0.00	0.00	0.00
70.81	249.24	2.00	0.00	0.00	0.00	70.91	254.00	2.00	0.00	0.00	0.00
70.94	254.00	2.00	0.00	0.00	0.00	71.03	254.00	2.00	0.00	0.00	0.00
71.07	249.53	2.00	0.00	0.00	0.00	71.16	222.43	2.00	0.00	0.00	0.00
71.21	224.07	2.00	0.00	0.00	0.00	71.29	231.33	2.00	0.00	0.00	0.00
71.34	229.29	2.00	0.00	0.00	0.00	71.40	233.57	2.00	0.00	0.00	0.00
71.48	241.62	2.00	0.00	0.00	0.00	71.53	248.88	2.00	0.00	0.00	0.00
71.61	254.00	2.00	0.00	0.00	0.00	71.69	254.00	2.00	0.00	0.00	0.00
71.74	254.00	2.00	0.00	0.00	0.00	71.80	254.00	2.00	0.00	0.00	0.00
71.87	254.00	2.00	0.00	0.00	0.00	71.92	254.00	2.00	0.00	0.00	0.00
72.00	254.00	2.00	0.00	0.00	0.00	72.09	254.00	2.00	0.00	0.00	0.00
72.14	254.00	2.00	0.00	0.00	0.00	72.18	254.00	2.00	0.00	0.00	0.00
72.27	254.00	2.00	0.00	0.00	0.00	72.33	254.00	2.00	0.00	0.00	0.00
72.38	254.00	2.00	0.00	0.00	0.00	72.45	254.00	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
72.53	254.00	2.00	0.00	0.00	0.00	72.58	254.00	2.00	0.00	0.00	0.00
72.67	254.00	2.00	0.00	0.00	0.00	72.71	254.00	2.00	0.00	0.00	0.00
72.80	250.47	2.00	0.00	0.00	0.00	72.85	250.34	2.00	0.00	0.00	0.00
72.93	254.00	2.00	0.00	0.00	0.00	72.98	253.68	2.00	0.00	0.00	0.00
73.04	254.00	2.00	0.00	0.00	0.00	73.10	253.46	2.00	0.00	0.00	0.00
73.20	251.39	2.00	0.00	0.00	0.00	73.25	254.00	2.00	0.00	0.00	0.00
73.32	254.00	2.00	0.00	0.00	0.00	73.37	254.00	2.00	0.00	0.00	0.00
73.45	254.00	2.00	0.00	0.00	0.00	73.51	254.00	2.00	0.00	0.00	0.00
73.56	254.00	2.00	0.00	0.00	0.00	73.64	254.00	2.00	0.00	0.00	0.00
73.73	254.00	2.00	0.00	0.00	0.00	73.77	254.00	2.00	0.00	0.00	0.00
73.83	254.00	2.00	0.00	0.00	0.00	73.89	254.00	2.00	0.00	0.00	0.00
73.97	254.00	2.00	0.00	0.00	0.00	74.02	254.00	2.00	0.00	0.00	0.00
74.09	254.00	2.00	0.00	0.00	0.00	74.17	254.00	2.00	0.00	0.00	0.00
74.22	254.00	2.00	0.00	0.00	0.00	74.30	254.00	2.00	0.00	0.00	0.00
74.35	254.00	2.00	0.00	0.00	0.00	74.43	254.00	2.00	0.00	0.00	0.00
74.48	254.00	2.00	0.00	0.00	0.00	74.57	254.00	2.00	0.00	0.00	0.00
74.61	254.00	2.00	0.00	0.00	0.00	74.68	254.00	2.00	0.00	0.00	0.00
74.74	254.00	2.00	0.00	0.00	0.00	74.81	254.00	2.00	0.00	0.00	0.00
74.90	254.00	2.00	0.00	0.00	0.00	74.94	254.00	2.00	0.00	0.00	0.00
75.03	254.00	2.00	0.00	0.00	0.00	75.08	254.00	2.00	0.00	0.00	0.00
75.13	246.11	2.00	0.00	0.00	0.00	75.21	226.21	2.00	0.00	0.00	0.00
75.30	191.42	1.25	0.00	0.00	0.00	75.36	163.69	0.44	0.00	0.00	0.00
75.43	151.32	0.32	0.00	0.00	0.00	75.48	154.09	0.34	0.00	0.00	0.00
75.56	157.96	0.38	0.00	0.00	0.00	75.61	161.10	0.41	0.00	0.00	0.00
75.68	162.27	0.43	0.00	0.00	0.00	75.74	182.09	0.83	0.00	0.00	0.00
75.80	203.02	2.00	0.00	0.00	0.00	75.88	196.27	1.57	0.00	0.00	0.00
75.92	198.41	1.75	0.00	0.00	0.00	76.00	177.41	0.70	0.00	0.00	0.00
76.05	161.05	0.41	0.00	0.00	0.00	76.14	141.07	0.26	0.00	0.00	0.00
76.22	132.08	0.22	0.00	0.00	0.00	76.32	146.51	0.29	0.00	0.00	0.00
76.36	151.14	2.00	0.00	0.00	0.00	76.41	152.21	2.00	0.00	0.00	0.00
76.49	170.10	2.00	0.00	0.00	0.00	76.51	188.14	2.00	0.00	0.00	0.00
76.59	160.74	2.00	0.00	0.00	0.00	76.67	134.33	2.00	0.00	0.00	0.00
76.72	128.47	2.00	0.00	0.00	0.00	76.80	44.41	2.00	0.00	0.00	0.00
76.88	34.80	2.00	0.00	0.00	0.00	76.91	33.37	2.00	0.00	0.00	0.00
77.04	36.08	1.02	0.00	0.00	0.00	77.08	37.58	1.13	0.00	0.00	0.00
77.13	45.30	1.22	0.00	0.00	0.00	77.17	46.72	1.31	0.00	0.00	0.00
77.28	48.55	1.33	0.00	0.00	0.00	77.34	47.56	1.30	0.00	0.00	0.00
77.39	43.46	1.20	0.00	0.00	0.00	77.45	36.72	1.11	0.00	0.00	0.00
77.51	36.83	1.00	0.00	0.00	0.00	77.60	30.80	0.90	0.00	0.00	0.00
77.65	25.94	0.80	0.00	0.00	0.00	77.69	26.15	2.00	0.00	0.00	0.00
77.77	50.07	2.00	0.00	0.00	0.00	77.84	149.55	2.00	0.00	0.00	0.00
77.91	199.57	2.00	0.00	0.00	0.00	77.96	210.28	2.00	0.00	0.00	0.00
78.05	213.39	2.00	0.00	0.00	0.00	78.09	197.33	2.00	0.00	0.00	0.00
78.17	190.98	1.22	0.00	0.00	0.00	78.22	183.12	0.87	0.00	0.00	0.00
78.31	189.49	1.14	0.00	0.00	0.00	78.35	188.09	1.08	0.00	0.00	0.00
78.44	237.24	2.00	0.00	0.00	0.00	78.49	254.00	2.00	0.00	0.00	0.00
78.57	254.00	2.00	0.00	0.00	0.00	78.61	254.00	2.00	0.00	0.00	0.00
78.71	254.00	2.00	0.00	0.00	0.00	78.75	254.00	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
78.82	254.00	2.00	0.00	0.00	0.00	78.89	254.00	2.00	0.00	0.00	0.00
78.98	254.00	2.00	0.00	0.00	0.00	79.01	254.00	2.00	0.00	0.00	0.00
79.10	254.00	2.00	0.00	0.00	0.00	79.14	254.00	2.00	0.00	0.00	0.00
79.21	254.00	2.00	0.00	0.00	0.00	79.28	254.00	2.00	0.00	0.00	0.00
79.36	232.51	2.00	0.00	0.00	0.00	79.41	223.98	2.00	0.00	0.00	0.00
79.50	181.66	2.00	0.00	0.00	0.00	79.55	173.52	2.00	0.00	0.00	0.00
79.61	185.67	2.00	0.00	0.00	0.00	79.68	156.36	2.00	0.00	0.00	0.00
79.75	123.65	2.00	0.00	0.00	0.00	79.80	47.44	2.00	0.00	0.00	0.00
79.87	36.37	2.00	0.00	0.00	0.00	79.94	29.79	2.00	0.00	0.00	0.00
80.00	26.61	0.75	0.00	0.00	0.00	80.08	21.40	0.64	0.00	0.00	0.00
80.13	17.77	0.53	0.00	0.00	0.00	80.21	15.66	0.46	0.00	0.00	0.00
80.26	14.34	0.42	0.00	0.00	0.00	80.32	13.94	0.40	0.00	0.00	0.00
80.39	13.71	0.39	0.00	0.00	0.00	80.47	13.75	0.41	0.00	0.00	0.00
80.52	15.37	0.40	0.00	0.00	0.00	80.59	13.16	0.39	0.00	0.00	0.00
80.65	13.24	0.37	0.00	0.00	0.00	80.71	13.47	0.38	0.00	0.00	0.00
80.78	13.86	0.40	0.00	0.00	0.00	80.87	14.80	0.42	0.00	0.00	0.00
80.92	15.29	0.44	0.00	0.00	0.00	81.01	16.06	0.47	0.00	0.00	0.00
81.05	17.93	0.50	0.00	0.00	0.00	81.14	17.60	0.52	0.00	0.00	0.00
81.19	18.06	0.52	0.00	0.00	0.00	81.29	18.52	0.53	0.00	0.00	0.00
81.34	18.56	0.52	0.00	0.00	0.00	81.37	16.90	0.50	0.00	0.00	0.00
81.47	16.11	0.48	0.00	0.00	0.00	81.53	17.29	0.60	0.00	0.00	0.00
81.65	29.17	2.00	0.00	0.00	0.00	81.72	38.27	2.00	0.00	0.00	0.00
81.76	115.20	2.00	0.00	0.00	0.00	81.81	127.79	2.00	0.00	0.00	0.00
81.88	138.37	2.00	0.00	0.00	0.00	81.93	146.50	2.00	0.00	0.00	0.00
81.98	151.22	2.00	0.00	0.00	0.00	82.04	155.25	2.00	0.00	0.00	0.00
82.10	153.00	2.00	0.00	0.00	0.00	82.17	152.19	0.33	0.00	0.00	0.00
82.23	151.95	2.00	0.00	0.00	0.00	82.30	150.21	2.00	0.00	0.00	0.00
82.38	147.23	2.00	0.00	0.00	0.00	82.42	146.31	2.00	0.00	0.00	0.00
82.51	138.25	2.00	0.00	0.00	0.00	82.56	133.09	2.00	0.00	0.00	0.00
82.62	51.97	2.00	0.00	0.00	0.00	82.70	42.04	2.00	0.00	0.00	0.00
82.76	36.40	2.00	0.00	0.00	0.00	82.83	35.40	2.00	0.00	0.00	0.00
82.92	34.88	1.00	0.00	0.00	0.00	82.96	35.52	1.04	0.00	0.00	0.00
83.01	40.32	1.13	0.00	0.00	0.00	83.10	44.63	1.20	0.00	0.00	0.00
83.14	44.82	1.24	0.00	0.00	0.00	83.21	44.36	1.23	0.00	0.00	0.00
83.28	44.08	1.20	0.00	0.00	0.00	83.36	40.74	1.16	0.00	0.00	0.00
83.40	39.81	1.07	0.00	0.00	0.00	83.49	33.83	0.99	0.00	0.00	0.00
83.53	31.60	0.89	0.00	0.00	0.00	83.61	28.12	0.79	0.00	0.00	0.00
83.67	22.64	0.66	0.00	0.00	0.00	83.74	18.43	0.55	0.00	0.00	0.00
83.80	16.47	0.46	0.00	0.00	0.00	83.89	13.56	0.40	0.00	0.00	0.00
83.94	12.94	0.36	0.00	0.00	0.00	83.99	12.59	0.37	0.00	0.00	0.00
84.07	14.52	0.42	0.00	0.00	0.00	84.13	17.71	0.51	0.00	0.00	0.00
84.20	20.89	0.60	0.00	0.00	0.00	84.29	23.95	0.67	0.00	0.00	0.00
84.33	25.10	0.72	0.00	0.00	0.00	84.40	26.06	0.74	0.00	0.00	0.00
84.47	26.06	0.71	0.00	0.00	0.00	84.56	21.55	0.64	0.00	0.00	0.00
84.62	19.32	0.58	0.00	0.00	0.00	84.68	19.54	0.58	0.00	0.00	0.00
84.73	21.02	0.62	0.00	0.00	0.00	84.80	23.75	0.70	0.00	0.00	0.00
84.87	27.86	0.82	0.00	0.00	0.00	84.92	34.10	0.99	0.00	0.00	0.00
85.01	42.83	1.11	0.00	0.00	0.00	85.06	42.23	1.12	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
85.11	35.45	1.00	0.00	0.00	0.00	85.19	28.51	0.83	0.00	0.00	0.00
85.27	22.75	0.68	0.00	0.00	0.00	85.32	19.43	0.54	0.00	0.00	0.00
85.40	14.78	0.45	0.00	0.00	0.00	85.44	13.68	0.38	0.00	0.00	0.00
85.51	12.03	0.34	0.00	0.00	0.00	85.58	11.42	0.31	0.00	0.00	0.00
85.66	10.95	0.30	0.00	0.00	0.00	85.72	10.56	0.29	0.00	0.00	0.00
85.76	10.31	0.28	0.00	0.00	0.00	85.85	10.01	0.27	0.00	0.00	0.00
85.94	9.83	0.26	0.00	0.00	0.00	85.98	9.79	0.26	0.00	0.00	0.00
86.03	9.79	0.26	0.00	0.00	0.00	86.10	9.78	0.26	0.00	0.00	0.00
86.16	9.78	0.26	0.00	0.00	0.00	86.25	9.78	0.26	0.00	0.00	0.00
86.29	9.82	0.26	0.00	0.00	0.00	86.38	9.56	0.25	0.00	0.00	0.00
86.47	9.56	0.25	0.00	0.00	0.00	86.51	9.43	0.25	0.00	0.00	0.00
86.57	9.39	0.25	0.00	0.00	0.00	86.64	9.30	0.24	0.00	0.00	0.00
86.69	9.38	0.24	0.00	0.00	0.00	86.76	9.21	0.24	0.00	0.00	0.00
86.82	9.38	0.25	0.00	0.00	0.00	86.91	9.67	0.25	0.00	0.00	0.00
86.94	9.75	0.26	0.00	0.00	0.00	87.02	9.96	0.26	0.00	0.00	0.00
87.11	10.03	0.26	0.00	0.00	0.00	87.15	9.95	0.26	0.00	0.00	0.00
87.22	9.65	0.25	0.00	0.00	0.00	87.31	9.44	0.25	0.00	0.00	0.00
87.35	9.44	0.25	0.00	0.00	0.00	87.44	9.39	0.25	0.00	0.00	0.00
87.48	9.35	0.24	0.00	0.00	0.00	87.57	9.35	0.24	0.00	0.00	0.00
87.62	9.34	0.24	0.00	0.00	0.00	87.68	9.34	0.24	0.00	0.00	0.00
87.73	9.30	0.24	0.00	0.00	0.00	87.80	9.23	0.24	0.00	0.00	0.00
87.86	9.17	0.24	0.00	0.00	0.00	87.93	9.17	0.24	0.00	0.00	0.00
88.00	9.16	0.24	0.00	0.00	0.00	88.09	9.16	0.24	0.00	0.00	0.00
88.12	9.24	0.24	0.00	0.00	0.00	88.21	9.65	0.25	0.00	0.00	0.00
88.26	10.03	0.27	0.00	0.00	0.00	88.36	10.95	0.29	0.00	0.00	0.00
88.42	11.66	0.31	0.00	0.00	0.00	88.48	12.04	0.33	0.00	0.00	0.00
88.54	12.21	0.34	0.00	0.00	0.00	88.58	12.42	0.35	0.00	0.00	0.00
88.66	13.19	0.37	0.00	0.00	0.00	88.72	14.23	0.39	0.00	0.00	0.00
88.82	14.31	0.40	0.00	0.00	0.00	88.89	14.09	0.39	0.00	0.00	0.00
88.93	13.87	0.39	0.00	0.00	0.00	89.04	13.90	0.40	0.00	0.00	0.00
89.11	15.12	0.44	0.00	0.00	0.00	89.16	17.59	0.51	0.00	0.00	0.00
89.20	21.36	0.61	0.00	0.00	0.00	89.25	25.32	0.76	0.00	0.00	0.00
89.35	33.75	0.89	0.00	0.00	0.00	89.41	35.62	0.98	0.00	0.00	0.00
89.46	35.63	0.98	0.00	0.00	0.00	89.51	33.94	0.97	0.00	0.00	0.00
89.60	34.10	0.96	0.00	0.00	0.00	89.65	34.10	2.00	0.00	0.00	0.00
89.70	34.20	2.00	0.00	0.00	0.00	89.78	46.56	2.00	0.00	0.00	0.00
89.85	55.11	2.00	0.00	0.00	0.00	89.90	134.58	2.00	0.00	0.00	0.00
89.99	152.33	2.00	0.00	0.00	0.00	90.04	155.90	2.00	0.00	0.00	0.00
90.13	155.96	0.37	0.00	0.00	0.00	90.18	153.51	0.35	0.00	0.00	0.00
90.24	152.08	0.34	0.00	0.00	0.00	90.29	150.69	0.33	0.00	0.00	0.00
90.38	150.10	0.32	0.00	0.00	0.00	90.44	151.70	0.33	0.00	0.00	0.00
90.53	159.66	0.41	0.00	0.00	0.00	90.57	161.04	0.42	0.00	0.00	0.00
90.62	157.02	0.38	0.00	0.00	0.00	90.69	157.21	2.00	0.00	0.00	0.00
90.78	150.04	2.00	0.00	0.00	0.00	90.83	148.50	2.00	0.00	0.00	0.00
90.90	141.49	2.00	0.00	0.00	0.00	90.96	134.90	2.00	0.00	0.00	0.00
91.03	144.51	2.00	0.00	0.00	0.00	91.09	133.35	0.24	0.00	0.00	0.00
91.18	144.68	0.29	0.00	0.00	0.00	91.25	157.18	0.38	0.00	0.00	0.00
91.31	163.91	0.46	0.00	0.00	0.00	91.36	163.96	0.46	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
91.44	162.27	0.44	0.00	0.00	0.00	91.49	161.86	0.43	0.00	0.00	0.00
91.55	163.00	0.45	0.00	0.00	0.00	91.62	168.28	0.52	0.00	0.00	0.00
91.67	180.36	0.79	0.00	0.00	0.00	91.76	215.90	2.00	0.00	0.00	0.00
91.84	241.27	2.00	0.00	0.00	0.00	91.89	254.00	2.00	0.00	0.00	0.00
91.95	254.00	2.00	0.00	0.00	0.00	92.03	254.00	2.00	0.00	0.00	0.00
92.08	254.00	2.00	0.00	0.00	0.00	92.15	254.00	2.00	0.00	0.00	0.00
92.20	254.00	2.00	0.00	0.00	0.00	92.28	254.00	2.00	0.00	0.00	0.00
92.33	254.00	2.00	0.00	0.00	0.00	92.40	254.00	2.00	0.00	0.00	0.00
92.46	254.00	2.00	0.00	0.00	0.00	92.55	254.00	2.00	0.00	0.00	0.00
92.59	254.00	2.00	0.00	0.00	0.00	92.66	254.00	2.00	0.00	0.00	0.00
92.72	254.00	2.00	0.00	0.00	0.00	92.78	250.63	2.00	0.00	0.00	0.00
92.86	247.32	2.00	0.00	0.00	0.00	92.93	243.13	2.00	0.00	0.00	0.00
92.99	244.34	2.00	0.00	0.00	0.00	93.08	251.52	2.00	0.00	0.00	0.00
93.12	254.00	2.00	0.00	0.00	0.00	93.19	254.00	2.00	0.00	0.00	0.00
93.27	249.88	2.00	0.00	0.00	0.00	93.32	254.00	2.00	0.00	0.00	0.00
93.38	254.00	2.00	0.00	0.00	0.00	93.45	254.00	2.00	0.00	0.00	0.00
93.53	254.00	2.00	0.00	0.00	0.00	93.58	254.00	2.00	0.00	0.00	0.00
93.67	254.00	2.00	0.00	0.00	0.00	93.71	254.00	2.00	0.00	0.00	0.00
93.79	254.00	2.00	0.00	0.00	0.00	93.84	254.00	2.00	0.00	0.00	0.00
93.93	254.00	2.00	0.00	0.00	0.00	93.97	254.00	2.00	0.00	0.00	0.00
94.04	254.00	2.00	0.00	0.00	0.00	94.10	254.00	2.00	0.00	0.00	0.00
94.17	254.00	2.00	0.00	0.00	0.00	94.24	254.00	2.00	0.00	0.00	0.00
94.31	243.11	2.00	0.00	0.00	0.00	94.38	228.30	2.00	0.00	0.00	0.00
94.43	218.48	2.00	0.00	0.00	0.00	94.51	202.51	2.00	0.00	0.00	0.00
94.56	201.54	2.00	0.00	0.00	0.00	94.65	204.75	2.00	0.00	0.00	0.00
94.69	206.65	2.00	0.00	0.00	0.00	94.77	203.18	2.00	0.00	0.00	0.00
94.82	207.81	2.00	0.00	0.00	0.00	94.90	204.60	2.00	0.00	0.00	0.00
94.97	206.70	2.00	0.00	0.00	0.00	95.03	203.70	2.00	0.00	0.00	0.00
95.10	221.94	2.00	0.00	0.00	0.00	95.15	236.65	2.00	0.00	0.00	0.00
95.22	245.77	2.00	0.00	0.00	0.00	95.31	254.00	2.00	0.00	0.00	0.00
95.35	254.00	2.00	0.00	0.00	0.00	95.41	254.00	2.00	0.00	0.00	0.00
95.47	254.00	2.00	0.00	0.00	0.00	95.54	254.00	2.00	0.00	0.00	0.00
95.62	254.00	2.00	0.00	0.00	0.00	95.70	254.00	2.00	0.00	0.00	0.00
95.75	254.00	2.00	0.00	0.00	0.00	95.84	254.00	2.00	0.00	0.00	0.00
95.88	254.00	2.00	0.00	0.00	0.00	95.93	254.00	2.00	0.00	0.00	0.00
96.01	254.00	2.00	0.00	0.00	0.00	96.08	254.00	2.00	0.00	0.00	0.00
96.14	254.00	2.00	0.00	0.00	0.00	96.20	254.00	2.00	0.00	0.00	0.00
96.28	254.00	2.00	0.00	0.00	0.00	96.33	249.23	2.00	0.00	0.00	0.00
96.40	243.95	2.00	0.00	0.00	0.00	96.46	240.17	2.00	0.00	0.00	0.00
96.54	241.64	2.00	0.00	0.00	0.00	96.62	243.10	2.00	0.00	0.00	0.00
96.67	241.35	2.00	0.00	0.00	0.00	96.72	235.09	2.00	0.00	0.00	0.00
96.79	228.73	2.00	0.00	0.00	0.00	96.89	221.79	2.00	0.00	0.00	0.00
96.94	218.41	2.00	0.00	0.00	0.00	96.99	215.37	2.00	0.00	0.00	0.00
97.08	210.18	2.00	0.00	0.00	0.00	97.12	208.61	2.00	0.00	0.00	0.00
97.18	208.42	2.00	0.00	0.00	0.00	97.25	212.06	2.00	0.00	0.00	0.00
97.34	220.87	2.00	0.00	0.00	0.00	97.38	225.04	2.00	0.00	0.00	0.00
97.47	230.07	2.00	0.00	0.00	0.00	97.52	233.39	2.00	0.00	0.00	0.00
97.58	240.51	2.00	0.00	0.00	0.00	97.64	240.12	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
97.74	243.76	2.00	0.00	0.00	0.00	97.78	242.70	2.00	0.00	0.00	0.00
97.87	244.07	2.00	0.00	0.00	0.00	97.92	243.81	2.00	0.00	0.00	0.00
97.97	242.77	2.00	0.00	0.00	0.00	98.04	241.19	2.00	0.00	0.00	0.00
98.13	241.83	2.00	0.00	0.00	0.00	98.18	246.72	2.00	0.00	0.00	0.00
98.26	254.00	2.00	0.00	0.00	0.00	98.31	238.98	2.00	0.00	0.00	0.00
98.36	254.00	2.00	0.00	0.00	0.00	98.43	253.01	2.00	0.00	0.00	0.00
98.52	254.00	2.00	0.00	0.00	0.00	98.57	254.00	2.00	0.00	0.00	0.00
98.64	253.88	2.00	0.00	0.00	0.00	98.69	253.88	2.00	0.00	0.00	0.00
98.76	252.39	2.00	0.00	0.00	0.00	98.83	254.00	2.00	0.00	0.00	0.00
98.91	253.89	2.00	0.00	0.00	0.00	98.96	254.00	2.00	0.00	0.00	0.00
99.02	254.00	2.00	0.00	0.00	0.00	99.08	254.00	2.00	0.00	0.00	0.00
99.17	254.00	2.00	0.00	0.00	0.00	99.22	253.63	2.00	0.00	0.00	0.00
99.30	247.52	2.00	0.00	0.00	0.00	99.37	240.96	2.00	0.00	0.00	0.00
99.41	228.84	2.00	0.00	0.00	0.00	99.50	229.87	2.00	0.00	0.00	0.00
99.55	245.21	2.00	0.00	0.00	0.00	99.62	254.00	2.00	0.00	0.00	0.00
99.68	254.00	2.00	0.00	0.00	0.00	99.77	254.00	2.00	0.00	0.00	0.00
99.81	254.00	2.00	0.00	0.00	0.00	99.90	254.00	2.00	0.00	0.00	0.00
99.94	284.58	2.00	0.00	0.00	0.00	100.03	278.83	2.00	0.00	0.00	0.00
100.08	272.44	2.00	0.00	0.00	0.00	100.15	268.06	2.00	0.00	0.00	0.00
100.21	262.49	2.00	0.00	0.00	0.00						

Total estimated settlement: 1.28

Abbreviations

$Q_{tn,cs}$: Equivalent clean sand normalized cone resistance
FS: Factor of safety against liquefaction
e_v (%): Post-liquefaction volumentric strain
DF: e_v depth weighting factor
Settlement: Calculated settlement

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Monrovia, CA 91016
http://www.converseconsultants.com

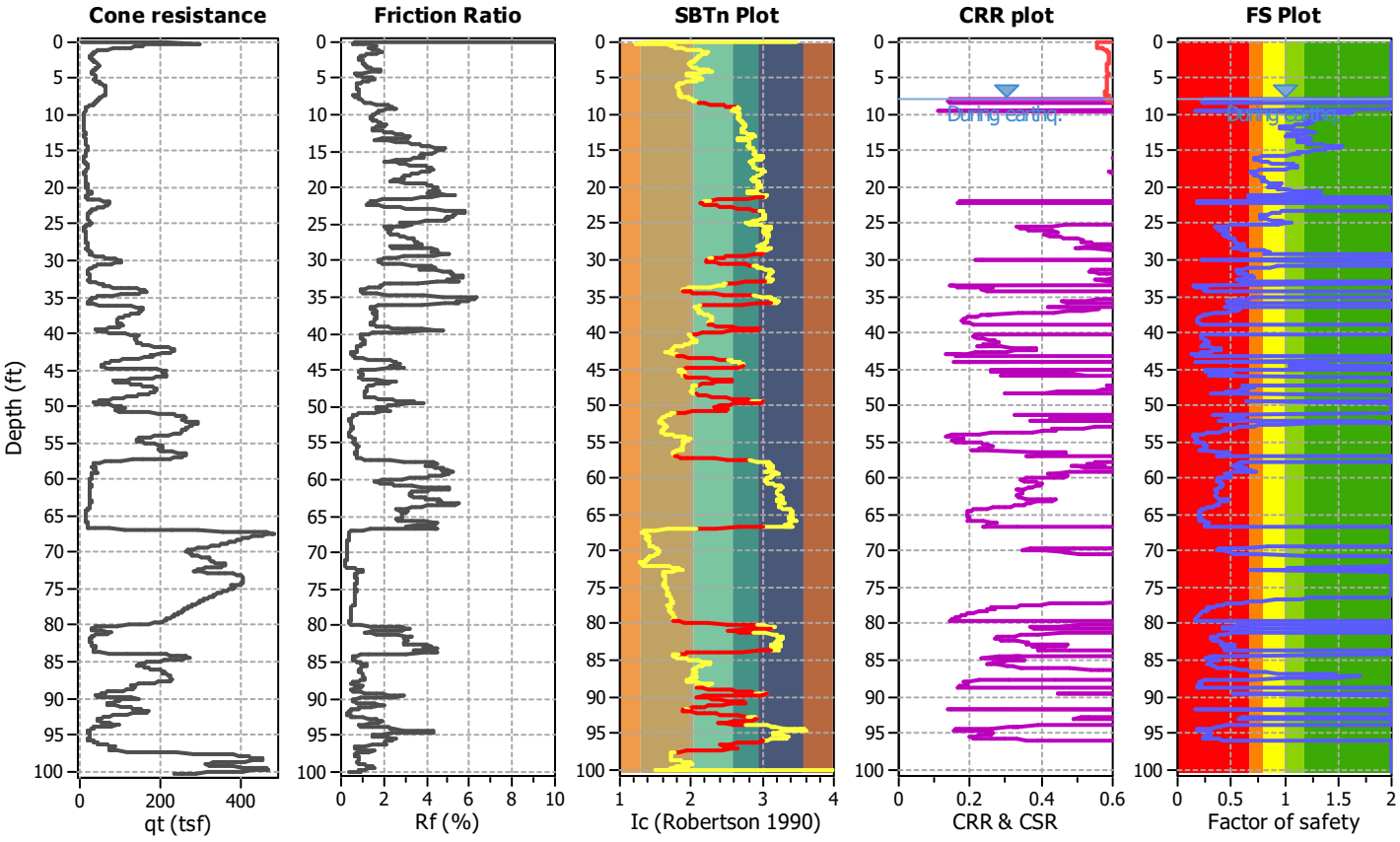
LIQUEFACTION ANALYSIS REPORT

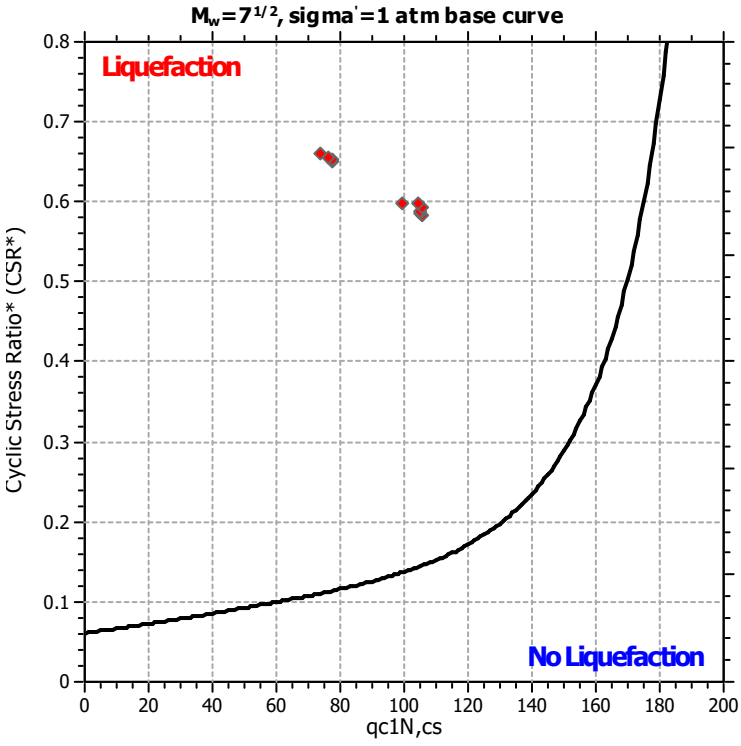
Project title : **Location :**

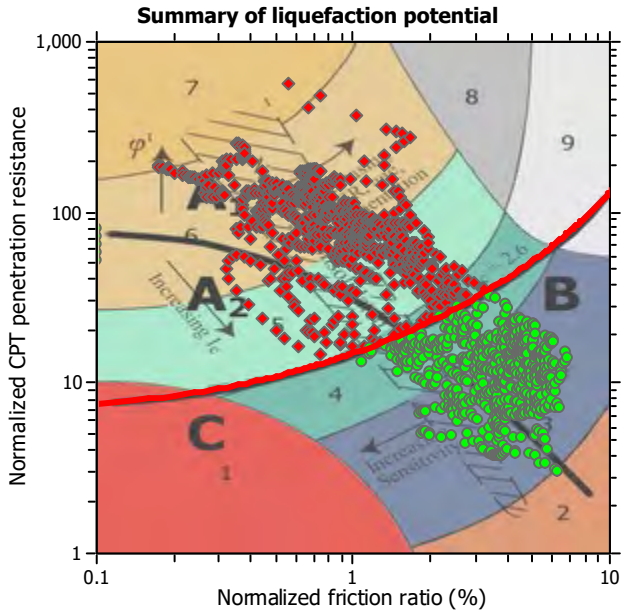
CPT file : CPT-2

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	45.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	8.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	7.30	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.78	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

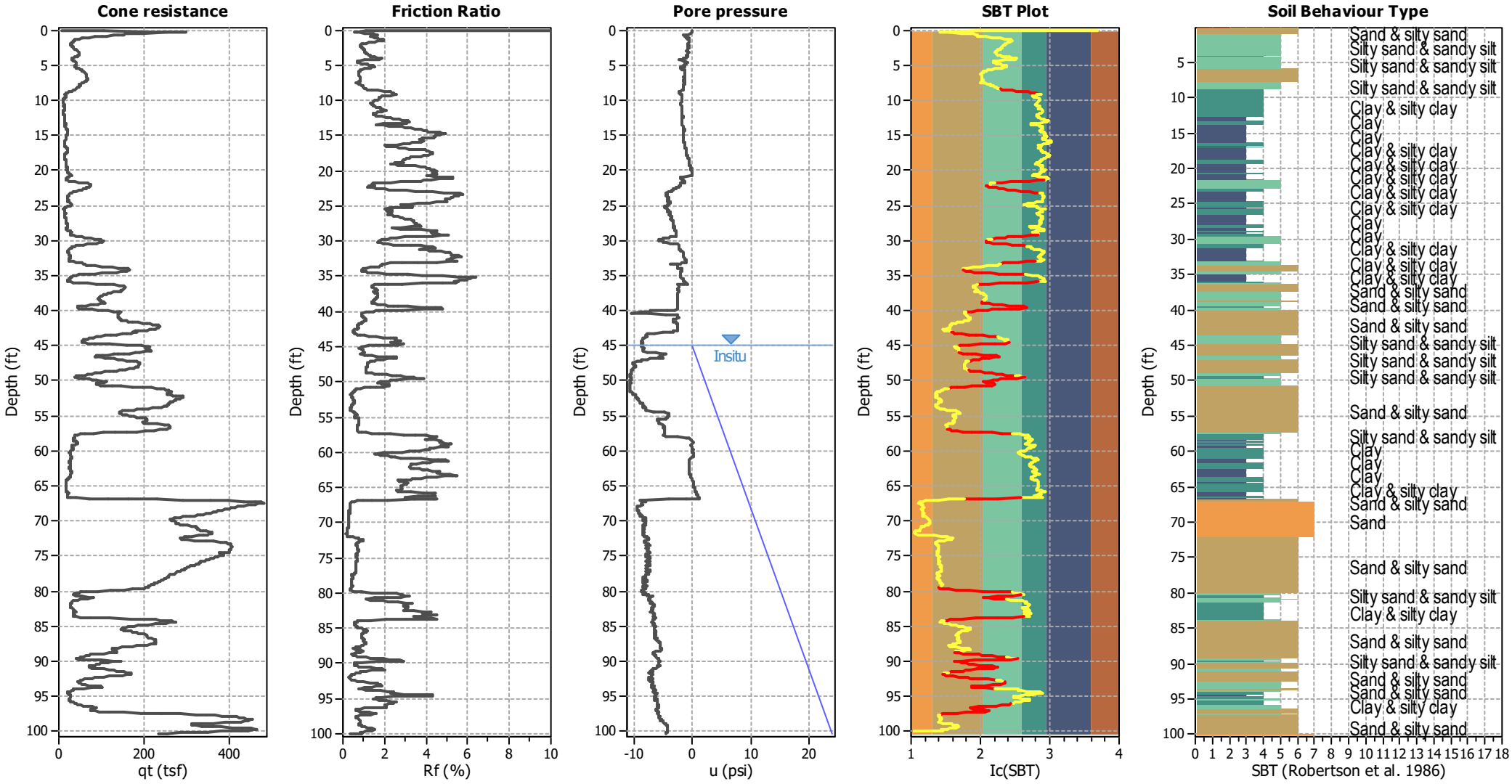






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



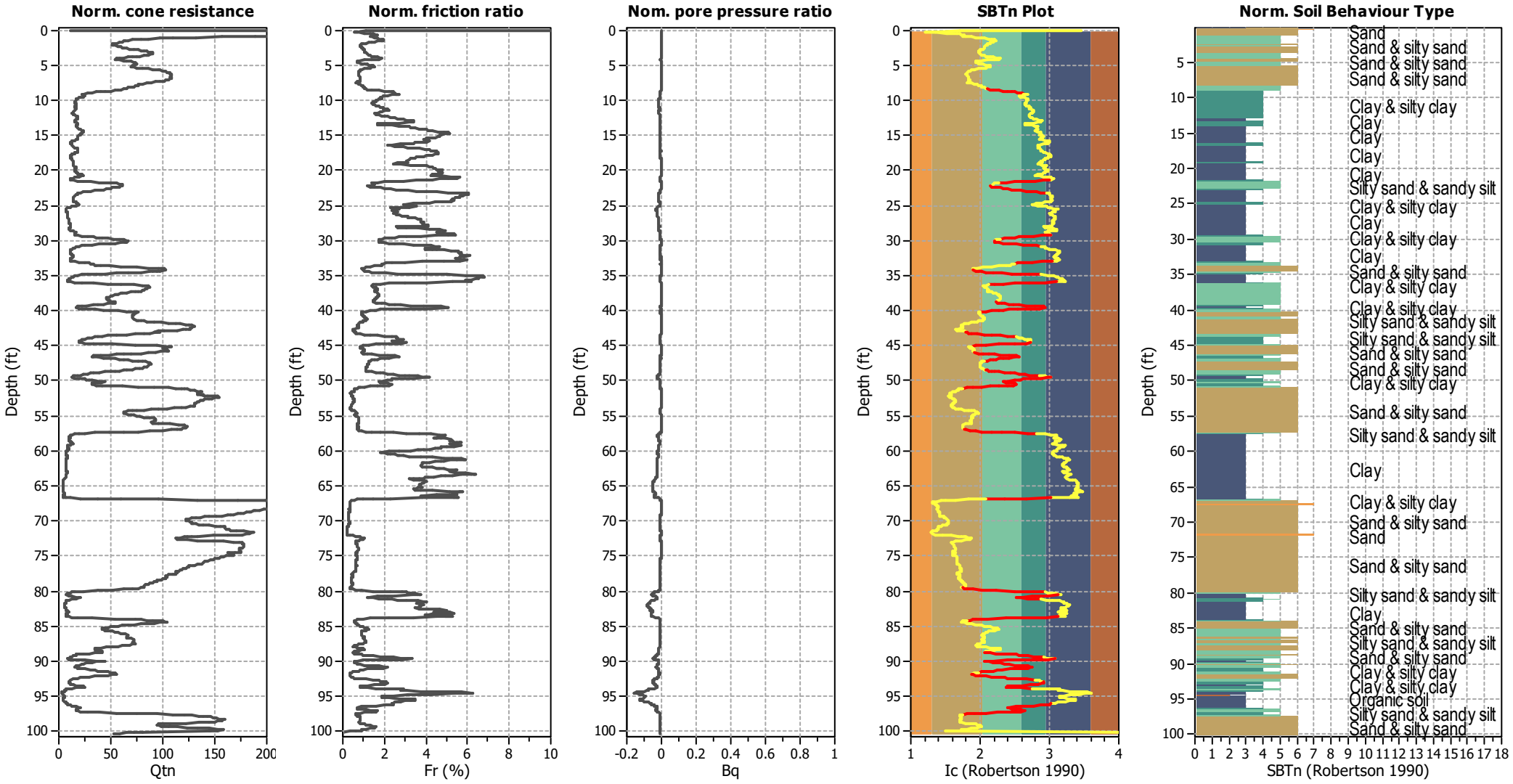
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



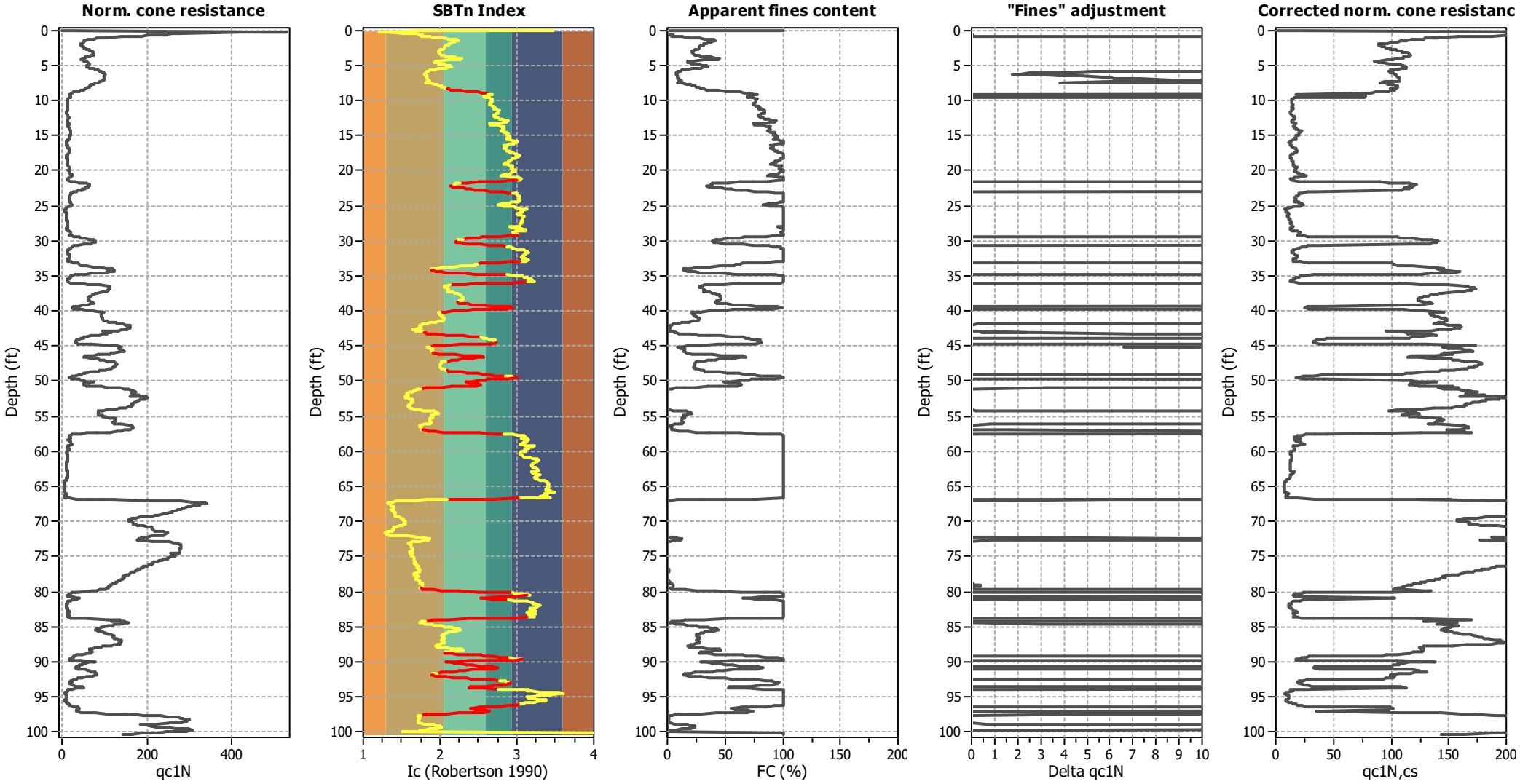
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

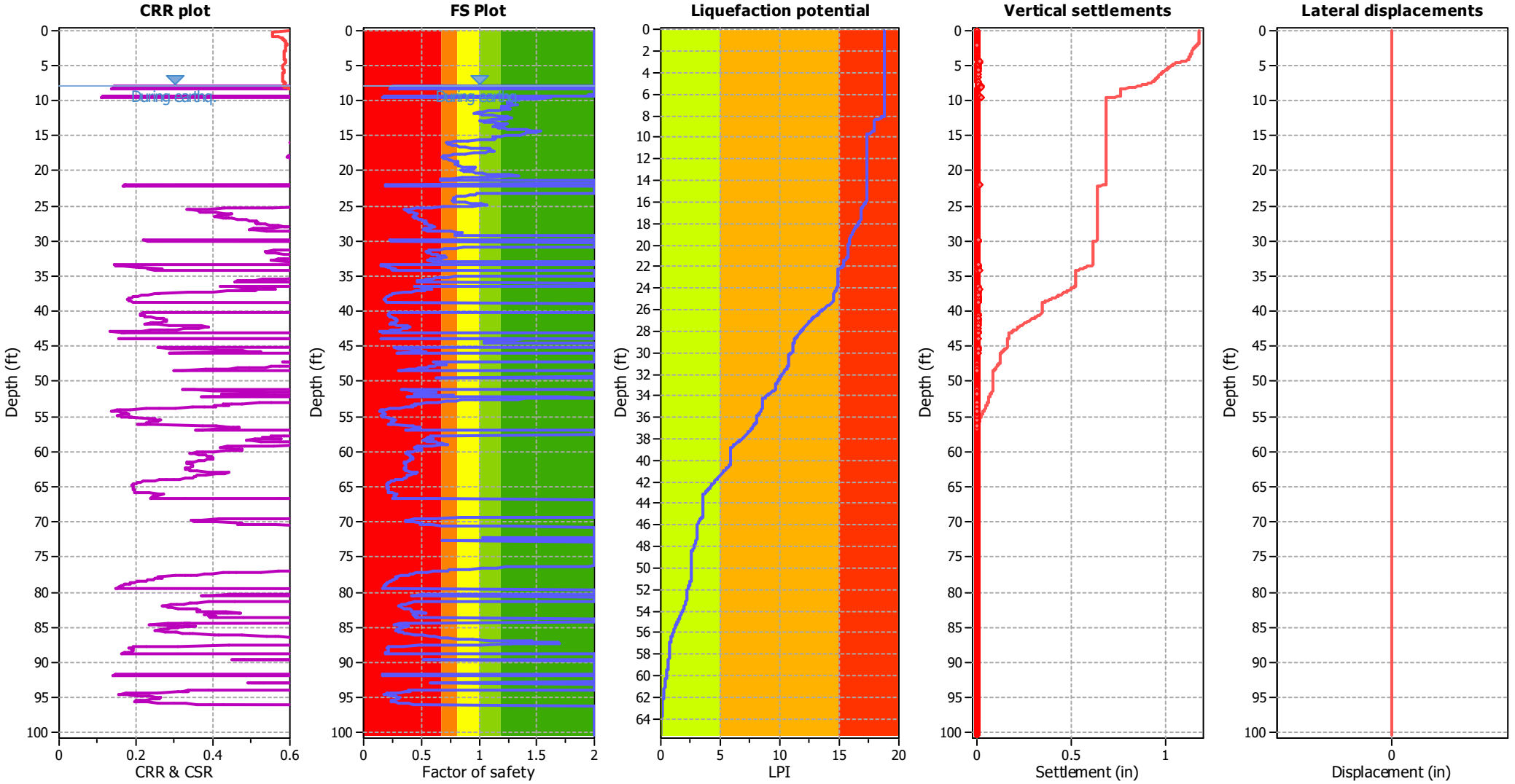
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

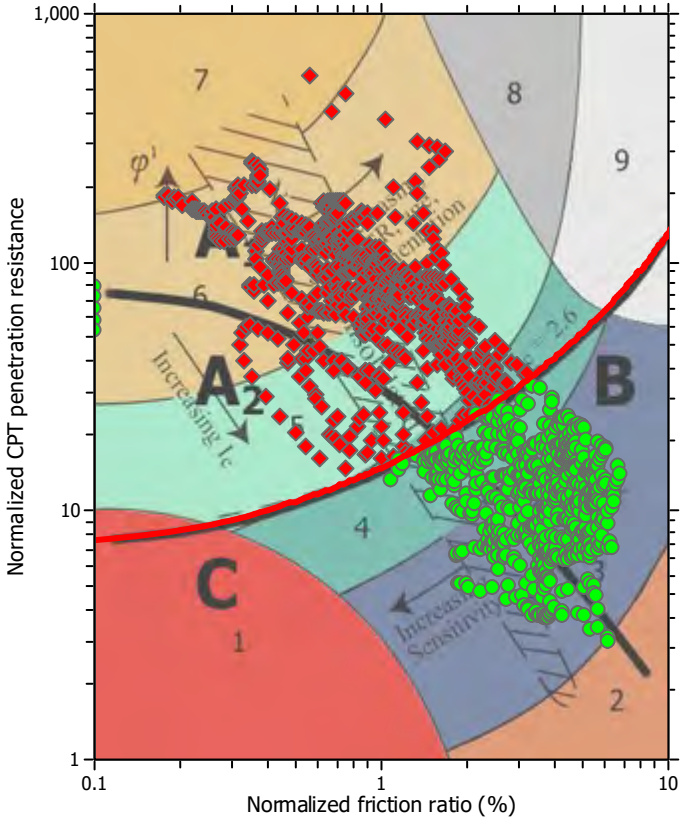
F.S. color scheme

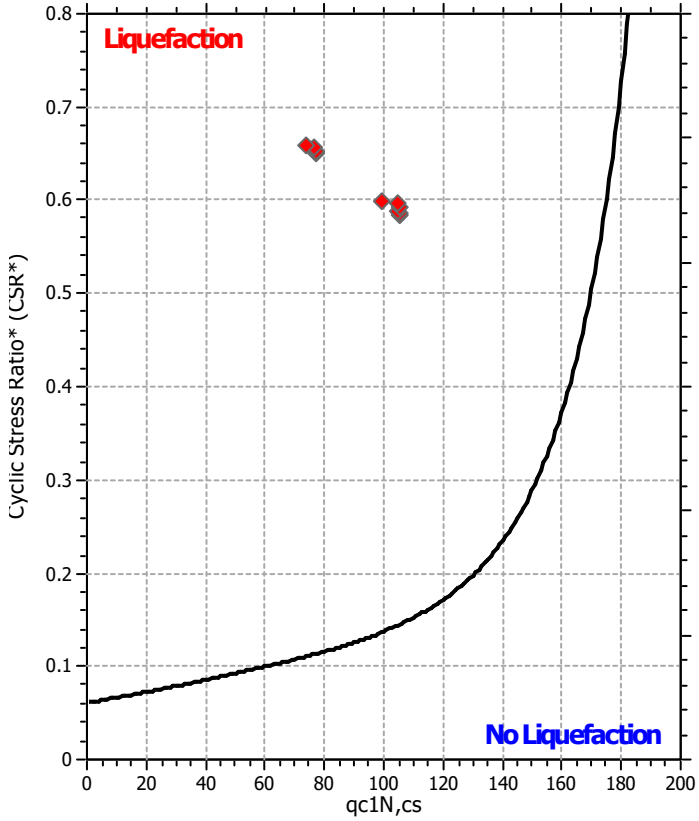
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

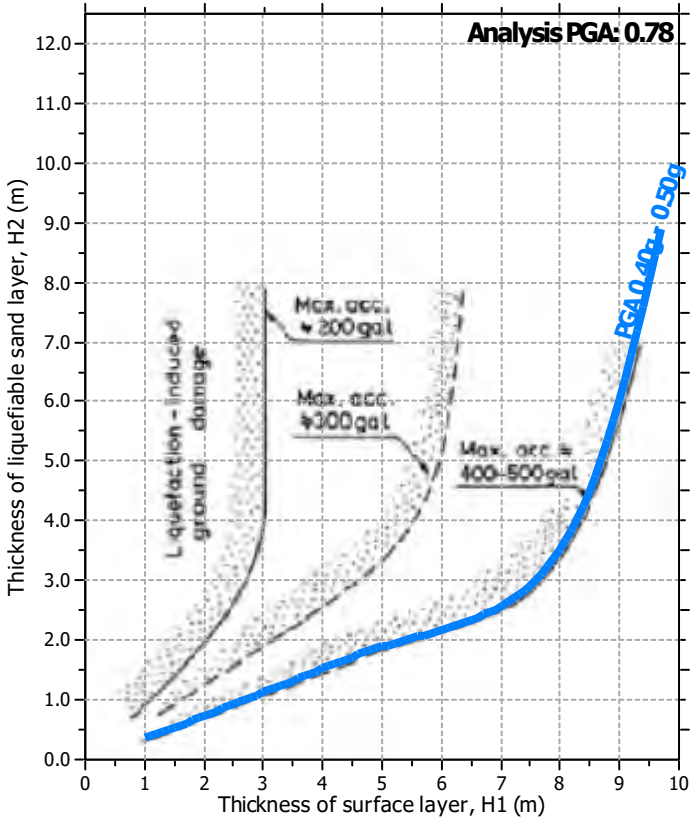
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



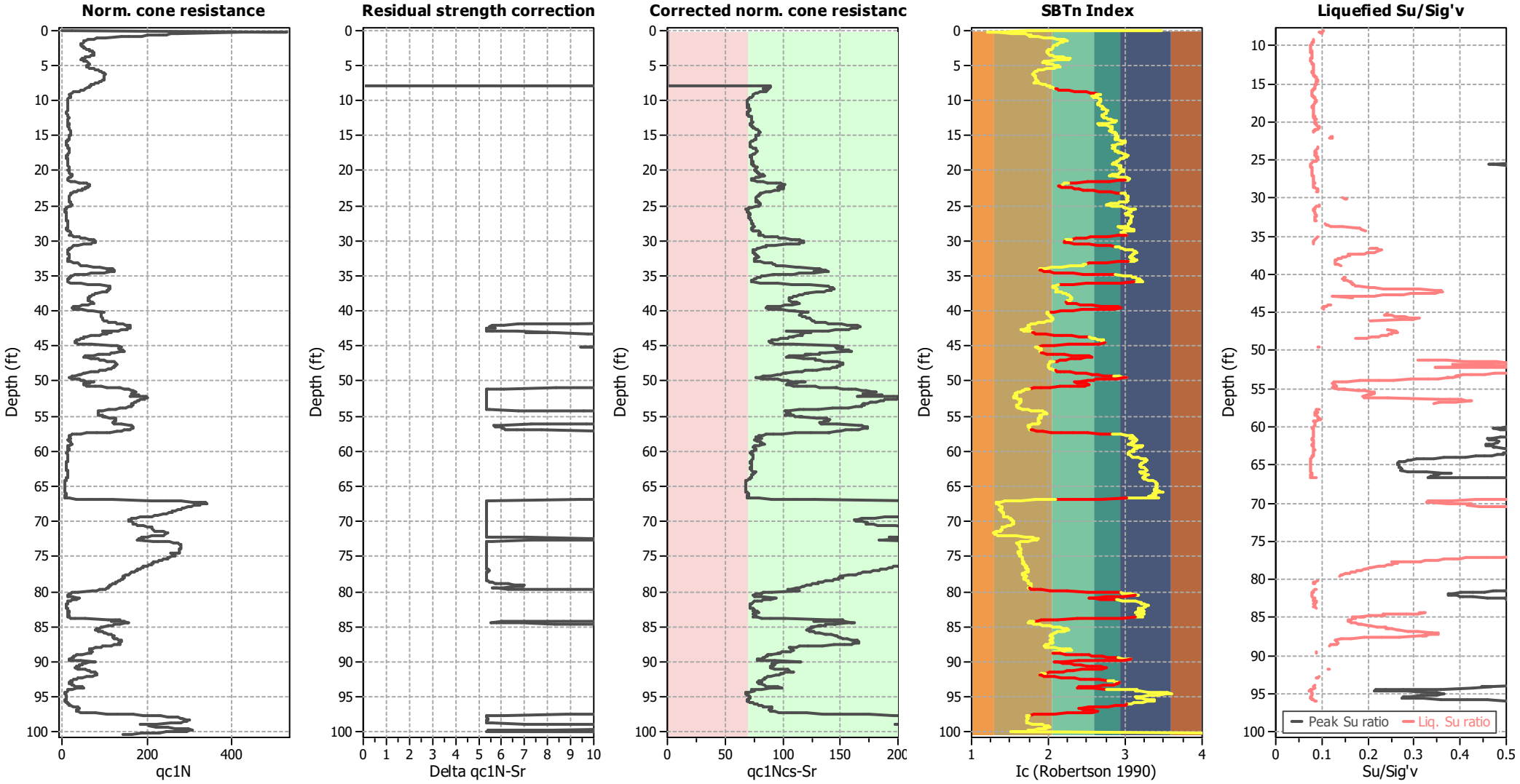




Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.30	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.78	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	45.00 ft	Fill height:	N/A	Limit depth:	N/A

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.09	2.00	0.00	9.99	0.06	0.00	0.15	2.00	0.00	9.98	0.06	0.00
0.20	2.00	0.00	9.97	0.05	0.00	0.27	2.00	0.00	9.96	0.08	0.00
0.33	2.00	0.00	9.95	0.06	0.00	0.42	2.00	0.00	9.94	0.09	0.00
0.46	2.00	0.00	9.93	0.04	0.00	0.53	2.00	0.00	9.92	0.07	0.00
0.64	2.00	0.00	9.90	0.11	0.00	0.68	2.00	0.00	9.90	0.04	0.00
0.73	2.00	0.00	9.89	0.05	0.00	0.81	2.00	0.00	9.88	0.08	0.00
0.86	2.00	0.00	9.87	0.05	0.00	0.95	2.00	0.00	9.86	0.09	0.00
0.99	2.00	0.00	9.85	0.04	0.00	1.08	2.00	0.00	9.84	0.09	0.00
1.12	2.00	0.00	9.83	0.04	0.00	1.21	2.00	0.00	9.82	0.09	0.00
1.25	2.00	0.00	9.81	0.04	0.00	1.34	2.00	0.00	9.80	0.09	0.00
1.39	2.00	0.00	9.79	0.05	0.00	1.47	2.00	0.00	9.78	0.08	0.00
1.53	2.00	0.00	9.77	0.06	0.00	1.60	2.00	0.00	9.76	0.07	0.00
1.65	2.00	0.00	9.75	0.05	0.00	1.74	2.00	0.00	9.74	0.09	0.00
1.78	2.00	0.00	9.73	0.04	0.00	1.87	2.00	0.00	9.72	0.09	0.00
1.93	2.00	0.00	9.71	0.06	0.00	1.99	2.00	0.00	9.70	0.06	0.00
2.04	2.00	0.00	9.69	0.05	0.00	2.13	2.00	0.00	9.68	0.08	0.00
2.18	2.00	0.00	9.67	0.05	0.00	2.24	2.00	0.00	9.66	0.07	0.00
2.31	2.00	0.00	9.65	0.07	0.00	2.40	2.00	0.00	9.63	0.09	0.00
2.44	2.00	0.00	9.63	0.04	0.00	2.52	2.00	0.00	9.62	0.08	0.00
2.57	2.00	0.00	9.61	0.05	0.00	2.63	2.00	0.00	9.60	0.06	0.00
2.70	2.00	0.00	9.59	0.07	0.00	2.79	2.00	0.00	9.57	0.10	0.00
2.87	2.00	0.00	9.56	0.07	0.00	2.92	2.00	0.00	9.56	0.05	0.00
2.96	2.00	0.00	9.55	0.04	0.00	3.06	2.00	0.00	9.53	0.10	0.00
3.09	2.00	0.00	9.53	0.03	0.00	3.15	2.00	0.00	9.52	0.06	0.00
3.23	2.00	0.00	9.51	0.08	0.00	3.29	2.00	0.00	9.50	0.06	0.00
3.35	2.00	0.00	9.49	0.06	0.00	3.45	2.00	0.00	9.47	0.10	0.00
3.50	2.00	0.00	9.47	0.05	0.00	3.58	2.00	0.00	9.45	0.08	0.00
3.62	2.00	0.00	9.45	0.04	0.00	3.71	2.00	0.00	9.43	0.09	0.00
3.75	2.00	0.00	9.43	0.04	0.00	3.84	2.00	0.00	9.41	0.09	0.00
3.90	2.00	0.00	9.41	0.06	0.00	3.96	2.00	0.00	9.40	0.06	0.00
4.05	2.00	0.00	9.38	0.08	0.00	4.08	2.00	0.00	9.38	0.04	0.00
4.21	2.00	0.00	9.36	0.13	0.00	4.25	2.00	0.00	9.35	0.04	0.00
4.29	2.00	0.00	9.35	0.04	0.00	4.33	2.00	0.00	9.34	0.04	0.00
4.43	2.00	0.00	9.33	0.09	0.00	4.47	2.00	0.00	9.32	0.04	0.00
4.56	2.00	0.00	9.31	0.09	0.00	4.60	2.00	0.00	9.30	0.04	0.00
4.66	2.00	0.00	9.29	0.06	0.00	4.74	2.00	0.00	9.28	0.08	0.00
4.83	2.00	0.00	9.26	0.09	0.00	4.87	2.00	0.00	9.26	0.04	0.00
4.96	2.00	0.00	9.24	0.09	0.00	5.01	2.00	0.00	9.24	0.05	0.00
5.06	2.00	0.00	9.23	0.04	0.00	5.16	2.00	0.00	9.21	0.11	0.00
5.22	2.00	0.00	9.20	0.06	0.00	5.26	2.00	0.00	9.20	0.04	0.00
5.32	2.00	0.00	9.19	0.06	0.00	5.41	2.00	0.00	9.18	0.09	0.00
5.45	2.00	0.00	9.17	0.04	0.00	5.53	2.00	0.00	9.16	0.09	0.00
5.60	2.00	0.00	9.15	0.06	0.00	5.65	2.00	0.00	9.14	0.05	0.00
5.76	2.00	0.00	9.12	0.11	0.00	5.79	2.00	0.00	9.12	0.04	0.00
5.84	2.00	0.00	9.11	0.05	0.00	5.94	2.00	0.00	9.10	0.10	0.00
6.00	2.00	0.00	9.09	0.06	0.00	6.06	2.00	0.00	9.08	0.06	0.00
6.11	2.00	0.00	9.07	0.05	0.00	6.22	2.00	0.00	9.05	0.11	0.00
6.28	2.00	0.00	9.04	0.06	0.00	6.33	2.00	0.00	9.04	0.04	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
6.38	2.00	0.00	9.03	0.06	0.00	6.45	2.00	0.00	9.02	0.07	0.00
6.50	2.00	0.00	9.01	0.05	0.00	6.61	2.00	0.00	8.99	0.11	0.00
6.68	2.00	0.00	8.98	0.07	0.00	6.72	2.00	0.00	8.98	0.04	0.00
6.77	2.00	0.00	8.97	0.05	0.00	6.83	2.00	0.00	8.96	0.06	0.00
6.90	2.00	0.00	8.95	0.07	0.00	7.00	2.00	0.00	8.93	0.10	0.00
7.07	2.00	0.00	8.92	0.08	0.00	7.12	2.00	0.00	8.91	0.05	0.00
7.16	2.00	0.00	8.91	0.04	0.00	7.23	2.00	0.00	8.90	0.07	0.00
7.29	2.00	0.00	8.89	0.06	0.00	7.41	2.00	0.00	8.87	0.11	0.00
7.47	2.00	0.00	8.86	0.06	0.00	7.52	2.00	0.00	8.85	0.05	0.00
7.57	2.00	0.00	8.85	0.06	0.00	7.65	2.00	0.00	8.83	0.07	0.00
7.69	2.00	0.00	8.83	0.04	0.00	7.76	2.00	0.00	8.82	0.08	0.00
7.81	2.00	0.00	8.81	0.05	0.00	7.90	2.00	0.00	8.80	0.09	0.00
7.94	2.00	0.00	8.79	0.05	0.00	8.03	0.25	0.75	8.78	0.09	0.17
8.07	0.25	0.75	8.77	0.04	0.08	8.15	0.24	0.76	8.76	0.07	0.15
8.25	0.24	0.76	8.74	0.11	0.21	8.29	0.23	0.77	8.74	0.04	0.08
8.36	0.24	0.76	8.73	0.07	0.13	8.43	2.00	0.00	8.72	0.07	0.00
8.47	2.00	0.00	8.71	0.04	0.00	8.53	2.00	0.00	8.70	0.06	0.00
8.63	2.00	0.00	8.69	0.09	0.00	8.72	2.00	0.00	8.67	0.09	0.00
8.78	2.00	0.00	8.66	0.07	0.00	8.82	2.00	0.00	8.66	0.04	0.00
8.87	2.00	0.00	8.65	0.04	0.00	8.94	2.00	0.00	8.64	0.07	0.00
9.00	2.00	0.00	8.63	0.06	0.00	9.10	2.00	0.00	8.61	0.11	0.00
9.16	2.00	0.00	8.60	0.05	0.00	9.21	1.95	0.00	8.60	0.05	0.00
9.26	2.00	0.00	8.59	0.05	0.00	9.35	2.00	0.00	8.57	0.09	0.00
9.41	0.17	0.83	8.57	0.05	0.12	9.46	0.17	0.83	8.56	0.05	0.12
9.53	0.17	0.83	8.55	0.07	0.14	9.60	0.17	0.83	8.54	0.08	0.16
9.66	1.63	0.00	8.53	0.06	0.00	9.75	1.49	0.00	8.51	0.09	0.00
9.79	1.39	0.00	8.51	0.05	0.00	9.89	1.35	0.00	8.49	0.10	0.00
9.96	1.33	0.00	8.48	0.06	0.00	9.97	1.32	0.00	8.48	0.02	0.00
10.05	1.30	0.00	8.47	0.08	0.00	10.14	1.28	0.00	8.45	0.09	0.00
10.19	1.27	0.00	8.45	0.05	0.00	10.25	1.26	0.00	8.44	0.06	0.00
10.31	1.25	0.00	8.43	0.06	0.00	10.41	1.24	0.00	8.41	0.10	0.00
10.45	1.28	0.00	8.41	0.04	0.00	10.54	1.30	0.00	8.39	0.09	0.00
10.59	1.33	0.00	8.39	0.04	0.00	10.67	1.32	0.00	8.37	0.08	0.00
10.71	1.30	0.00	8.37	0.04	0.00	10.78	1.26	0.00	8.36	0.06	0.00
10.85	1.23	0.00	8.35	0.07	0.00	10.91	1.20	0.00	8.34	0.06	0.00
10.98	1.20	0.00	8.33	0.07	0.00	11.07	1.20	0.00	8.31	0.09	0.00
11.11	1.25	0.00	8.31	0.05	0.00	11.16	1.27	0.00	8.30	0.05	0.00
11.24	1.26	0.00	8.29	0.08	0.00	11.32	1.22	0.00	8.27	0.08	0.00
11.37	1.17	0.00	8.27	0.05	0.00	11.44	1.14	0.00	8.26	0.07	0.00
11.51	1.11	0.00	8.25	0.07	0.00	11.55	1.08	0.00	8.24	0.05	0.00
11.64	1.03	0.00	8.23	0.09	0.00	11.68	0.99	0.01	8.22	0.04	0.00
11.79	0.96	0.04	8.20	0.11	0.01	11.82	0.96	0.04	8.20	0.03	0.00
11.91	0.95	0.05	8.19	0.09	0.01	11.95	0.99	0.01	8.18	0.04	0.00
12.05	1.03	0.00	8.16	0.11	0.00	12.09	1.09	0.00	8.16	0.04	0.00
12.17	1.12	0.00	8.15	0.08	0.00	12.21	1.17	0.00	8.14	0.04	0.00
12.29	1.21	0.00	8.13	0.08	0.00	12.37	1.25	0.00	8.12	0.08	0.00
12.43	1.27	0.00	8.11	0.06	0.00	12.47	1.28	0.00	8.10	0.04	0.00
12.56	1.27	0.00	8.09	0.08	0.00	12.60	1.23	0.00	8.08	0.04	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
12.67	1.18	0.00	8.07	0.07	0.00	12.75	1.12	0.00	8.06	0.08	0.00
12.84	1.06	0.00	8.04	0.09	0.00	12.89	1.02	0.00	8.04	0.05	0.00
12.96	1.01	0.00	8.03	0.06	0.00	13.00	1.02	0.00	8.02	0.05	0.00
13.09	1.05	0.00	8.00	0.09	0.00	13.13	1.09	0.00	8.00	0.04	0.00
13.19	1.14	0.00	7.99	0.06	0.00	13.26	1.20	0.00	7.98	0.06	0.00
13.35	1.23	0.00	7.96	0.10	0.00	13.40	1.25	0.00	7.96	0.04	0.00
13.49	1.22	0.00	7.94	0.09	0.00	13.53	1.18	0.00	7.94	0.04	0.00
13.59	1.15	0.00	7.93	0.06	0.00	13.66	1.12	0.00	7.92	0.07	0.00
13.74	1.12	0.00	7.91	0.08	0.00	13.80	1.14	0.00	7.90	0.06	0.00
13.85	1.16	0.00	7.89	0.05	0.00	13.92	1.19	0.00	7.88	0.07	0.00
13.98	1.22	0.00	7.87	0.05	0.00	14.07	1.25	0.00	7.86	0.09	0.00
14.11	1.30	0.00	7.85	0.04	0.00	14.20	1.33	0.00	7.84	0.09	0.00
14.24	1.40	0.00	7.83	0.04	0.00	14.33	1.46	0.00	7.82	0.09	0.00
14.38	1.52	0.00	7.81	0.04	0.00	14.45	1.54	0.00	7.80	0.07	0.00
14.53	1.50	0.00	7.79	0.08	0.00	14.60	1.45	0.00	7.78	0.07	0.00
14.64	1.41	0.00	7.77	0.04	0.00	14.72	1.39	0.00	7.76	0.08	0.00
14.77	1.40	0.00	7.75	0.04	0.00	14.84	1.38	0.00	7.74	0.07	0.00
14.90	1.35	0.00	7.73	0.07	0.00	14.99	1.29	0.00	7.72	0.09	0.00
15.07	1.23	0.00	7.70	0.08	0.00	15.11	1.18	0.00	7.70	0.04	0.00
15.21	1.15	0.00	7.68	0.11	0.00	15.26	1.12	0.00	7.67	0.04	0.00
15.30	1.12	0.00	7.67	0.04	0.00	15.39	1.13	0.00	7.65	0.09	0.00
15.43	1.15	0.00	7.65	0.04	0.00	15.52	1.13	0.00	7.63	0.09	0.00
15.56	1.09	0.00	7.63	0.04	0.00	15.62	1.00	0.00	7.62	0.05	0.00
15.71	0.91	0.09	7.61	0.09	0.02	15.75	0.84	0.16	7.60	0.04	0.02
15.83	0.79	0.21	7.59	0.07	0.04	15.92	0.75	0.25	7.57	0.09	0.05
16.00	0.73	0.27	7.56	0.09	0.05	16.05	0.72	0.28	7.55	0.05	0.03
16.09	0.73	0.27	7.55	0.04	0.03	16.18	0.72	0.28	7.53	0.09	0.05
16.23	0.73	0.27	7.53	0.05	0.03	16.28	0.75	0.25	7.52	0.05	0.03
16.36	0.76	0.24	7.51	0.09	0.05	16.42	0.79	0.21	7.50	0.06	0.03
16.50	0.80	0.20	7.49	0.08	0.03	16.55	0.83	0.17	7.48	0.05	0.02
16.61	0.84	0.16	7.47	0.05	0.02	16.68	0.88	0.12	7.46	0.07	0.02
16.75	0.93	0.07	7.45	0.08	0.01	16.81	1.02	0.00	7.44	0.06	0.00
16.89	1.07	0.00	7.43	0.07	0.00	16.93	1.09	0.00	7.42	0.05	0.00
17.02	1.09	0.00	7.41	0.09	0.00	17.06	1.11	0.00	7.40	0.05	0.00
17.15	1.12	0.00	7.39	0.09	0.00	17.24	1.13	0.00	7.37	0.09	0.00
17.29	1.11	0.00	7.36	0.05	0.00	17.34	1.08	0.00	7.36	0.04	0.00
17.44	1.05	0.00	7.34	0.10	0.00	17.48	1.01	0.00	7.34	0.04	0.00
17.53	0.96	0.04	7.33	0.05	0.00	17.62	0.88	0.12	7.31	0.10	0.03
17.68	0.83	0.17	7.31	0.05	0.02	17.73	0.78	0.22	7.30	0.05	0.02
17.83	0.74	0.26	7.28	0.10	0.06	17.89	0.70	0.30	7.27	0.07	0.05
17.95	0.69	0.31	7.27	0.05	0.04	17.99	0.68	0.32	7.26	0.04	0.03
18.05	0.69	0.31	7.25	0.06	0.04	18.11	0.69	0.31	7.24	0.07	0.04
18.23	0.69	0.31	7.22	0.11	0.08	18.29	0.71	0.29	7.21	0.07	0.04
18.34	0.72	0.28	7.21	0.05	0.03	18.39	0.74	0.26	7.20	0.05	0.03
18.45	0.74	0.26	7.19	0.06	0.03	18.52	0.76	0.24	7.18	0.07	0.04
18.62	0.78	0.22	7.16	0.10	0.05	18.67	0.80	0.20	7.15	0.05	0.02
18.74	0.81	0.19	7.14	0.07	0.03	18.79	0.81	0.19	7.14	0.05	0.02
18.85	0.81	0.19	7.13	0.07	0.03	18.91	0.81	0.19	7.12	0.05	0.02

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
19.00	0.80	0.20	7.10	0.10	0.04	19.07	0.79	0.21	7.09	0.07	0.03
19.13	0.80	0.20	7.08	0.06	0.03	19.18	0.82	0.18	7.08	0.05	0.02
19.30	0.82	0.18	7.06	0.13	0.05	19.35	0.81	0.19	7.05	0.05	0.02
19.36	0.83	0.17	7.05	0.01	0.00	19.42	0.86	0.14	7.04	0.07	0.02
19.49	0.91	0.09	7.03	0.07	0.01	19.57	0.95	0.05	7.02	0.08	0.01
19.62	0.96	0.04	7.01	0.05	0.00	19.72	0.95	0.05	7.00	0.09	0.01
19.76	0.92	0.08	6.99	0.04	0.01	19.84	0.89	0.11	6.98	0.08	0.02
19.89	0.86	0.14	6.97	0.05	0.02	19.97	0.84	0.16	6.96	0.08	0.03
20.01	0.86	0.14	6.95	0.04	0.01	20.14	0.87	0.13	6.93	0.12	0.03
20.15	0.91	0.09	6.93	0.02	0.00	20.22	0.94	0.06	6.92	0.07	0.01
20.28	0.97	0.03	6.91	0.06	0.00	20.37	0.99	0.01	6.90	0.09	0.00
20.42	1.03	0.00	6.89	0.04	0.00	20.48	1.07	0.00	6.88	0.07	0.00
20.55	1.16	0.00	6.87	0.07	0.00	20.64	1.26	0.00	6.86	0.08	0.00
20.68	1.34	0.00	6.85	0.04	0.00	20.77	1.34	0.00	6.83	0.09	0.00
20.81	1.24	0.00	6.83	0.04	0.00	20.94	1.09	0.00	6.81	0.13	0.00
20.99	0.94	0.06	6.80	0.05	0.01	21.03	0.86	0.14	6.80	0.04	0.01
21.08	0.77	0.23	6.79	0.05	0.02	21.16	0.71	0.29	6.77	0.09	0.05
21.24	0.66	0.34	6.76	0.08	0.05	21.28	0.67	0.33	6.76	0.04	0.03
21.35	0.68	0.32	6.75	0.07	0.04	21.43	0.69	0.31	6.73	0.08	0.05
21.47	2.00	0.00	6.73	0.04	0.00	21.60	2.00	0.00	6.71	0.13	0.00
21.64	2.00	0.00	6.70	0.04	0.00	21.69	2.00	0.00	6.69	0.05	0.00
21.74	2.00	0.00	6.69	0.05	0.00	21.79	2.00	0.00	6.68	0.06	0.00
21.88	2.00	0.00	6.67	0.09	0.00	21.96	0.19	0.81	6.65	0.08	0.14
22.00	0.19	0.81	6.65	0.04	0.06	22.09	0.20	0.80	6.63	0.09	0.14
22.13	0.19	0.81	6.63	0.05	0.07	22.18	0.19	0.81	6.62	0.04	0.07
22.26	2.00	0.00	6.61	0.08	0.00	22.35	2.00	0.00	6.59	0.09	0.00
22.40	2.00	0.00	6.59	0.05	0.00	22.48	2.00	0.00	6.57	0.09	0.00
22.51	2.00	0.00	6.57	0.03	0.00	22.59	2.00	0.00	6.56	0.07	0.00
22.72	2.00	0.00	6.54	0.13	0.00	22.73	2.00	0.00	6.54	0.02	0.00
22.78	2.00	0.00	6.53	0.04	0.00	22.85	2.00	0.00	6.52	0.08	0.00
22.95	2.00	0.00	6.50	0.10	0.00	23.00	2.00	0.00	6.50	0.05	0.00
23.04	2.00	0.00	6.49	0.05	0.00	23.18	2.00	0.00	6.47	0.14	0.00
23.22	2.00	0.00	6.46	0.03	0.00	23.25	2.00	0.00	6.46	0.03	0.00
23.30	0.99	0.01	6.45	0.05	0.00	23.40	0.97	0.03	6.43	0.10	0.01
23.45	0.95	0.05	6.43	0.05	0.01	23.53	0.92	0.08	6.41	0.08	0.01
23.56	0.88	0.12	6.41	0.03	0.01	23.67	0.84	0.16	6.39	0.12	0.04
23.72	0.81	0.19	6.39	0.05	0.02	23.76	0.79	0.21	6.38	0.04	0.02
23.86	0.78	0.22	6.36	0.10	0.04	23.91	0.78	0.22	6.36	0.05	0.02
23.95	0.78	0.22	6.35	0.04	0.02	24.04	0.78	0.22	6.34	0.08	0.04
24.08	0.79	0.21	6.33	0.05	0.02	24.19	0.79	0.21	6.31	0.11	0.04
24.25	0.79	0.21	6.30	0.06	0.02	24.30	0.77	0.23	6.30	0.05	0.02
24.36	0.77	0.23	6.29	0.05	0.02	24.41	0.78	0.22	6.28	0.05	0.02
24.48	0.83	0.17	6.27	0.07	0.02	24.57	0.88	0.12	6.26	0.09	0.02
24.62	0.93	0.07	6.25	0.05	0.01	24.68	0.97	0.03	6.24	0.06	0.00
24.79	1.01	0.00	6.22	0.11	0.00	24.83	1.06	0.00	6.22	0.04	0.00
24.88	1.07	0.00	6.21	0.05	0.00	24.97	1.03	0.00	6.19	0.09	0.00
25.03	0.94	0.06	6.19	0.06	0.01	25.10	0.83	0.17	6.18	0.07	0.02
25.14	0.70	0.30	6.17	0.04	0.02	25.23	0.59	0.41	6.16	0.09	0.07

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
25.28	0.50	0.50	6.15	0.05	0.05	25.34	0.46	0.54	6.14	0.05	0.06
25.45	0.41	0.59	6.12	0.11	0.12	25.52	0.36	0.64	6.11	0.08	0.09
25.54	0.35	0.65	6.11	0.01	0.01	25.61	0.36	0.64	6.10	0.08	0.09
25.67	0.38	0.62	6.09	0.06	0.07	25.73	0.38	0.62	6.08	0.06	0.07
25.80	0.38	0.62	6.07	0.07	0.08	25.86	0.38	0.62	6.06	0.05	0.06
25.94	0.40	0.60	6.05	0.08	0.09	26.00	0.43	0.57	6.04	0.07	0.07
26.07	0.45	0.55	6.03	0.07	0.07	26.16	0.47	0.53	6.01	0.09	0.08
26.19	0.47	0.53	6.01	0.03	0.03	26.26	0.46	0.54	6.00	0.07	0.07
26.33	0.44	0.56	5.99	0.07	0.07	26.38	0.44	0.56	5.98	0.05	0.05
26.51	0.42	0.58	5.96	0.13	0.13	26.53	0.43	0.57	5.96	0.02	0.03
26.61	0.43	0.57	5.94	0.08	0.09	26.66	0.44	0.56	5.94	0.05	0.05
26.73	0.45	0.55	5.93	0.06	0.06	26.78	0.46	0.54	5.92	0.05	0.05
26.86	0.47	0.53	5.91	0.08	0.08	26.93	0.48	0.52	5.90	0.07	0.07
27.01	0.50	0.50	5.88	0.08	0.07	27.04	0.51	0.49	5.88	0.03	0.03
27.12	0.51	0.49	5.87	0.08	0.07	27.17	0.52	0.48	5.86	0.05	0.04
27.25	0.54	0.46	5.85	0.08	0.07	27.32	0.54	0.46	5.84	0.07	0.06
27.40	0.54	0.46	5.82	0.07	0.06	27.43	0.53	0.47	5.82	0.04	0.03
27.52	0.53	0.47	5.81	0.08	0.07	27.57	0.54	0.46	5.80	0.05	0.04
27.63	0.56	0.44	5.79	0.07	0.05	27.73	0.57	0.43	5.77	0.09	0.07
27.76	0.58	0.42	5.77	0.03	0.03	27.83	0.59	0.41	5.76	0.07	0.05
27.92	0.61	0.39	5.75	0.09	0.06	27.96	0.62	0.38	5.74	0.04	0.03
28.05	0.61	0.39	5.73	0.09	0.06	28.09	0.60	0.40	5.72	0.05	0.03
28.18	0.57	0.43	5.70	0.09	0.07	28.22	0.54	0.46	5.70	0.04	0.03
28.31	0.52	0.48	5.69	0.08	0.07	28.36	0.51	0.49	5.68	0.05	0.04
28.43	0.52	0.48	5.67	0.07	0.06	28.52	0.56	0.44	5.65	0.09	0.07
28.57	0.61	0.39	5.65	0.05	0.04	28.64	0.69	0.31	5.63	0.07	0.04
28.69	0.76	0.24	5.63	0.05	0.02	28.77	0.82	0.18	5.62	0.08	0.02
28.83	0.85	0.15	5.61	0.05	0.01	28.91	0.85	0.15	5.59	0.08	0.02
28.96	0.84	0.16	5.59	0.05	0.01	29.05	0.82	0.18	5.57	0.10	0.03
29.10	0.80	0.20	5.57	0.05	0.02	29.18	0.80	0.20	5.55	0.08	0.03
29.22	2.00	0.00	5.55	0.04	0.00	29.31	2.00	0.00	5.53	0.09	0.00
29.35	2.00	0.00	5.53	0.04	0.00	29.44	2.00	0.00	5.51	0.09	0.00
29.53	2.00	0.00	5.50	0.09	0.00	29.57	2.00	0.00	5.49	0.05	0.00
29.62	2.00	0.00	5.49	0.05	0.00	29.66	2.00	0.00	5.48	0.04	0.00
29.75	2.00	0.00	5.47	0.08	0.00	29.83	2.00	0.00	5.45	0.09	0.00
29.87	2.00	0.00	5.45	0.03	0.00	29.95	0.23	0.77	5.44	0.09	0.11
30.03	0.24	0.76	5.42	0.07	0.09	30.09	0.25	0.75	5.41	0.07	0.08
30.12	0.25	0.75	5.41	0.03	0.04	30.22	2.00	0.00	5.39	0.10	0.00
30.26	2.00	0.00	5.39	0.04	0.00	30.36	2.00	0.00	5.37	0.10	0.00
30.39	2.00	0.00	5.37	0.03	0.00	30.48	2.00	0.00	5.35	0.10	0.00
30.53	2.00	0.00	5.35	0.05	0.00	30.62	2.00	0.00	5.33	0.08	0.00
30.66	2.00	0.00	5.33	0.05	0.00	30.75	2.00	0.00	5.31	0.09	0.00
30.81	2.00	0.00	5.31	0.05	0.00	30.85	2.00	0.00	5.30	0.04	0.00
30.93	0.94	0.06	5.29	0.09	0.01	30.98	0.87	0.13	5.28	0.05	0.01
31.07	0.80	0.20	5.26	0.09	0.03	31.11	0.71	0.29	5.26	0.04	0.02
31.20	0.65	0.35	5.24	0.09	0.05	31.28	0.61	0.39	5.23	0.08	0.05
31.33	0.59	0.41	5.23	0.05	0.03	31.38	0.57	0.43	5.22	0.05	0.03
31.46	0.55	0.45	5.21	0.09	0.06	31.52	0.55	0.45	5.20	0.05	0.04

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.59	0.55	0.45	5.19	0.07	0.05	31.65	0.55	0.45	5.18	0.06	0.04
31.70	0.56	0.44	5.17	0.05	0.04	31.78	0.57	0.43	5.16	0.08	0.05
31.87	0.60	0.40	5.14	0.09	0.05	31.91	0.62	0.38	5.14	0.04	0.03
31.97	0.64	0.36	5.13	0.06	0.03	32.06	0.65	0.35	5.11	0.09	0.05
32.09	0.66	0.34	5.11	0.03	0.02	32.18	0.67	0.33	5.10	0.09	0.04
32.22	0.70	0.30	5.09	0.04	0.02	32.31	0.72	0.28	5.08	0.09	0.04
32.35	0.70	0.30	5.07	0.04	0.02	32.44	0.66	0.34	5.06	0.09	0.05
32.49	0.62	0.38	5.05	0.04	0.03	32.58	0.59	0.41	5.04	0.09	0.06
32.63	0.58	0.42	5.03	0.06	0.04	32.73	0.57	0.43	5.01	0.09	0.06
32.76	0.56	0.44	5.01	0.03	0.02	32.83	0.56	0.44	5.00	0.07	0.05
32.88	0.60	0.40	4.99	0.04	0.03	32.97	0.67	0.33	4.98	0.10	0.05
33.01	2.00	0.00	4.97	0.04	0.00	33.08	2.00	0.00	4.96	0.07	0.00
33.15	2.00	0.00	4.95	0.07	0.00	33.24	2.00	0.00	4.93	0.08	0.00
33.28	2.00	0.00	4.93	0.04	0.00	33.34	2.00	0.00	4.92	0.06	0.00
33.42	0.15	0.85	4.91	0.08	0.10	33.50	0.15	0.85	4.90	0.08	0.10
33.54	0.15	0.85	4.89	0.04	0.06	33.60	0.16	0.84	4.88	0.05	0.07
33.68	0.17	0.83	4.87	0.08	0.10	33.77	0.22	0.78	4.85	0.09	0.11
33.80	0.22	0.78	4.85	0.03	0.04	33.90	0.28	0.72	4.83	0.09	0.10
33.95	0.25	0.75	4.83	0.05	0.05	34.00	0.24	0.76	4.82	0.05	0.06
34.07	0.24	0.76	4.81	0.07	0.08	34.25	0.26	0.74	4.78	0.18	0.19
34.29	2.00	0.00	4.77	0.04	0.00	34.34	2.00	0.00	4.77	0.05	0.00
34.38	2.00	0.00	4.76	0.03	0.00	34.41	2.00	0.00	4.76	0.03	0.00
34.47	2.00	0.00	4.75	0.06	0.00	34.55	2.00	0.00	4.73	0.08	0.00
34.60	2.00	0.00	4.73	0.05	0.00	34.68	2.00	0.00	4.71	0.08	0.00
34.74	2.00	0.00	4.71	0.05	0.00	34.78	2.00	0.00	4.70	0.04	0.00
34.87	2.00	0.00	4.69	0.09	0.00	34.92	2.00	0.00	4.68	0.05	0.00
35.02	2.00	0.00	4.66	0.10	0.00	35.09	0.79	0.21	4.65	0.07	0.02
35.14	0.73	0.27	4.64	0.05	0.02	35.20	0.69	0.31	4.64	0.06	0.02
35.27	0.66	0.34	4.63	0.07	0.03	35.32	0.63	0.37	4.62	0.05	0.03
35.37	0.60	0.40	4.61	0.05	0.03	35.49	0.56	0.44	4.59	0.12	0.08
35.53	0.54	0.46	4.58	0.04	0.03	35.59	0.52	0.48	4.58	0.06	0.04
35.67	0.49	0.51	4.56	0.07	0.05	35.71	0.47	0.53	4.56	0.04	0.03
35.80	0.46	0.54	4.54	0.09	0.07	35.84	0.48	0.52	4.54	0.05	0.03
35.93	0.57	0.43	4.52	0.09	0.05	36.03	2.00	0.00	4.51	0.10	0.00
36.09	2.00	0.00	4.50	0.06	0.00	36.13	2.00	0.00	4.49	0.04	0.00
36.19	2.00	0.00	4.48	0.06	0.00	36.24	2.00	0.00	4.48	0.04	0.00
36.29	2.00	0.00	4.47	0.05	0.00	36.41	2.00	0.00	4.45	0.13	0.00
36.50	0.44	0.56	4.44	0.09	0.07	36.55	0.47	0.53	4.43	0.05	0.03
36.59	0.50	0.50	4.42	0.05	0.03	36.65	0.53	0.47	4.42	0.05	0.03
36.71	0.55	0.45	4.41	0.06	0.04	36.76	0.56	0.44	4.40	0.05	0.03
36.81	0.59	0.41	4.39	0.06	0.03	36.98	0.54	0.46	4.36	0.17	0.10
37.03	0.53	0.47	4.36	0.05	0.03	37.09	0.50	0.50	4.35	0.06	0.04
37.16	0.45	0.55	4.34	0.07	0.05	37.21	0.42	0.58	4.33	0.05	0.04
37.26	0.39	0.61	4.32	0.05	0.04	37.34	0.36	0.64	4.31	0.08	0.06
37.38	0.35	0.65	4.30	0.05	0.04	37.43	0.26	0.74	4.30	0.04	0.04
37.47	0.27	0.73	4.29	0.04	0.04	37.53	0.25	0.75	4.28	0.06	0.06
37.64	0.24	0.76	4.26	0.11	0.11	37.69	0.23	0.77	4.26	0.05	0.05
37.73	0.22	0.78	4.25	0.04	0.04	37.82	0.21	0.79	4.24	0.09	0.09

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
37.87	0.21	0.79	4.23	0.04	0.04	37.95	0.20	0.80	4.22	0.08	0.09
38.04	0.19	0.81	4.20	0.09	0.10	38.07	0.19	0.81	4.20	0.03	0.04
38.15	0.19	0.81	4.19	0.07	0.08	38.22	0.18	0.82	4.18	0.07	0.07
38.26	0.18	0.82	4.17	0.05	0.05	38.34	0.18	0.82	4.16	0.07	0.07
38.41	0.18	0.82	4.15	0.07	0.08	38.46	0.18	0.82	4.14	0.05	0.05
38.55	0.19	0.81	4.12	0.09	0.09	38.59	0.19	0.81	4.12	0.03	0.04
38.69	0.20	0.80	4.10	0.10	0.10	38.75	0.20	0.80	4.09	0.06	0.06
38.79	0.21	0.79	4.09	0.04	0.04	38.88	2.00	0.00	4.08	0.09	0.00
38.93	2.00	0.00	4.07	0.05	0.00	38.98	2.00	0.00	4.06	0.05	0.00
39.05	2.00	0.00	4.05	0.07	0.00	39.14	2.00	0.00	4.04	0.09	0.00
39.19	2.00	0.00	4.03	0.05	0.00	39.24	2.00	0.00	4.02	0.05	0.00
39.31	2.00	0.00	4.01	0.06	0.00	39.41	2.00	0.00	3.99	0.10	0.00
39.46	2.00	0.00	3.99	0.05	0.00	39.53	2.00	0.00	3.98	0.07	0.00
39.59	2.00	0.00	3.97	0.06	0.00	39.69	2.00	0.00	3.95	0.10	0.00
39.76	2.00	0.00	3.94	0.08	0.00	39.81	2.00	0.00	3.93	0.04	0.00
39.85	2.00	0.00	3.93	0.04	0.00	39.92	2.00	0.00	3.92	0.07	0.00
39.98	2.00	0.00	3.91	0.06	0.00	40.07	2.00	0.00	3.89	0.09	0.00
40.11	2.00	0.00	3.89	0.05	0.00	40.19	2.00	0.00	3.87	0.08	0.00
40.26	2.00	0.00	3.86	0.07	0.00	40.30	0.22	0.78	3.86	0.04	0.03
40.39	0.21	0.79	3.85	0.09	0.08	40.43	0.22	0.78	3.84	0.05	0.04
40.51	0.22	0.78	3.83	0.08	0.07	40.60	0.22	0.78	3.81	0.09	0.09
40.67	0.23	0.77	3.80	0.07	0.06	40.72	0.23	0.77	3.79	0.05	0.05
40.78	0.23	0.77	3.79	0.05	0.05	40.82	0.24	0.76	3.78	0.04	0.04
40.95	0.26	0.74	3.76	0.13	0.11	40.99	0.27	0.73	3.75	0.04	0.04
41.03	0.27	0.73	3.75	0.04	0.03	41.12	0.28	0.72	3.73	0.08	0.07
41.21	0.28	0.72	3.72	0.09	0.08	41.28	0.29	0.71	3.71	0.07	0.06
41.34	0.29	0.71	3.70	0.06	0.05	41.39	0.29	0.71	3.69	0.05	0.04
41.45	0.28	0.72	3.68	0.06	0.05	41.52	0.28	0.72	3.67	0.07	0.05
41.56	0.27	0.73	3.67	0.05	0.04	41.62	0.24	0.76	3.66	0.05	0.04
41.73	0.25	0.75	3.64	0.12	0.10	41.78	0.23	0.77	3.63	0.05	0.04
41.84	0.24	0.76	3.62	0.05	0.04	41.91	0.26	0.74	3.61	0.08	0.06
41.96	0.29	0.71	3.61	0.05	0.04	42.00	0.33	0.67	3.60	0.04	0.03
42.13	0.38	0.62	3.58	0.13	0.09	42.18	0.40	0.60	3.57	0.05	0.03
42.24	0.40	0.60	3.56	0.05	0.04	42.29	0.40	0.60	3.56	0.05	0.03
42.36	0.39	0.61	3.55	0.07	0.04	42.40	0.37	0.63	3.54	0.05	0.03
42.53	0.33	0.67	3.52	0.12	0.09	42.58	0.31	0.69	3.51	0.05	0.04
42.64	0.29	0.71	3.50	0.07	0.05	42.69	0.27	0.73	3.49	0.05	0.04
42.75	0.24	0.76	3.48	0.06	0.05	42.80	0.22	0.78	3.48	0.04	0.04
42.88	0.20	0.80	3.47	0.08	0.07	42.91	0.13	0.87	3.46	0.04	0.04
43.01	0.17	0.83	3.45	0.09	0.08	43.06	0.16	0.84	3.44	0.06	0.05
43.13	0.16	0.84	3.43	0.07	0.06	43.18	2.00	0.00	3.42	0.05	0.00
43.25	2.00	0.00	3.41	0.06	0.00	43.31	2.00	0.00	3.40	0.07	0.00
43.38	2.00	0.00	3.39	0.07	0.00	43.44	2.00	0.00	3.38	0.06	0.00
43.52	2.00	0.00	3.37	0.08	0.00	43.57	2.00	0.00	3.36	0.05	0.00
43.68	2.00	0.00	3.34	0.10	0.00	43.71	2.00	0.00	3.34	0.03	0.00
43.81	2.00	0.00	3.32	0.10	0.00	43.84	2.00	0.00	3.32	0.03	0.00
43.92	0.16	0.84	3.31	0.08	0.07	43.97	1.40	0.00	3.30	0.05	0.00
44.06	1.30	0.00	3.29	0.08	0.00	44.12	1.20	0.00	3.28	0.06	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
44.20	1.13	0.00	3.26	0.09	0.00	44.24	1.08	0.00	3.26	0.04	0.00
44.33	1.05	0.00	3.24	0.08	0.00	44.37	1.05	0.00	3.24	0.04	0.00
44.46	1.05	0.00	3.22	0.09	0.00	44.50	1.06	0.00	3.22	0.04	0.00
44.59	1.07	0.00	3.20	0.09	0.00	44.63	2.00	0.00	3.20	0.05	0.00
44.72	2.00	0.00	3.18	0.09	0.00	44.77	2.00	0.00	3.18	0.05	0.00
44.82	2.00	0.00	3.17	0.05	0.00	44.90	2.00	0.00	3.16	0.08	0.00
44.96	2.00	0.00	3.15	0.07	0.00	45.06	2.00	0.00	3.13	0.10	0.00
45.11	2.00	0.00	3.12	0.05	0.00	45.16	0.26	0.74	3.12	0.04	0.03
45.25	0.26	0.74	3.10	0.09	0.06	45.29	0.30	0.70	3.10	0.05	0.03
45.40	0.33	0.67	3.08	0.11	0.07	45.43	0.40	0.60	3.08	0.02	0.01
45.48	0.43	0.57	3.07	0.05	0.03	45.59	0.49	0.51	3.05	0.12	0.06
45.64	0.49	0.51	3.05	0.04	0.02	45.69	0.51	0.49	3.04	0.05	0.02
45.78	0.54	0.46	3.02	0.09	0.04	45.82	0.54	0.46	3.02	0.04	0.02
45.87	0.47	0.53	3.01	0.05	0.03	46.02	0.30	0.70	2.99	0.14	0.09
46.07	2.00	0.00	2.98	0.05	0.00	46.12	2.00	0.00	2.97	0.05	0.00
46.21	2.00	0.00	2.96	0.09	0.00	46.22	2.00	0.00	2.96	0.01	0.00
46.27	2.00	0.00	2.95	0.05	0.00	46.35	2.00	0.00	2.94	0.09	0.00
46.44	2.00	0.00	2.92	0.08	0.00	46.48	2.00	0.00	2.92	0.05	0.00
46.53	2.00	0.00	2.91	0.05	0.00	46.62	2.00	0.00	2.90	0.09	0.00
46.66	2.00	0.00	2.89	0.04	0.00	46.75	2.00	0.00	2.88	0.09	0.00
46.79	2.00	0.00	2.87	0.04	0.00	46.88	2.00	0.00	2.86	0.09	0.00
46.95	2.00	0.00	2.85	0.06	0.00	47.01	2.00	0.00	2.84	0.07	0.00
47.06	2.00	0.00	2.83	0.04	0.00	47.13	2.00	0.00	2.82	0.07	0.00
47.19	2.00	0.00	2.81	0.07	0.00	47.26	2.00	0.00	2.80	0.07	0.00
47.32	0.60	0.40	2.79	0.06	0.02	47.41	0.70	0.30	2.77	0.09	0.02
47.45	0.70	0.30	2.77	0.03	0.01	47.54	0.71	0.29	2.76	0.09	0.02
47.59	0.68	0.32	2.75	0.05	0.01	47.66	0.66	0.34	2.74	0.07	0.02
47.72	0.63	0.37	2.73	0.06	0.02	47.77	0.62	0.38	2.72	0.05	0.02
47.85	0.59	0.41	2.71	0.08	0.03	47.94	0.57	0.43	2.69	0.09	0.03
47.97	0.55	0.45	2.69	0.03	0.01	48.07	0.51	0.49	2.67	0.10	0.04
48.12	0.48	0.52	2.67	0.04	0.02	48.19	0.46	0.54	2.66	0.08	0.03
48.25	0.42	0.58	2.65	0.05	0.03	48.30	0.39	0.61	2.64	0.05	0.02
48.40	0.33	0.67	2.62	0.10	0.05	48.45	0.30	0.70	2.62	0.05	0.03
48.56	2.00	0.00	2.60	0.11	0.00	48.60	2.00	0.00	2.59	0.05	0.00
48.64	2.00	0.00	2.59	0.04	0.00	48.70	2.00	0.00	2.58	0.06	0.00
48.77	2.00	0.00	2.57	0.07	0.00	48.83	2.00	0.00	2.56	0.06	0.00
48.91	2.00	0.00	2.55	0.08	0.00	48.96	2.00	0.00	2.54	0.05	0.00
49.02	2.00	0.00	2.53	0.06	0.00	49.09	2.00	0.00	2.52	0.08	0.00
49.19	2.00	0.00	2.50	0.10	0.00	49.23	2.00	0.00	2.50	0.04	0.00
49.31	2.00	0.00	2.48	0.09	0.00	49.36	2.00	0.00	2.48	0.04	0.00
49.45	0.70	0.30	2.46	0.09	0.02	49.49	0.63	0.37	2.46	0.04	0.01
49.55	2.00	0.00	2.45	0.06	0.00	49.62	2.00	0.00	2.44	0.07	0.00
49.71	2.00	0.00	2.42	0.09	0.00	49.75	2.00	0.00	2.42	0.04	0.00
49.81	2.00	0.00	2.41	0.06	0.00	49.89	2.00	0.00	2.40	0.07	0.00
49.94	2.00	0.00	2.39	0.05	0.00	50.02	2.00	0.00	2.38	0.08	0.00
50.12	2.00	0.00	2.36	0.11	0.00	50.19	2.00	0.00	2.35	0.07	0.00
50.24	2.00	0.00	2.34	0.05	0.00	50.28	2.00	0.00	2.34	0.05	0.00
50.35	2.00	0.00	2.33	0.06	0.00	50.41	2.00	0.00	2.32	0.07	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
50.46	2.00	0.00	2.31	0.05	0.00	50.58	2.00	0.00	2.29	0.12	0.00
50.64	2.00	0.00	2.28	0.05	0.00	50.69	2.00	0.00	2.28	0.05	0.00
50.75	2.00	0.00	2.27	0.06	0.00	50.81	2.00	0.00	2.26	0.06	0.00
50.86	2.00	0.00	2.25	0.05	0.00	50.96	2.00	0.00	2.23	0.11	0.00
51.03	2.00	0.00	2.22	0.07	0.00	51.07	2.00	0.00	2.22	0.04	0.00
51.13	2.00	0.00	2.21	0.06	0.00	51.21	0.33	0.67	2.20	0.08	0.03
51.25	0.36	0.64	2.19	0.05	0.02	51.32	0.41	0.59	2.18	0.06	0.02
51.38	0.47	0.53	2.17	0.06	0.02	51.48	0.57	0.43	2.15	0.10	0.03
51.55	0.62	0.38	2.14	0.07	0.02	51.60	0.63	0.37	2.14	0.05	0.01
51.65	0.58	0.42	2.13	0.05	0.01	51.78	0.46	0.54	2.11	0.13	0.05
51.82	0.43	0.57	2.10	0.04	0.01	51.89	0.43	0.57	2.09	0.07	0.02
51.95	0.48	0.52	2.08	0.06	0.02	52.00	0.58	0.42	2.08	0.05	0.01
52.04	0.78	0.22	2.07	0.04	0.01	52.11	0.38	0.62	2.06	0.06	0.03
52.18	1.23	0.00	2.05	0.07	0.00	52.24	1.77	0.00	2.04	0.06	0.00
52.33	2.00	0.00	2.03	0.09	0.00	52.42	1.64	0.00	2.01	0.10	0.00
52.46	1.40	0.00	2.01	0.03	0.00	52.51	1.33	0.00	2.00	0.05	0.00
52.62	0.96	0.04	1.98	0.11	0.00	52.67	0.84	0.16	1.97	0.06	0.01
52.72	0.81	0.19	1.97	0.05	0.01	52.77	0.74	0.26	1.96	0.04	0.01
52.84	0.72	0.28	1.95	0.07	0.01	52.94	0.64	0.36	1.93	0.10	0.02
53.04	0.57	0.43	1.92	0.10	0.02	53.10	0.54	0.46	1.91	0.06	0.02
53.16	0.49	0.51	1.90	0.06	0.02	53.21	0.46	0.54	1.89	0.05	0.01
53.27	0.44	0.56	1.88	0.07	0.02	53.34	0.44	0.56	1.87	0.07	0.02
53.38	0.45	0.55	1.86	0.04	0.01	53.43	0.43	0.57	1.86	0.05	0.02
53.50	0.42	0.58	1.85	0.06	0.02	53.56	0.42	0.58	1.84	0.06	0.02
53.66	0.39	0.61	1.82	0.10	0.03	53.72	0.36	0.64	1.81	0.06	0.02
53.78	0.31	0.69	1.80	0.06	0.02	53.82	0.27	0.73	1.80	0.04	0.02
53.89	0.23	0.77	1.79	0.07	0.03	53.97	0.19	0.81	1.78	0.08	0.03
54.04	0.16	0.84	1.76	0.08	0.03	54.08	0.15	0.85	1.76	0.04	0.02
54.16	0.14	0.86	1.75	0.07	0.03	54.21	0.14	0.86	1.74	0.05	0.02
54.27	0.15	0.85	1.73	0.06	0.03	54.35	0.16	0.84	1.72	0.08	0.04
54.44	0.17	0.83	1.70	0.09	0.04	54.48	0.17	0.83	1.70	0.04	0.02
54.55	0.18	0.82	1.69	0.07	0.03	54.62	0.19	0.81	1.68	0.07	0.03
54.70	0.18	0.82	1.66	0.09	0.04	54.75	0.17	0.83	1.66	0.05	0.02
54.80	0.16	0.84	1.65	0.05	0.02	54.88	0.16	0.84	1.64	0.08	0.03
54.97	0.17	0.83	1.62	0.09	0.04	55.01	0.17	0.83	1.62	0.04	0.02
55.05	0.19	0.81	1.61	0.04	0.02	55.12	0.19	0.81	1.60	0.07	0.03
55.19	0.24	0.76	1.59	0.06	0.02	55.27	0.25	0.75	1.58	0.08	0.03
55.34	0.26	0.74	1.57	0.07	0.02	55.39	0.26	0.74	1.56	0.06	0.02
55.49	0.27	0.73	1.54	0.10	0.03	55.54	0.27	0.73	1.54	0.04	0.02
55.58	0.27	0.73	1.53	0.04	0.01	55.67	0.26	0.74	1.52	0.09	0.03
55.75	0.25	0.75	1.50	0.09	0.03	55.80	0.24	0.76	1.50	0.05	0.02
55.84	0.24	0.76	1.49	0.04	0.01	55.93	0.24	0.76	1.48	0.09	0.03
55.98	0.24	0.76	1.47	0.05	0.02	56.06	0.23	0.77	1.46	0.09	0.03
56.11	0.21	0.79	1.45	0.05	0.02	56.21	0.25	0.75	1.43	0.10	0.03
56.37	0.38	0.62	1.41	0.16	0.04	56.40	0.42	0.58	1.40	0.04	0.01
56.43	0.45	0.55	1.40	0.02	0.01	56.48	0.47	0.53	1.39	0.05	0.01
56.52	0.48	0.52	1.39	0.04	0.01	56.59	0.48	0.52	1.38	0.08	0.02
56.64	0.48	0.52	1.37	0.04	0.01	56.76	0.44	0.56	1.35	0.12	0.03

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
56.78	0.42	0.58	1.35	0.02	0.01	56.85	0.39	0.61	1.34	0.07	0.02
56.90	0.37	0.63	1.33	0.05	0.01	56.96	2.00	0.00	1.32	0.06	0.00
57.03	2.00	0.00	1.31	0.07	0.00	57.10	2.00	0.00	1.30	0.07	0.00
57.17	2.00	0.00	1.29	0.06	0.00	57.25	2.00	0.00	1.27	0.09	0.00
57.29	2.00	0.00	1.27	0.03	0.00	57.35	2.00	0.00	1.26	0.06	0.00
57.43	2.00	0.00	1.25	0.07	0.00	57.51	2.00	0.00	1.24	0.08	0.00
57.57	2.00	0.00	1.23	0.06	0.00	57.65	2.00	0.00	1.21	0.07	0.00
57.70	0.69	0.31	1.21	0.05	0.01	57.78	0.61	0.39	1.19	0.08	0.01
57.83	0.58	0.42	1.19	0.05	0.01	57.91	0.58	0.42	1.17	0.09	0.01
57.96	0.56	0.44	1.17	0.04	0.01	58.04	0.58	0.42	1.15	0.09	0.01
58.09	0.58	0.42	1.15	0.04	0.01	58.17	0.60	0.40	1.13	0.09	0.01
58.22	0.56	0.44	1.13	0.05	0.01	58.28	0.54	0.46	1.12	0.06	0.01
58.35	0.51	0.49	1.11	0.07	0.01	58.40	0.53	0.47	1.10	0.05	0.01
58.50	0.55	0.45	1.08	0.10	0.01	58.60	0.60	0.40	1.07	0.11	0.01
58.63	0.63	0.37	1.06	0.03	0.00	58.71	0.64	0.36	1.05	0.08	0.01
58.75	0.64	0.36	1.05	0.04	0.00	58.80	0.64	0.36	1.04	0.05	0.01
58.88	0.68	0.32	1.03	0.08	0.01	59.01	0.72	0.28	1.01	0.13	0.01
59.05	0.73	0.27	1.00	0.04	0.00	59.07	0.67	0.33	1.00	0.02	0.00
59.16	0.59	0.41	0.98	0.10	0.01	59.21	0.51	0.49	0.98	0.04	0.01
59.27	0.46	0.54	0.97	0.06	0.01	59.32	0.44	0.56	0.96	0.05	0.01
59.41	0.45	0.55	0.95	0.09	0.01	59.45	0.46	0.54	0.94	0.05	0.01
59.55	0.48	0.52	0.92	0.10	0.01	59.60	0.49	0.51	0.92	0.05	0.01
59.66	0.50	0.50	0.91	0.06	0.01	59.76	0.50	0.50	0.89	0.09	0.01
59.80	0.49	0.51	0.89	0.04	0.01	59.85	0.46	0.54	0.88	0.05	0.01
59.94	0.43	0.57	0.86	0.09	0.01	59.98	0.40	0.60	0.86	0.04	0.01
60.05	0.38	0.62	0.85	0.07	0.01	60.16	0.37	0.63	0.83	0.11	0.02
60.20	0.36	0.64	0.83	0.05	0.01	60.25	0.36	0.64	0.82	0.04	0.01
60.34	0.37	0.63	0.80	0.10	0.01	60.39	0.38	0.62	0.80	0.05	0.01
60.46	0.40	0.60	0.79	0.07	0.01	60.50	0.41	0.59	0.78	0.04	0.01
60.59	0.41	0.59	0.77	0.09	0.01	60.64	0.41	0.59	0.76	0.05	0.01
60.74	0.42	0.58	0.74	0.09	0.01	60.77	0.42	0.58	0.74	0.04	0.00
60.83	0.43	0.57	0.73	0.06	0.01	60.95	0.42	0.58	0.71	0.12	0.01
60.98	0.42	0.58	0.71	0.03	0.00	61.06	0.42	0.58	0.69	0.08	0.01
61.11	0.41	0.59	0.69	0.05	0.01	61.20	0.40	0.60	0.67	0.09	0.01
61.24	0.39	0.61	0.67	0.04	0.00	61.30	0.39	0.61	0.66	0.06	0.01
61.38	0.38	0.62	0.65	0.08	0.01	61.42	0.37	0.63	0.64	0.05	0.01
61.51	0.36	0.64	0.63	0.09	0.01	61.55	0.35	0.65	0.62	0.04	0.00
61.64	0.35	0.65	0.61	0.08	0.01	61.69	0.36	0.64	0.60	0.05	0.01
61.77	0.37	0.63	0.59	0.08	0.01	61.86	0.37	0.63	0.57	0.09	0.01
61.89	0.37	0.63	0.57	0.03	0.00	61.95	0.37	0.63	0.56	0.06	0.01
62.04	0.37	0.63	0.54	0.09	0.01	62.08	0.37	0.63	0.54	0.04	0.00
62.17	0.37	0.63	0.53	0.09	0.01	62.21	0.36	0.64	0.52	0.04	0.00
62.29	0.35	0.65	0.51	0.08	0.01	62.36	0.35	0.65	0.50	0.06	0.01
62.45	0.35	0.65	0.48	0.10	0.01	62.48	0.35	0.65	0.48	0.02	0.00
62.56	0.36	0.64	0.47	0.09	0.01	62.60	0.36	0.64	0.46	0.04	0.00
62.70	0.36	0.64	0.44	0.09	0.01	62.74	0.37	0.63	0.44	0.04	0.00
62.82	0.38	0.62	0.43	0.09	0.01	62.87	0.42	0.58	0.42	0.05	0.00
62.97	0.45	0.55	0.40	0.10	0.01	63.02	0.47	0.53	0.40	0.05	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
63.09	0.46	0.54	0.39	0.07	0.00	63.14	0.43	0.57	0.38	0.05	0.00
63.26	0.41	0.59	0.36	0.13	0.01	63.31	0.39	0.61	0.35	0.05	0.00
63.35	0.39	0.61	0.35	0.04	0.00	63.40	0.38	0.62	0.34	0.05	0.00
63.49	0.38	0.62	0.32	0.08	0.01	63.53	0.38	0.62	0.32	0.04	0.00
63.58	0.38	0.62	0.31	0.05	0.00	63.66	0.37	0.63	0.30	0.08	0.00
63.76	0.36	0.64	0.28	0.10	0.01	63.82	0.35	0.65	0.27	0.06	0.00
63.88	0.33	0.67	0.26	0.06	0.00	63.93	0.32	0.68	0.26	0.05	0.00
63.99	0.30	0.70	0.25	0.06	0.00	64.06	0.28	0.72	0.24	0.06	0.00
64.16	0.27	0.73	0.22	0.11	0.01	64.23	0.25	0.75	0.21	0.07	0.00
64.28	0.24	0.76	0.20	0.04	0.00	64.34	0.23	0.77	0.19	0.06	0.00
64.39	0.22	0.78	0.19	0.05	0.00	64.48	0.22	0.78	0.17	0.09	0.00
64.52	0.21	0.79	0.17	0.04	0.00	64.61	0.21	0.79	0.15	0.09	0.00
64.65	0.21	0.79	0.15	0.05	0.00	64.70	0.20	0.80	0.14	0.05	0.00
64.80	0.20	0.80	0.12	0.10	0.00	64.85	0.21	0.79	0.12	0.05	0.00
64.92	0.21	0.79	0.11	0.06	0.00	65.00	0.21	0.79	0.09	0.09	0.00
65.07	0.21	0.79	0.08	0.07	0.00	65.13	0.21	0.79	0.07	0.06	0.00
65.18	0.21	0.79	0.07	0.05	0.00	65.25	0.21	0.79	0.06	0.07	0.00
65.31	0.21	0.79	0.05	0.06	0.00	65.40	0.21	0.79	0.03	0.09	0.00
65.45	0.21	0.79	0.03	0.05	0.00	65.53	0.21	0.79	0.01	0.08	0.00
65.62	0.21	0.00	0.00	0.00	0.00	65.68	0.21	0.00	0.00	0.00	0.00
65.75	0.21	0.00	0.00	0.00	0.00	65.84	0.22	0.00	0.00	0.00	0.00
65.91	0.25	0.00	0.00	0.00	0.00	66.02	0.28	0.00	0.00	0.00	0.00
66.08	0.29	0.00	0.00	0.00	0.00	66.15	0.28	0.00	0.00	0.00	0.00
66.24	0.27	0.00	0.00	0.00	0.00	66.30	0.27	0.00	0.00	0.00	0.00
66.37	0.27	0.00	0.00	0.00	0.00	66.41	0.26	0.00	0.00	0.00	0.00
66.54	0.26	0.00	0.00	0.00	0.00	66.59	0.26	0.00	0.00	0.00	0.00
66.64	0.36	0.00	0.00	0.00	0.00	66.69	0.61	0.00	0.00	0.00	0.00
66.76	2.00	0.00	0.00	0.00	0.00	66.81	2.00	0.00	0.00	0.00	0.00
66.87	2.00	0.00	0.00	0.00	0.00	66.93	2.00	0.00	0.00	0.00	0.00
67.02	2.00	0.00	0.00	0.00	0.00	67.07	2.00	0.00	0.00	0.00	0.00
67.14	2.00	0.00	0.00	0.00	0.00	67.20	2.00	0.00	0.00	0.00	0.00
67.28	2.00	0.00	0.00	0.00	0.00	67.38	2.00	0.00	0.00	0.00	0.00
67.39	2.00	0.00	0.00	0.00	0.00	67.47	2.00	0.00	0.00	0.00	0.00
67.56	2.00	0.00	0.00	0.00	0.00	67.60	2.00	0.00	0.00	0.00	0.00
67.66	2.00	0.00	0.00	0.00	0.00	67.73	2.00	0.00	0.00	0.00	0.00
67.82	2.00	0.00	0.00	0.00	0.00	67.87	2.00	0.00	0.00	0.00	0.00
67.95	2.00	0.00	0.00	0.00	0.00	68.04	2.00	0.00	0.00	0.00	0.00
68.08	2.00	0.00	0.00	0.00	0.00	68.13	2.00	0.00	0.00	0.00	0.00
68.22	2.00	0.00	0.00	0.00	0.00	68.26	2.00	0.00	0.00	0.00	0.00
68.35	2.00	0.00	0.00	0.00	0.00	68.39	2.00	0.00	0.00	0.00	0.00
68.49	2.00	0.00	0.00	0.00	0.00	68.53	2.00	0.00	0.00	0.00	0.00
68.61	2.00	0.00	0.00	0.00	0.00	68.66	2.00	0.00	0.00	0.00	0.00
68.70	2.00	0.00	0.00	0.00	0.00	68.77	2.00	0.00	0.00	0.00	0.00
68.87	2.00	0.00	0.00	0.00	0.00	68.92	2.00	0.00	0.00	0.00	0.00
68.96	2.00	0.00	0.00	0.00	0.00	69.05	2.00	0.00	0.00	0.00	0.00
69.11	2.00	0.00	0.00	0.00	0.00	69.18	2.00	0.00	0.00	0.00	0.00
69.27	2.00	0.00	0.00	0.00	0.00	69.30	1.48	0.00	0.00	0.00	0.00
69.37	1.17	0.00	0.00	0.00	0.00	69.42	0.85	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
69.51	0.61	0.00	0.00	0.00	0.00	69.59	0.51	0.00	0.00	0.00	0.00
69.63	0.44	0.00	0.00	0.00	0.00	69.71	0.39	0.00	0.00	0.00	0.00
69.77	0.37	0.00	0.00	0.00	0.00	69.83	0.36	0.00	0.00	0.00	0.00
69.90	0.37	0.00	0.00	0.00	0.00	69.95	0.38	0.00	0.00	0.00	0.00
70.03	0.43	0.00	0.00	0.00	0.00	70.09	0.50	0.00	0.00	0.00	0.00
70.16	0.50	0.00	0.00	0.00	0.00	70.23	0.50	0.00	0.00	0.00	0.00
70.28	0.49	0.00	0.00	0.00	0.00	70.39	0.53	0.00	0.00	0.00	0.00
70.43	0.59	0.00	0.00	0.00	0.00	70.51	0.67	0.00	0.00	0.00	0.00
70.54	0.80	0.00	0.00	0.00	0.00	70.62	1.26	0.00	0.00	0.00	0.00
70.70	2.00	0.00	0.00	0.00	0.00	70.74	2.00	0.00	0.00	0.00	0.00
70.82	2.00	0.00	0.00	0.00	0.00	70.87	2.00	0.00	0.00	0.00	0.00
70.96	2.00	0.00	0.00	0.00	0.00	71.00	2.00	0.00	0.00	0.00	0.00
71.08	2.00	0.00	0.00	0.00	0.00	71.13	2.00	0.00	0.00	0.00	0.00
71.22	2.00	0.00	0.00	0.00	0.00	71.26	2.00	0.00	0.00	0.00	0.00
71.35	2.00	0.00	0.00	0.00	0.00	71.40	2.00	0.00	0.00	0.00	0.00
71.48	2.00	0.00	0.00	0.00	0.00	71.56	2.00	0.00	0.00	0.00	0.00
71.62	2.00	0.00	0.00	0.00	0.00	71.66	2.00	0.00	0.00	0.00	0.00
71.76	2.00	0.00	0.00	0.00	0.00	71.84	2.00	0.00	0.00	0.00	0.00
71.88	2.00	0.00	0.00	0.00	0.00	71.94	2.00	0.00	0.00	0.00	0.00
71.99	2.00	0.00	0.00	0.00	0.00	72.07	2.00	0.00	0.00	0.00	0.00
72.15	2.00	0.00	0.00	0.00	0.00	72.22	1.03	0.00	0.00	0.00	0.00
72.28	1.03	0.00	0.00	0.00	0.00	72.33	1.11	0.00	0.00	0.00	0.00
72.38	1.32	0.00	0.00	0.00	0.00	72.46	1.81	0.00	0.00	0.00	0.00
72.54	2.00	0.00	0.00	0.00	0.00	72.59	1.21	0.00	0.00	0.00	0.00
72.64	1.85	0.00	0.00	0.00	0.00	72.71	0.68	0.00	0.00	0.00	0.00
72.81	2.00	0.00	0.00	0.00	0.00	72.85	2.00	0.00	0.00	0.00	0.00
72.93	2.00	0.00	0.00	0.00	0.00	72.99	2.00	0.00	0.00	0.00	0.00
73.03	2.00	0.00	0.00	0.00	0.00	73.12	2.00	0.00	0.00	0.00	0.00
73.18	2.00	0.00	0.00	0.00	0.00	73.25	2.00	0.00	0.00	0.00	0.00
73.31	2.00	0.00	0.00	0.00	0.00	73.38	2.00	0.00	0.00	0.00	0.00
73.44	2.00	0.00	0.00	0.00	0.00	73.51	2.00	0.00	0.00	0.00	0.00
73.56	2.00	0.00	0.00	0.00	0.00	73.64	2.00	0.00	0.00	0.00	0.00
73.69	2.00	0.00	0.00	0.00	0.00	73.78	2.00	0.00	0.00	0.00	0.00
73.82	2.00	0.00	0.00	0.00	0.00	73.90	2.00	0.00	0.00	0.00	0.00
73.96	2.00	0.00	0.00	0.00	0.00	74.05	2.00	0.00	0.00	0.00	0.00
74.09	2.00	0.00	0.00	0.00	0.00	74.18	2.00	0.00	0.00	0.00	0.00
74.22	2.00	0.00	0.00	0.00	0.00	74.31	2.00	0.00	0.00	0.00	0.00
74.36	2.00	0.00	0.00	0.00	0.00	74.49	2.00	0.00	0.00	0.00	0.00
74.55	2.00	0.00	0.00	0.00	0.00	74.57	2.00	0.00	0.00	0.00	0.00
74.61	2.00	0.00	0.00	0.00	0.00	74.70	2.00	0.00	0.00	0.00	0.00
74.75	2.00	0.00	0.00	0.00	0.00	74.84	2.00	0.00	0.00	0.00	0.00
74.88	2.00	0.00	0.00	0.00	0.00	74.94	2.00	0.00	0.00	0.00	0.00
75.01	2.00	0.00	0.00	0.00	0.00	75.10	2.00	0.00	0.00	0.00	0.00
75.15	2.00	0.00	0.00	0.00	0.00	75.23	2.00	0.00	0.00	0.00	0.00
75.27	2.00	0.00	0.00	0.00	0.00	75.33	2.00	0.00	0.00	0.00	0.00
75.40	2.00	0.00	0.00	0.00	0.00	75.50	2.00	0.00	0.00	0.00	0.00
75.56	2.00	0.00	0.00	0.00	0.00	75.63	2.00	0.00	0.00	0.00	0.00
75.67	2.00	0.00	0.00	0.00	0.00	75.76	2.00	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
75.79	2.00	0.00	0.00	0.00	0.00	75.89	2.00	0.00	0.00	0.00	0.00
75.93	2.00	0.00	0.00	0.00	0.00	76.02	2.00	0.00	0.00	0.00	0.00
76.06	2.00	0.00	0.00	0.00	0.00	76.16	2.00	0.00	0.00	0.00	0.00
76.19	2.00	0.00	0.00	0.00	0.00	76.29	1.95	0.00	0.00	0.00	0.00
76.33	1.78	0.00	0.00	0.00	0.00	76.38	1.42	0.00	0.00	0.00	0.00
76.46	1.23	0.00	0.00	0.00	0.00	76.51	1.16	0.00	0.00	0.00	0.00
76.60	1.11	0.00	0.00	0.00	0.00	76.65	1.02	0.00	0.00	0.00	0.00
76.73	0.92	0.00	0.00	0.00	0.00	76.79	0.79	0.00	0.00	0.00	0.00
76.86	0.74	0.00	0.00	0.00	0.00	76.91	0.73	0.00	0.00	0.00	0.00
76.99	0.68	0.00	0.00	0.00	0.00	77.08	0.61	0.00	0.00	0.00	0.00
77.12	0.56	0.00	0.00	0.00	0.00	77.22	0.49	0.00	0.00	0.00	0.00
77.26	0.47	0.00	0.00	0.00	0.00	77.30	0.45	0.00	0.00	0.00	0.00
77.39	0.42	0.00	0.00	0.00	0.00	77.45	0.41	0.00	0.00	0.00	0.00
77.52	0.38	0.00	0.00	0.00	0.00	77.56	0.37	0.00	0.00	0.00	0.00
77.63	0.35	0.00	0.00	0.00	0.00	77.71	0.33	0.00	0.00	0.00	0.00
77.77	0.28	0.00	0.00	0.00	0.00	77.82	0.29	0.00	0.00	0.00	0.00
77.92	0.29	0.00	0.00	0.00	0.00	77.97	0.29	0.00	0.00	0.00	0.00
78.05	0.28	0.00	0.00	0.00	0.00	78.10	0.27	0.00	0.00	0.00	0.00
78.16	0.27	0.00	0.00	0.00	0.00	78.23	0.26	0.00	0.00	0.00	0.00
78.32	0.25	0.00	0.00	0.00	0.00	78.36	0.25	0.00	0.00	0.00	0.00
78.45	0.23	0.00	0.00	0.00	0.00	78.49	0.22	0.00	0.00	0.00	0.00
78.57	0.22	0.00	0.00	0.00	0.00	78.62	0.21	0.00	0.00	0.00	0.00
78.75	0.20	0.00	0.00	0.00	0.00	78.79	0.20	0.00	0.00	0.00	0.00
78.82	0.20	0.00	0.00	0.00	0.00	78.90	0.19	0.00	0.00	0.00	0.00
78.95	0.19	0.00	0.00	0.00	0.00	79.05	0.19	0.00	0.00	0.00	0.00
79.08	0.18	0.00	0.00	0.00	0.00	79.15	0.18	0.00	0.00	0.00	0.00
79.24	0.17	0.00	0.00	0.00	0.00	79.28	0.17	0.00	0.00	0.00	0.00
79.38	0.17	0.00	0.00	0.00	0.00	79.44	0.16	0.00	0.00	0.00	0.00
79.49	0.16	0.00	0.00	0.00	0.00	79.54	0.16	0.00	0.00	0.00	0.00
79.63	2.00	0.00	0.00	0.00	0.00	79.68	2.00	0.00	0.00	0.00	0.00
79.77	2.00	0.00	0.00	0.00	0.00	79.82	2.00	0.00	0.00	0.00	0.00
79.87	2.00	0.00	0.00	0.00	0.00	80.01	2.00	0.00	0.00	0.00	0.00
80.08	2.00	0.00	0.00	0.00	0.00	80.12	2.00	0.00	0.00	0.00	0.00
80.17	2.00	0.00	0.00	0.00	0.00	80.21	2.00	0.00	0.00	0.00	0.00
80.26	0.57	0.00	0.00	0.00	0.00	80.36	0.51	0.00	0.00	0.00	0.00
80.41	0.44	0.00	0.00	0.00	0.00	80.45	0.42	0.00	0.00	0.00	0.00
80.51	0.42	0.00	0.00	0.00	0.00	80.60	0.43	0.00	0.00	0.00	0.00
80.65	2.00	0.00	0.00	0.00	0.00	80.75	2.00	0.00	0.00	0.00	0.00
80.87	2.00	0.00	0.00	0.00	0.00	80.91	2.00	0.00	0.00	0.00	0.00
80.97	2.00	0.00	0.00	0.00	0.00	81.09	2.00	0.00	0.00	0.00	0.00
81.14	2.00	0.00	0.00	0.00	0.00	81.18	2.00	0.00	0.00	0.00	0.00
81.24	2.00	0.00	0.00	0.00	0.00	81.33	0.52	0.00	0.00	0.00	0.00
81.39	0.44	0.00	0.00	0.00	0.00	81.44	0.41	0.00	0.00	0.00	0.00
81.52	0.39	0.00	0.00	0.00	0.00	81.57	0.39	0.00	0.00	0.00	0.00
81.65	0.37	0.00	0.00	0.00	0.00	81.71	0.35	0.00	0.00	0.00	0.00
81.79	0.33	0.00	0.00	0.00	0.00	81.88	0.32	0.00	0.00	0.00	0.00
81.91	0.31	0.00	0.00	0.00	0.00	82.02	0.31	0.00	0.00	0.00	0.00
82.03	0.31	0.00	0.00	0.00	0.00	82.11	0.32	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
82.19	0.33	0.00	0.00	0.00	0.00	82.24	0.33	0.00	0.00	0.00	0.00
82.30	0.35	0.00	0.00	0.00	0.00	82.41	0.38	0.00	0.00	0.00	0.00
82.45	0.41	0.00	0.00	0.00	0.00	82.50	0.41	0.00	0.00	0.00	0.00
82.58	0.42	0.00	0.00	0.00	0.00	82.63	0.41	0.00	0.00	0.00	0.00
82.72	0.41	0.00	0.00	0.00	0.00	82.76	0.45	0.00	0.00	0.00	0.00
82.85	0.49	0.00	0.00	0.00	0.00	82.90	0.54	0.00	0.00	0.00	0.00
82.98	0.53	0.00	0.00	0.00	0.00	83.03	0.50	0.00	0.00	0.00	0.00
83.09	0.46	0.00	0.00	0.00	0.00	83.17	0.43	0.00	0.00	0.00	0.00
83.20	0.43	0.00	0.00	0.00	0.00	83.29	0.45	0.00	0.00	0.00	0.00
83.36	0.46	0.00	0.00	0.00	0.00	83.43	0.47	0.00	0.00	0.00	0.00
83.48	0.45	0.00	0.00	0.00	0.00	83.60	0.45	0.00	0.00	0.00	0.00
83.65	0.47	0.00	0.00	0.00	0.00	83.71	0.55	0.00	0.00	0.00	0.00
83.77	2.00	0.00	0.00	0.00	0.00	83.82	2.00	0.00	0.00	0.00	0.00
83.87	2.00	0.00	0.00	0.00	0.00	83.99	2.00	0.00	0.00	0.00	0.00
84.04	2.00	0.00	0.00	0.00	0.00	84.08	2.00	0.00	0.00	0.00	0.00
84.13	2.00	0.00	0.00	0.00	0.00	84.21	2.00	0.00	0.00	0.00	0.00
84.26	2.00	0.00	0.00	0.00	0.00	84.35	0.35	0.00	0.00	0.00	0.00
84.39	0.37	0.00	0.00	0.00	0.00	84.46	0.35	0.00	0.00	0.00	0.00
84.52	0.31	0.00	0.00	0.00	0.00	84.61	0.26	0.00	0.00	0.00	0.00
84.65	0.29	0.00	0.00	0.00	0.00	84.74	0.28	0.00	0.00	0.00	0.00
84.79	0.34	0.00	0.00	0.00	0.00	84.87	0.32	0.00	0.00	0.00	0.00
84.92	0.39	0.00	0.00	0.00	0.00	85.01	0.31	0.00	0.00	0.00	0.00
85.06	0.34	0.00	0.00	0.00	0.00	85.14	0.32	0.00	0.00	0.00	0.00
85.19	0.31	0.00	0.00	0.00	0.00	85.28	0.30	0.00	0.00	0.00	0.00
85.31	0.29	0.00	0.00	0.00	0.00	85.41	0.28	0.00	0.00	0.00	0.00
85.45	0.27	0.00	0.00	0.00	0.00	85.54	0.28	0.00	0.00	0.00	0.00
85.62	0.30	0.00	0.00	0.00	0.00	85.64	0.30	0.00	0.00	0.00	0.00
85.72	0.33	0.00	0.00	0.00	0.00	85.77	0.34	0.00	0.00	0.00	0.00
85.84	0.35	0.00	0.00	0.00	0.00	85.94	0.37	0.00	0.00	0.00	0.00
85.98	0.38	0.00	0.00	0.00	0.00	86.07	0.44	0.00	0.00	0.00	0.00
86.11	0.45	0.00	0.00	0.00	0.00	86.18	0.52	0.00	0.00	0.00	0.00
86.26	0.58	0.00	0.00	0.00	0.00	86.31	0.60	0.00	0.00	0.00	0.00
86.38	0.61	0.00	0.00	0.00	0.00	86.42	0.66	0.00	0.00	0.00	0.00
86.51	0.67	0.00	0.00	0.00	0.00	86.55	0.73	0.00	0.00	0.00	0.00
86.63	0.82	0.00	0.00	0.00	0.00	86.68	0.82	0.00	0.00	0.00	0.00
86.77	0.94	0.00	0.00	0.00	0.00	86.87	1.10	0.00	0.00	0.00	0.00
86.98	1.46	0.00	0.00	0.00	0.00	87.03	1.31	0.00	0.00	0.00	0.00
87.08	1.68	0.00	0.00	0.00	0.00	87.15	1.68	0.00	0.00	0.00	0.00
87.23	1.70	0.00	0.00	0.00	0.00	87.29	1.50	0.00	0.00	0.00	0.00
87.34	1.25	0.00	0.00	0.00	0.00	87.43	1.28	0.00	0.00	0.00	0.00
87.48	1.02	0.00	0.00	0.00	0.00	87.57	0.70	0.00	0.00	0.00	0.00
87.61	0.48	0.00	0.00	0.00	0.00	87.69	0.34	0.00	0.00	0.00	0.00
87.74	0.25	0.00	0.00	0.00	0.00	87.82	0.22	0.00	0.00	0.00	0.00
87.86	0.21	0.00	0.00	0.00	0.00	87.96	0.20	0.00	0.00	0.00	0.00
88.01	0.22	0.00	0.00	0.00	0.00	88.09	0.22	0.00	0.00	0.00	0.00
88.14	0.21	0.00	0.00	0.00	0.00	88.22	0.21	0.00	0.00	0.00	0.00
88.27	0.21	0.00	0.00	0.00	0.00	88.36	0.22	0.00	0.00	0.00	0.00
88.40	0.22	0.00	0.00	0.00	0.00	88.48	0.21	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
88.53	0.20	0.00	0.00	0.00	0.00	88.61	0.19	0.00	0.00	0.00	0.00
88.67	0.18	0.00	0.00	0.00	0.00	88.75	2.00	0.00	0.00	0.00	0.00
88.79	2.00	0.00	0.00	0.00	0.00	88.91	2.00	0.00	0.00	0.00	0.00
88.94	2.00	0.00	0.00	0.00	0.00	89.01	2.00	0.00	0.00	0.00	0.00
89.06	2.00	0.00	0.00	0.00	0.00	89.13	2.00	0.00	0.00	0.00	0.00
89.19	2.00	0.00	0.00	0.00	0.00	89.28	2.00	0.00	0.00	0.00	0.00
89.32	2.00	0.00	0.00	0.00	0.00	89.40	2.00	0.00	0.00	0.00	0.00
89.44	2.00	0.00	0.00	0.00	0.00	89.53	2.00	0.00	0.00	0.00	0.00
89.57	0.56	0.00	0.00	0.00	0.00	89.66	0.52	0.00	0.00	0.00	0.00
89.71	2.00	0.00	0.00	0.00	0.00	89.79	2.00	0.00	0.00	0.00	0.00
89.84	2.00	0.00	0.00	0.00	0.00	89.97	2.00	0.00	0.00	0.00	0.00
90.00	2.00	0.00	0.00	0.00	0.00	90.03	2.00	0.00	0.00	0.00	0.00
90.10	2.00	0.00	0.00	0.00	0.00	90.18	2.00	0.00	0.00	0.00	0.00
90.24	2.00	0.00	0.00	0.00	0.00	90.32	2.00	0.00	0.00	0.00	0.00
90.36	2.00	0.00	0.00	0.00	0.00	90.50	2.00	0.00	0.00	0.00	0.00
90.54	2.00	0.00	0.00	0.00	0.00	90.58	2.00	0.00	0.00	0.00	0.00
90.63	2.00	0.00	0.00	0.00	0.00	90.71	2.00	0.00	0.00	0.00	0.00
90.76	2.00	0.00	0.00	0.00	0.00	90.85	2.00	0.00	0.00	0.00	0.00
90.89	2.00	0.00	0.00	0.00	0.00	90.98	2.00	0.00	0.00	0.00	0.00
91.02	2.00	0.00	0.00	0.00	0.00	91.13	2.00	0.00	0.00	0.00	0.00
91.22	2.00	0.00	0.00	0.00	0.00	91.25	2.00	0.00	0.00	0.00	0.00
91.30	2.00	0.00	0.00	0.00	0.00	91.37	2.00	0.00	0.00	0.00	0.00
91.46	2.00	0.00	0.00	0.00	0.00	91.51	2.00	0.00	0.00	0.00	0.00
91.55	2.00	0.00	0.00	0.00	0.00	91.63	2.00	0.00	0.00	0.00	0.00
91.68	2.00	0.00	0.00	0.00	0.00	91.77	0.17	0.00	0.00	0.00	0.00
91.81	0.16	0.00	0.00	0.00	0.00	91.90	2.00	0.00	0.00	0.00	0.00
91.95	2.00	0.00	0.00	0.00	0.00	92.05	2.00	0.00	0.00	0.00	0.00
92.12	2.00	0.00	0.00	0.00	0.00	92.17	2.00	0.00	0.00	0.00	0.00
92.21	2.00	0.00	0.00	0.00	0.00	92.30	2.00	0.00	0.00	0.00	0.00
92.34	2.00	0.00	0.00	0.00	0.00	92.41	2.00	0.00	0.00	0.00	0.00
92.48	2.00	0.00	0.00	0.00	0.00	92.53	2.00	0.00	0.00	0.00	0.00
92.60	2.00	0.00	0.00	0.00	0.00	92.72	2.00	0.00	0.00	0.00	0.00
92.74	2.00	0.00	0.00	0.00	0.00	92.81	0.62	0.00	0.00	0.00	0.00
92.86	0.61	0.00	0.00	0.00	0.00	92.92	0.60	0.00	0.00	0.00	0.00
93.00	0.57	0.00	0.00	0.00	0.00	93.08	2.00	0.00	0.00	0.00	0.00
93.13	2.00	0.00	0.00	0.00	0.00	93.26	2.00	0.00	0.00	0.00	0.00
93.30	2.00	0.00	0.00	0.00	0.00	93.39	2.00	0.00	0.00	0.00	0.00
93.48	2.00	0.00	0.00	0.00	0.00	93.53	2.00	0.00	0.00	0.00	0.00
93.58	2.00	0.00	0.00	0.00	0.00	93.66	2.00	0.00	0.00	0.00	0.00
93.70	2.00	0.00	0.00	0.00	0.00	93.79	2.00	0.00	0.00	0.00	0.00
93.87	2.00	0.00	0.00	0.00	0.00	93.92	2.00	0.00	0.00	0.00	0.00
93.97	0.46	0.00	0.00	0.00	0.00	94.04	0.39	0.00	0.00	0.00	0.00
94.14	0.38	0.00	0.00	0.00	0.00	94.16	0.40	0.00	0.00	0.00	0.00
94.23	0.36	0.00	0.00	0.00	0.00	94.36	0.30	0.00	0.00	0.00	0.00
94.40	0.23	0.00	0.00	0.00	0.00	94.45	0.21	0.00	0.00	0.00	0.00
94.50	0.19	0.00	0.00	0.00	0.00	94.58	0.18	0.00	0.00	0.00	0.00
94.62	0.20	0.00	0.00	0.00	0.00	94.71	0.24	0.00	0.00	0.00	0.00
94.75	0.28	0.00	0.00	0.00	0.00	94.90	0.30	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
94.94	0.31	0.00	0.00	0.00	0.00	94.98	0.31	0.00	0.00	0.00	0.00
95.03	0.31	0.00	0.00	0.00	0.00	95.11	0.31	0.00	0.00	0.00	0.00
95.15	0.30	0.00	0.00	0.00	0.00	95.24	0.29	0.00	0.00	0.00	0.00
95.29	0.27	0.00	0.00	0.00	0.00	95.38	0.25	0.00	0.00	0.00	0.00
95.42	0.24	0.00	0.00	0.00	0.00	95.51	0.23	0.00	0.00	0.00	0.00
95.55	0.24	0.00	0.00	0.00	0.00	95.65	0.25	0.00	0.00	0.00	0.00
95.68	0.27	0.00	0.00	0.00	0.00	95.74	0.31	0.00	0.00	0.00	0.00
95.82	0.35	0.00	0.00	0.00	0.00	95.87	0.39	0.00	0.00	0.00	0.00
95.94	0.42	0.00	0.00	0.00	0.00	96.00	0.46	0.00	0.00	0.00	0.00
96.07	0.50	0.00	0.00	0.00	0.00	96.14	2.00	0.00	0.00	0.00	0.00
96.22	2.00	0.00	0.00	0.00	0.00	96.28	2.00	0.00	0.00	0.00	0.00
96.36	2.00	0.00	0.00	0.00	0.00	96.39	2.00	0.00	0.00	0.00	0.00
96.49	2.00	0.00	0.00	0.00	0.00	96.53	2.00	0.00	0.00	0.00	0.00
96.60	2.00	0.00	0.00	0.00	0.00	96.66	2.00	0.00	0.00	0.00	0.00
96.74	2.00	0.00	0.00	0.00	0.00	96.80	2.00	0.00	0.00	0.00	0.00
96.87	2.00	0.00	0.00	0.00	0.00	96.93	2.00	0.00	0.00	0.00	0.00
97.02	2.00	0.00	0.00	0.00	0.00	97.06	2.00	0.00	0.00	0.00	0.00
97.13	2.00	0.00	0.00	0.00	0.00	97.19	2.00	0.00	0.00	0.00	0.00
97.28	2.00	0.00	0.00	0.00	0.00	97.32	2.00	0.00	0.00	0.00	0.00
97.39	2.00	0.00	0.00	0.00	0.00	97.46	2.00	0.00	0.00	0.00	0.00
97.54	2.00	0.00	0.00	0.00	0.00	97.59	2.00	0.00	0.00	0.00	0.00
97.65	2.00	0.00	0.00	0.00	0.00	97.72	2.00	0.00	0.00	0.00	0.00
97.78	2.00	0.00	0.00	0.00	0.00	97.85	2.00	0.00	0.00	0.00	0.00
97.92	2.00	0.00	0.00	0.00	0.00	97.97	2.00	0.00	0.00	0.00	0.00
98.07	2.00	0.00	0.00	0.00	0.00	98.11	2.00	0.00	0.00	0.00	0.00
98.20	2.00	0.00	0.00	0.00	0.00	98.25	2.00	0.00	0.00	0.00	0.00
98.32	2.00	0.00	0.00	0.00	0.00	98.39	2.00	0.00	0.00	0.00	0.00
98.47	2.00	0.00	0.00	0.00	0.00	98.51	2.00	0.00	0.00	0.00	0.00
98.60	2.00	0.00	0.00	0.00	0.00	98.64	2.00	0.00	0.00	0.00	0.00
98.70	2.00	0.00	0.00	0.00	0.00	98.82	2.00	0.00	0.00	0.00	0.00
98.85	2.00	0.00	0.00	0.00	0.00	98.90	2.00	0.00	0.00	0.00	0.00
98.98	2.00	0.00	0.00	0.00	0.00	99.05	2.00	0.00	0.00	0.00	0.00
99.12	2.00	0.00	0.00	0.00	0.00	99.16	2.00	0.00	0.00	0.00	0.00
99.27	2.00	0.00	0.00	0.00	0.00	99.34	2.00	0.00	0.00	0.00	0.00
99.39	2.00	0.00	0.00	0.00	0.00	99.43	2.00	0.00	0.00	0.00	0.00
99.50	2.00	0.00	0.00	0.00	0.00	99.56	2.00	0.00	0.00	0.00	0.00
99.67	2.00	0.00	0.00	0.00	0.00	99.74	2.00	0.00	0.00	0.00	0.00
99.78	2.00	0.00	0.00	0.00	0.00	99.85	2.00	0.00	0.00	0.00	0.00
99.91	2.00	0.00	0.00	0.00	0.00	99.96	2.00	0.00	0.00	0.00	0.00
100.01	2.00	0.00	0.00	0.00	0.00	100.09	2.00	0.00	0.00	0.00	0.00
100.15	2.00	0.00	0.00	0.00	0.00	100.22	2.00	0.00	0.00	0.00	0.00
100.31	2.00	0.00	0.00	0.00	0.00	100.35	2.00	0.00	0.00	0.00	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI

Overall liquefaction potential: 18.75

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

:: Post-earthquake settlement of dry sands ::

Depth (ft)	Ic	Q_{tn}	K_c	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vd(15)}$ (%)	N_c	e_v (%)	Settle. (in)
0.09	3.47	10.73	13.49	144.65	0	0	0.59	0.000	0.00	0.00	0.00	0.000
0.15	1.72	200.35	1.05	210.34	39	840	0.60	0.001	0.00	13.34	0.00	0.000
0.20	1.35	406.95	1.00	406.95	68	1076	0.55	0.001	0.00	13.34	0.00	0.000
0.27	1.21	562.42	1.00	562.42	90	1235	0.55	0.001	0.00	13.34	0.00	0.000
0.33	1.35	478.82	1.00	478.82	80	1258	0.55	0.001	0.00	13.34	0.00	0.000
0.42	1.53	372.95	1.00	372.95	66	1226	0.55	0.001	0.00	13.34	0.00	0.000
0.46	1.67	307.37	1.02	312.03	58	1208	0.55	0.001	0.00	13.34	0.00	0.000
0.53	1.71	297.08	1.04	309.65	58	1228	0.55	0.002	0.00	13.34	0.00	0.000
0.64	1.74	289.25	1.06	307.39	58	1242	0.55	0.002	0.00	13.34	0.00	0.000
0.68	1.77	278.74	1.08	302.24	58	1246	0.55	0.002	0.00	13.34	0.00	0.000
0.73	1.77	261.80	1.08	283.65	54	1169	0.55	0.002	0.00	13.34	0.00	0.000
0.81	1.76	241.77	1.08	261.08	50	1072	0.55	0.003	0.00	13.34	0.00	0.000
0.86	1.76	213.53	1.08	230.01	44	942	0.55	0.004	0.00	13.34	0.00	0.000
0.95	1.80	189.32	1.10	209.01	40	877	0.57	0.004	0.00	13.34	0.00	0.000
0.99	1.87	156.55	1.16	182.00	36	797	0.57	0.005	0.00	13.34	0.00	0.000
1.08	1.94	132.33	1.23	162.89	33	737	0.58	0.007	0.00	13.34	0.00	0.000
1.12	2.02	109.09	1.33	145.02	30	672	0.58	0.008	0.00	13.34	0.00	0.000
1.21	2.06	97.78	1.39	136.20	29	635	0.58	0.010	0.01	13.34	0.01	0.000
1.25	2.12	86.53	1.49	128.95	28	603	0.58	0.011	0.01	13.34	0.01	0.000
1.34	2.17	78.71	1.59	125.54	28	585	0.58	0.013	0.01	13.34	0.01	0.000
1.39	2.21	71.48	1.70	121.62	28	562	0.58	0.015	0.01	13.34	0.01	0.000
1.47	2.24	66.65	1.76	117.31	27	539	0.59	0.018	0.01	13.34	0.01	0.000
1.53	2.23	63.50	1.75	111.34	25	512	0.59	0.022	0.02	13.34	0.02	0.000
1.60	2.21	62.29	1.70	106.12	24	490	0.59	0.026	0.02	13.34	0.02	0.000
1.65	2.19	61.54	1.63	100.46	23	467	0.59	0.032	0.03	13.34	0.03	0.000
1.74	2.17	60.44	1.59	96.09	21	448	0.59	0.039	0.04	13.34	0.03	0.001
1.78	2.15	58.42	1.55	90.76	20	424	0.59	0.050	0.05	13.34	0.05	0.000
1.87	2.14	56.17	1.53	85.84	19	401	0.59	0.067	0.07	13.34	0.07	0.001
1.93	2.12	53.97	1.50	80.81	18	378	0.59	0.090	0.11	13.34	0.10	0.001
1.99	2.11	52.42	1.48	77.51	17	362	0.59	0.115	0.14	13.34	0.13	0.002
2.04	2.11	51.56	1.47	75.86	16	355	0.59	0.135	0.17	13.34	0.16	0.002
2.13	2.11	51.38	1.47	75.33	16	352	0.59	0.152	0.19	13.34	0.18	0.004
2.18	2.10	52.29	1.45	75.87	16	355	0.59	0.155	0.20	13.34	0.18	0.002
2.24	2.08	54.35	1.42	77.27	17	361	0.59	0.153	0.19	13.34	0.17	0.003
2.31	2.07	56.87	1.40	79.35	17	370	0.59	0.145	0.18	13.34	0.16	0.003
2.40	2.06	58.87	1.38	81.27	17	379	0.59	0.143	0.17	13.34	0.15	0.003
2.44	2.06	60.24	1.38	83.22	18	388	0.59	0.133	0.15	13.34	0.14	0.001
2.52	2.06	61.32	1.39	85.11	18	397	0.59	0.129	0.14	13.34	0.13	0.002
2.57	2.06	63.10	1.39	87.53	19	408	0.59	0.120	0.13	13.34	0.12	0.002
2.63	2.06	65.21	1.38	89.95	19	419	0.59	0.112	0.12	13.34	0.11	0.001
2.70	2.04	68.65	1.36	93.02	20	432	0.59	0.104	0.11	13.34	0.10	0.002
2.79	2.02	72.31	1.33	96.34	20	447	0.59	0.098	0.10	13.34	0.09	0.002
2.87	2.01	75.98	1.31	99.68	21	461	0.59	0.092	0.09	13.34	0.08	0.001
2.92	2.00	78.72	1.30	102.30	21	472	0.59	0.087	0.08	13.34	0.07	0.001
2.96	1.99	81.64	1.29	105.00	22	483	0.59	0.082	0.07	13.34	0.07	0.001
3.06	1.98	84.03	1.28	107.18	22	491	0.59	0.082	0.07	13.34	0.07	0.002
3.09	1.98	86.50	1.27	109.90	23	503	0.59	0.077	0.07	13.34	0.06	0.000
3.15	1.98	87.99	1.27	111.75	23	512	0.59	0.075	0.06	13.34	0.06	0.001

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	K_c	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vd(15)}$ (%)	N_c	e_v (%)	Settle. (in)
3.23	1.98	89.30	1.27	113.76	23	521	0.58	0.074	0.06	13.34	0.05	0.001
3.29	1.98	89.93	1.28	114.95	24	527	0.58	0.073	0.06	13.34	0.05	0.001
3.35	1.99	89.68	1.29	115.70	24	532	0.58	0.074	0.06	13.34	0.05	0.001
3.45	2.00	88.81	1.30	115.73	24	534	0.58	0.077	0.06	13.34	0.06	0.001
3.50	2.02	86.74	1.32	114.87	24	532	0.58	0.081	0.06	13.34	0.06	0.001
3.58	2.03	84.49	1.35	113.76	24	528	0.58	0.087	0.07	13.34	0.06	0.001
3.62	2.06	81.27	1.38	112.12	24	523	0.58	0.093	0.07	13.34	0.07	0.001
3.71	2.08	78.40	1.41	110.87	24	518	0.58	0.101	0.08	13.34	0.07	0.002
3.75	2.11	74.72	1.47	109.99	24	514	0.58	0.106	0.09	13.34	0.08	0.001
3.84	2.15	70.87	1.55	109.72	24	512	0.58	0.113	0.09	13.34	0.08	0.002
3.90	2.19	66.73	1.64	109.73	25	509	0.58	0.120	0.09	13.34	0.08	0.001
3.96	2.23	62.01	1.76	108.89	25	500	0.58	0.133	0.10	13.34	0.09	0.001
4.05	2.27	58.39	1.84	107.68	25	490	0.59	0.152	0.12	13.34	0.10	0.002
4.08	2.28	55.28	1.89	104.64	24	474	0.59	0.180	0.14	13.34	0.13	0.001
4.21	2.27	54.80	1.85	101.19	23	460	0.59	0.221	0.18	13.34	0.16	0.005
4.25	2.20	55.82	1.66	92.79	21	430	0.59	0.317	0.30	13.34	0.26	0.003
4.29	2.11	58.28	1.47	85.41	19	399	0.59	0.480	0.53	13.34	0.46	0.005
4.33	2.00	61.96	1.30	80.73	17	372	0.59	0.736	0.91	13.34	0.80	0.007
4.43	1.96	65.63	1.25	81.84	17	372	0.59	0.782	0.97	13.34	0.85	0.019
4.47	1.94	69.48	1.22	85.09	17	384	0.59	0.669	0.80	13.34	0.70	0.007
4.56	1.93	71.56	1.22	87.41	18	394	0.59	0.607	0.70	13.34	0.61	0.013
4.60	1.93	72.88	1.22	89.16	18	402	0.59	0.555	0.63	13.34	0.55	0.006
4.66	1.95	73.62	1.24	91.51	19	416	0.59	0.478	0.52	13.34	0.45	0.007
4.74	1.98	74.45	1.28	94.98	20	436	0.59	0.389	0.40	13.34	0.35	0.007
4.83	2.01	75.07	1.32	99.00	21	458	0.58	0.316	0.30	13.34	0.26	0.006
4.87	2.05	74.37	1.37	101.94	22	475	0.58	0.271	0.25	13.34	0.21	0.002
4.96	2.08	72.86	1.43	103.95	22	486	0.58	0.254	0.22	13.34	0.19	0.004
5.01	2.12	70.90	1.49	105.83	23	495	0.58	0.238	0.20	13.34	0.17	0.002
5.06	2.14	70.21	1.53	107.48	24	502	0.58	0.228	0.19	13.34	0.16	0.002
5.16	2.15	69.57	1.55	108.07	24	504	0.58	0.234	0.19	13.34	0.16	0.004
5.22	2.15	70.02	1.54	108.05	24	504	0.58	0.241	0.20	13.34	0.17	0.003
5.26	2.14	70.30	1.53	107.41	24	502	0.58	0.251	0.21	13.34	0.18	0.002
5.32	2.11	72.64	1.48	107.41	23	502	0.58	0.257	0.21	13.34	0.18	0.002
5.41	2.08	75.67	1.42	107.50	23	502	0.58	0.268	0.23	13.34	0.19	0.004
5.45	2.03	80.77	1.34	107.95	23	501	0.58	0.277	0.24	13.34	0.20	0.002
5.53	1.97	85.70	1.27	108.56	22	497	0.58	0.299	0.26	13.34	0.23	0.005
5.60	1.92	90.80	1.21	110.03	22	494	0.58	0.316	0.28	13.34	0.24	0.004
5.65	1.89	95.18	1.18	112.06	22	497	0.58	0.314	0.27	13.34	0.24	0.003
5.76	1.87	97.57	1.16	113.11	22	506	0.58	0.301	0.26	13.34	0.23	0.006
5.79	1.85	99.99	1.14	114.48	23	513	0.58	0.287	0.25	13.34	0.21	0.002
5.84	1.84	101.82	1.13	115.52	23	519	0.58	0.277	0.24	13.34	0.20	0.002
5.94	1.83	103.18	1.13	116.21	23	526	0.58	0.271	0.23	13.34	0.20	0.005
6.00	1.82	104.65	1.12	117.18	23	533	0.58	0.261	0.22	13.34	0.19	0.003
6.06	1.81	105.72	1.12	118.06	23	540	0.58	0.252	0.21	13.34	0.18	0.003
6.11	1.81	107.06	1.11	119.14	23	547	0.58	0.243	0.20	13.34	0.17	0.002
6.22	1.81	107.47	1.11	119.36	23	553	0.58	0.241	0.20	13.34	0.17	0.005
6.28	1.80	108.00	1.11	119.65	23	557	0.58	0.239	0.20	13.34	0.17	0.002
6.33	1.80	108.17	1.11	120.03	23	561	0.58	0.236	0.20	13.34	0.17	0.002

:: Post-earthquake settlement of dry sands :: (continued)

Depth (ft)	Ic	Q_{tn}	K_c	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vd(15)}$ (%)	N_c	e_v (%)	Settle. (in)
6.38	1.81	108.12	1.11	120.41	23	566	0.58	0.231	0.19	13.34	0.16	0.002
6.45	1.82	107.86	1.12	120.72	23	571	0.58	0.227	0.19	13.34	0.16	0.003
6.50	1.82	107.69	1.12	120.99	24	575	0.58	0.224	0.18	13.34	0.15	0.002
6.61	1.83	107.16	1.13	120.80	24	580	0.58	0.224	0.18	13.34	0.15	0.004
6.68	1.83	107.09	1.13	120.88	24	584	0.58	0.223	0.18	13.34	0.15	0.003
6.72	1.83	107.41	1.13	121.23	24	588	0.58	0.220	0.18	13.34	0.15	0.002
6.77	1.83	107.87	1.13	121.76	24	593	0.58	0.216	0.18	13.34	0.15	0.002
6.83	1.83	108.24	1.13	122.22	24	598	0.58	0.212	0.17	13.34	0.14	0.002
6.90	1.83	108.04	1.13	122.16	24	602	0.58	0.212	0.17	13.34	0.14	0.002
7.00	1.84	107.15	1.13	121.47	24	603	0.58	0.216	0.18	13.34	0.15	0.003
7.07	1.84	105.86	1.14	120.53	24	603	0.58	0.222	0.18	13.34	0.15	0.003
7.12	1.85	104.49	1.14	119.54	24	601	0.58	0.229	0.19	13.34	0.16	0.002
7.16	1.86	102.78	1.15	118.19	23	597	0.58	0.239	0.20	13.34	0.17	0.002
7.23	1.86	100.73	1.16	116.49	23	592	0.58	0.253	0.21	13.34	0.18	0.003
7.29	1.85	97.00	1.14	110.74	22	564	0.58	0.324	0.29	13.34	0.24	0.004
7.41	1.83	92.91	1.13	104.98	21	537	0.59	0.426	0.41	13.34	0.34	0.009
7.47	1.82	88.90	1.12	99.61	19	511	0.59	0.567	0.59	13.34	0.49	0.007
7.52	1.85	86.57	1.14	98.88	19	512	0.59	0.569	0.59	13.34	0.49	0.005
7.57	1.88	84.14	1.17	98.21	20	514	0.59	0.571	0.59	13.34	0.49	0.007
7.65	1.92	80.15	1.20	96.54	19	511	0.58	0.604	0.62	13.34	0.52	0.009
7.69	1.94	77.71	1.23	95.66	19	508	0.59	0.626	0.65	13.34	0.53	0.005
7.76	1.96	76.04	1.25	95.06	19	509	0.58	0.642	0.66	13.34	0.55	0.010
7.81	1.96	76.99	1.25	96.26	20	517	0.58	0.598	0.61	13.34	0.50	0.006
7.90	1.97	76.96	1.27	97.45	20	527	0.58	0.556	0.55	13.34	0.46	0.010
7.94	1.99	75.98	1.29	98.00	20	531	0.58	0.540	0.53	13.34	0.43	0.005

Total estimated settlement: 0.32

Abbreviations

Q_{tn}: Normalized cone resistance
K_c: Fines correction factor
$Q_{tn,cs}$: Equivalent clean sand normalized cone resistance
G_{max}: Small strain shear modulus
CSR: Soil cyclic stress ratio
γ: Cyclic shear strain
$e_{vd(15)}$: Volumetric strain after 15 cycles
N_c: Equivalent number of cycles
e_v: Volumetric strain
Settle.: Calculated settlement

:: Post-earthquake settlement due to soil liquefaction ::

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
8.03	105.45	0.25	1.93	0.86	0.02	8.07	105.12	0.25	1.94	0.86	0.01
8.15	104.95	0.24	1.94	0.86	0.02	8.25	105.50	0.24	1.92	0.86	0.02
8.29	99.10	0.23	2.02	0.86	0.01	8.36	104.37	0.24	1.94	0.86	0.02
8.43	101.92	2.00	0.00	0.86	0.00	8.47	102.73	2.00	0.00	0.86	0.00
8.53	102.34	2.00	0.00	0.86	0.00	8.63	101.16	2.00	0.00	0.85	0.00
8.72	97.80	2.00	0.00	0.85	0.00	8.78	95.17	2.00	0.00	0.85	0.00
8.82	91.48	2.00	0.00	0.85	0.00	8.87	87.18	2.00	0.00	0.85	0.00
8.94	83.20	2.00	0.00	0.85	0.00	9.00	80.79	2.00	0.00	0.85	0.00
9.10	18.75	2.00	0.00	0.85	0.00	9.16	18.06	2.00	0.00	0.84	0.00
9.21	18.75	1.95	0.00	0.84	0.00	9.26	19.56	2.00	0.00	0.84	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
9.35	20.79	2.00	0.00	0.84	0.00	9.41	77.45	0.17	2.42	0.84	0.02
9.46	77.26	0.17	2.42	0.84	0.02	9.53	76.52	0.17	2.44	0.84	0.02
9.60	73.91	0.17	2.51	0.84	0.02	9.66	16.88	1.63	0.00	0.84	0.00
9.75	15.01	1.49	0.00	0.83	0.00	9.79	14.49	1.39	0.00	0.83	0.00
9.89	14.18	1.35	0.00	0.83	0.00	9.96	14.14	1.33	0.00	0.83	0.00
9.97	14.12	1.32	0.00	0.83	0.00	10.05	13.95	1.30	0.00	0.83	0.00
10.14	13.89	1.28	0.00	0.83	0.00	10.19	13.86	1.27	0.00	0.83	0.00
10.25	13.81	1.26	0.00	0.83	0.00	10.31	13.66	1.25	0.00	0.83	0.00
10.41	13.83	1.24	0.00	0.82	0.00	10.45	14.03	1.28	0.00	0.82	0.00
10.54	14.79	1.30	0.00	0.82	0.00	10.59	14.87	1.33	0.00	0.82	0.00
10.67	15.05	1.32	0.00	0.82	0.00	10.71	14.89	1.30	0.00	0.82	0.00
10.78	14.39	1.26	0.00	0.82	0.00	10.85	13.89	1.23	0.00	0.82	0.00
10.91	14.23	1.20	0.00	0.82	0.00	10.98	13.45	1.20	0.00	0.81	0.00
11.07	14.07	1.20	0.00	0.81	0.00	11.11	14.60	1.25	0.00	0.81	0.00
11.16	15.25	1.27	0.00	0.81	0.00	11.24	14.97	1.26	0.00	0.81	0.00
11.32	14.35	1.22	0.00	0.81	0.00	11.37	14.20	1.17	0.00	0.81	0.00
11.44	13.61	1.14	0.00	0.81	0.00	11.51	13.56	1.11	0.00	0.80	0.00
11.55	13.31	1.08	0.00	0.80	0.00	11.64	12.71	1.03	0.00	0.80	0.00
11.68	12.12	0.99	0.00	0.80	0.00	11.79	12.07	0.96	0.00	0.80	0.00
11.82	12.05	0.96	0.00	0.80	0.00	11.91	12.01	0.95	0.00	0.80	0.00
11.95	12.22	0.99	0.00	0.80	0.00	12.05	13.47	1.03	0.00	0.80	0.00
12.09	13.78	1.09	0.00	0.80	0.00	12.17	14.27	1.12	0.00	0.79	0.00
12.21	14.67	1.17	0.00	0.79	0.00	12.29	15.59	1.21	0.00	0.79	0.00
12.37	15.97	1.25	0.00	0.79	0.00	12.43	16.24	1.27	0.00	0.79	0.00
12.47	16.73	1.28	0.00	0.79	0.00	12.56	16.25	1.27	0.00	0.79	0.00
12.60	16.11	1.23	0.00	0.79	0.00	12.67	15.53	1.18	0.00	0.79	0.00
12.75	14.75	1.12	0.00	0.78	0.00	12.84	13.95	1.06	0.00	0.78	0.00
12.89	13.61	1.02	0.00	0.78	0.00	12.96	13.57	1.01	0.00	0.78	0.00
13.00	13.64	1.02	0.00	0.78	0.00	13.09	14.21	1.05	0.00	0.78	0.00
13.13	14.71	1.09	0.00	0.78	0.00	13.19	15.41	1.14	0.00	0.78	0.00
13.26	16.09	1.20	0.00	0.78	0.00	13.35	17.06	1.23	0.00	0.77	0.00
13.40	17.15	1.25	0.00	0.77	0.00	13.49	16.88	1.22	0.00	0.77	0.00
13.53	16.34	1.18	0.00	0.77	0.00	13.59	15.78	1.15	0.00	0.77	0.00
13.66	15.69	1.12	0.00	0.77	0.00	13.74	15.58	1.12	0.00	0.77	0.00
13.80	15.95	1.14	0.00	0.77	0.00	13.85	16.42	1.16	0.00	0.77	0.00
13.92	16.67	1.19	0.00	0.76	0.00	13.98	17.04	1.22	0.00	0.76	0.00
14.07	17.88	1.25	0.00	0.76	0.00	14.11	18.04	1.30	0.00	0.76	0.00
14.20	19.17	1.33	0.00	0.76	0.00	14.24	19.44	1.40	0.00	0.76	0.00
14.33	21.03	1.46	0.00	0.76	0.00	14.38	21.59	1.52	0.00	0.76	0.00
14.45	22.03	1.54	0.00	0.76	0.00	14.53	21.96	1.50	0.00	0.75	0.00
14.60	20.53	1.45	0.00	0.75	0.00	14.64	20.11	1.41	0.00	0.75	0.00
14.72	20.72	1.39	0.00	0.75	0.00	14.77	20.01	1.40	0.00	0.75	0.00
14.84	20.53	1.38	0.00	0.75	0.00	14.90	20.10	1.35	0.00	0.75	0.00
14.99	19.17	1.29	0.00	0.75	0.00	15.07	18.05	1.23	0.00	0.74	0.00
15.11	18.03	1.18	0.00	0.74	0.00	15.21	17.19	1.15	0.00	0.74	0.00
15.26	17.07	1.12	0.00	0.74	0.00	15.30	16.95	1.12	0.00	0.74	0.00
15.39	17.36	1.13	0.00	0.74	0.00	15.43	17.53	1.15	0.00	0.74	0.00
15.52	17.76	1.13	0.00	0.74	0.00	15.56	17.16	1.09	0.00	0.74	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
15.62	15.70	1.00	0.00	0.74	0.00	15.71	14.15	0.91	0.00	0.73	0.00
15.75	13.46	0.84	0.00	0.73	0.00	15.83	12.67	0.79	0.00	0.73	0.00
15.92	12.07	0.75	0.00	0.73	0.00	16.00	11.74	0.73	0.00	0.73	0.00
16.05	12.01	0.72	0.00	0.73	0.00	16.09	11.80	0.73	0.00	0.73	0.00
16.18	11.96	0.72	0.00	0.73	0.00	16.23	12.12	0.73	0.00	0.73	0.00
16.28	12.20	0.75	0.00	0.72	0.00	16.36	12.71	0.76	0.00	0.72	0.00
16.42	12.97	0.79	0.00	0.72	0.00	16.50	13.40	0.80	0.00	0.72	0.00
16.55	13.66	0.83	0.00	0.72	0.00	16.61	14.27	0.84	0.00	0.72	0.00
16.68	13.78	0.88	0.00	0.72	0.00	16.75	15.76	0.93	0.00	0.72	0.00
16.81	16.73	1.02	0.00	0.72	0.00	16.89	18.06	1.07	0.00	0.71	0.00
16.93	18.12	1.09	0.00	0.71	0.00	17.02	17.89	1.09	0.00	0.71	0.00
17.06	18.22	1.11	0.00	0.71	0.00	17.15	19.07	1.12	0.00	0.71	0.00
17.24	18.75	1.13	0.00	0.71	0.00	17.29	18.80	1.11	0.00	0.71	0.00
17.34	18.33	1.08	0.00	0.71	0.00	17.44	17.55	1.05	0.00	0.70	0.00
17.48	17.62	1.01	0.00	0.70	0.00	17.53	16.52	0.96	0.00	0.70	0.00
17.62	15.04	0.88	0.00	0.70	0.00	17.68	14.30	0.83	0.00	0.70	0.00
17.73	13.84	0.78	0.00	0.70	0.00	17.83	12.81	0.74	0.00	0.70	0.00
17.89	12.52	0.70	0.00	0.70	0.00	17.95	11.97	0.69	0.00	0.70	0.00
17.99	12.48	0.68	0.00	0.70	0.00	18.05	12.29	0.69	0.00	0.69	0.00
18.11	12.43	0.69	0.00	0.69	0.00	18.23	12.56	0.69	0.00	0.69	0.00
18.29	12.54	0.71	0.00	0.69	0.00	18.34	13.31	0.72	0.00	0.69	0.00
18.39	13.37	0.74	0.00	0.69	0.00	18.45	13.35	0.74	0.00	0.69	0.00
18.52	13.76	0.76	0.00	0.69	0.00	18.62	14.06	0.78	0.00	0.68	0.00
18.67	14.74	0.80	0.00	0.68	0.00	18.74	14.88	0.81	0.00	0.68	0.00
18.79	14.86	0.81	0.00	0.68	0.00	18.85	14.83	0.81	0.00	0.68	0.00
18.91	14.89	0.81	0.00	0.68	0.00	19.00	14.76	0.80	0.00	0.68	0.00
19.07	14.56	0.79	0.00	0.68	0.00	19.13	14.71	0.80	0.00	0.68	0.00
19.18	14.95	0.82	0.00	0.67	0.00	19.30	15.83	0.82	0.00	0.67	0.00
19.35	14.87	0.81	0.00	0.67	0.00	19.36	14.87	0.83	0.00	0.67	0.00
19.42	16.37	0.86	0.00	0.67	0.00	19.49	16.76	0.91	0.00	0.67	0.00
19.57	17.73	0.95	0.00	0.67	0.00	19.62	18.46	0.96	0.00	0.67	0.00
19.72	17.57	0.95	0.00	0.67	0.00	19.76	17.38	0.92	0.00	0.67	0.00
19.84	16.93	0.89	0.00	0.66	0.00	19.89	16.05	0.86	0.00	0.66	0.00
19.97	16.02	0.84	0.00	0.66	0.00	20.01	16.00	0.86	0.00	0.66	0.00
20.14	16.86	0.87	0.00	0.66	0.00	20.15	17.10	0.91	0.00	0.66	0.00
20.22	18.23	0.94	0.00	0.66	0.00	20.28	18.37	0.97	0.00	0.66	0.00
20.37	19.07	0.99	0.00	0.65	0.00	20.42	19.54	1.03	0.00	0.65	0.00
20.48	20.16	1.07	0.00	0.65	0.00	20.55	21.78	1.16	0.00	0.65	0.00
20.64	24.45	1.26	0.00	0.65	0.00	20.68	25.65	1.34	0.00	0.65	0.00
20.77	26.33	1.34	0.00	0.65	0.00	20.81	24.83	1.24	0.00	0.65	0.00
20.94	20.07	1.09	0.00	0.65	0.00	20.99	18.41	0.94	0.00	0.64	0.00
21.03	16.68	0.86	0.00	0.64	0.00	21.08	15.60	0.77	0.00	0.64	0.00
21.16	13.78	0.71	0.00	0.64	0.00	21.24	13.18	0.66	0.00	0.64	0.00
21.28	13.33	0.67	0.00	0.64	0.00	21.35	13.95	0.68	0.00	0.64	0.00
21.43	13.83	0.69	0.00	0.64	0.00	21.47	14.31	2.00	0.00	0.64	0.00
21.60	19.96	2.00	0.00	0.63	0.00	21.64	25.25	2.00	0.00	0.63	0.00
21.69	90.75	2.00	0.00	0.63	0.00	21.74	97.86	2.00	0.00	0.63	0.00
21.79	110.81	2.00	0.00	0.63	0.00	21.88	115.93	2.00	0.00	0.63	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
21.96	119.02	0.19	1.27	0.63	0.01	22.00	120.29	0.19	1.26	0.63	0.01
22.09	121.51	0.20	1.25	0.63	0.01	22.13	119.92	0.19	1.26	0.62	0.01
22.18	117.86	0.19	1.27	0.62	0.01	22.26	115.69	2.00	0.00	0.62	0.00
22.35	116.47	2.00	0.00	0.62	0.00	22.40	118.25	2.00	0.00	0.62	0.00
22.48	112.33	2.00	0.00	0.62	0.00	22.51	116.77	2.00	0.00	0.62	0.00
22.59	115.75	2.00	0.00	0.62	0.00	22.72	110.47	2.00	0.00	0.61	0.00
22.73	109.03	2.00	0.00	0.61	0.00	22.78	106.96	2.00	0.00	0.61	0.00
22.85	101.78	2.00	0.00	0.61	0.00	22.95	33.55	2.00	0.00	0.61	0.00
23.00	30.83	2.00	0.00	0.61	0.00	23.04	28.21	2.00	0.00	0.61	0.00
23.18	23.19	2.00	0.00	0.61	0.00	23.22	22.01	2.00	0.00	0.61	0.00
23.25	21.05	2.00	0.00	0.61	0.00	23.30	20.72	0.99	0.00	0.61	0.00
23.40	20.52	0.97	0.00	0.60	0.00	23.45	20.25	0.95	0.00	0.60	0.00
23.53	19.59	0.92	0.00	0.60	0.00	23.56	18.97	0.88	0.00	0.60	0.00
23.67	17.84	0.84	0.00	0.60	0.00	23.72	17.36	0.81	0.00	0.60	0.00
23.76	16.96	0.79	0.00	0.60	0.00	23.86	16.91	0.78	0.00	0.60	0.00
23.91	16.90	0.78	0.00	0.59	0.00	23.95	16.88	0.78	0.00	0.59	0.00
24.04	17.07	0.78	0.00	0.59	0.00	24.08	17.21	0.79	0.00	0.59	0.00
24.19	17.54	0.79	0.00	0.59	0.00	24.25	17.43	0.79	0.00	0.59	0.00
24.30	17.03	0.77	0.00	0.59	0.00	24.36	16.64	0.77	0.00	0.59	0.00
24.41	16.91	0.78	0.00	0.59	0.00	24.48	17.95	0.83	0.00	0.59	0.00
24.57	19.87	0.88	0.00	0.58	0.00	24.62	20.36	0.93	0.00	0.58	0.00
24.68	20.86	0.97	0.00	0.58	0.00	24.79	22.61	1.01	0.00	0.58	0.00
24.83	23.33	1.06	0.00	0.58	0.00	24.88	23.91	1.07	0.00	0.58	0.00
24.97	23.26	1.03	0.00	0.58	0.00	25.03	20.98	0.94	0.00	0.58	0.00
25.10	18.42	0.83	0.00	0.57	0.00	25.14	16.33	0.70	0.00	0.57	0.00
25.23	12.61	0.59	0.00	0.57	0.00	25.28	11.49	0.50	0.00	0.57	0.00
25.34	10.68	0.46	0.00	0.57	0.00	25.45	10.00	0.41	0.00	0.57	0.00
25.52	8.60	0.36	0.00	0.57	0.00	25.54	7.58	0.35	0.00	0.57	0.00
25.61	9.38	0.36	0.00	0.57	0.00	25.67	9.22	0.38	0.00	0.56	0.00
25.73	9.21	0.38	0.00	0.56	0.00	25.80	9.20	0.38	0.00	0.56	0.00
25.86	9.19	0.38	0.00	0.56	0.00	25.94	9.60	0.40	0.00	0.56	0.00
26.00	10.16	0.43	0.00	0.56	0.00	26.07	11.02	0.45	0.00	0.56	0.00
26.16	11.35	0.47	0.00	0.56	0.00	26.19	11.27	0.47	0.00	0.56	0.00
26.26	11.11	0.46	0.00	0.55	0.00	26.33	10.66	0.44	0.00	0.55	0.00
26.38	10.37	0.44	0.00	0.55	0.00	26.51	10.59	0.42	0.00	0.55	0.00
26.53	9.98	0.43	0.00	0.55	0.00	26.61	10.53	0.43	0.00	0.55	0.00
26.66	10.73	0.44	0.00	0.55	0.00	26.73	11.14	0.45	0.00	0.55	0.00
26.78	11.13	0.46	0.00	0.55	0.00	26.86	11.32	0.47	0.00	0.54	0.00
26.93	11.73	0.48	0.00	0.54	0.00	27.01	12.21	0.50	0.00	0.54	0.00
27.04	12.20	0.51	0.00	0.54	0.00	27.12	12.53	0.51	0.00	0.54	0.00
27.17	12.59	0.52	0.00	0.54	0.00	27.25	12.92	0.54	0.00	0.54	0.00
27.32	13.40	0.54	0.00	0.54	0.00	27.40	12.88	0.54	0.00	0.54	0.00
27.43	12.87	0.53	0.00	0.54	0.00	27.52	12.85	0.53	0.00	0.53	0.00
27.57	13.18	0.54	0.00	0.53	0.00	27.63	13.66	0.56	0.00	0.53	0.00
27.73	13.84	0.57	0.00	0.53	0.00	27.76	13.98	0.58	0.00	0.53	0.00
27.83	14.30	0.59	0.00	0.53	0.00	27.92	14.77	0.61	0.00	0.53	0.00
27.96	15.25	0.62	0.00	0.53	0.00	28.05	15.15	0.61	0.00	0.52	0.00
28.09	14.64	0.60	0.00	0.52	0.00	28.18	14.13	0.57	0.00	0.52	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
28.22	13.49	0.54	0.00	0.52	0.00	28.31	12.78	0.52	0.00	0.52	0.00
28.36	12.73	0.51	0.00	0.52	0.00	28.43	12.68	0.52	0.00	0.52	0.00
28.52	13.62	0.56	0.00	0.52	0.00	28.57	15.13	0.61	0.00	0.52	0.00
28.64	16.77	0.69	0.00	0.51	0.00	28.69	18.64	0.76	0.00	0.51	0.00
28.77	20.15	0.82	0.00	0.51	0.00	28.83	21.04	0.85	0.00	0.51	0.00
28.91	20.93	0.85	0.00	0.51	0.00	28.96	20.70	0.84	0.00	0.51	0.00
29.05	19.96	0.82	0.00	0.51	0.00	29.10	19.60	0.80	0.00	0.51	0.00
29.18	19.43	0.80	0.00	0.51	0.00	29.22	20.11	2.00	0.00	0.50	0.00
29.31	23.62	2.00	0.00	0.50	0.00	29.35	27.23	2.00	0.00	0.50	0.00
29.44	35.75	2.00	0.00	0.50	0.00	29.53	105.26	2.00	0.00	0.50	0.00
29.57	107.81	2.00	0.00	0.50	0.00	29.62	110.40	2.00	0.00	0.50	0.00
29.66	112.24	2.00	0.00	0.50	0.00	29.75	117.67	2.00	0.00	0.50	0.00
29.83	127.43	2.00	0.00	0.49	0.00	29.87	130.41	2.00	0.00	0.49	0.00
29.95	135.77	0.23	0.90	0.49	0.01	30.03	139.33	0.24	0.87	0.49	0.01
30.09	140.23	0.25	0.87	0.49	0.01	30.12	140.99	0.25	0.86	0.49	0.00
30.22	140.01	2.00	0.00	0.49	0.00	30.26	139.92	2.00	0.00	0.49	0.00
30.36	135.88	2.00	0.00	0.49	0.00	30.39	133.73	2.00	0.00	0.48	0.00
30.48	122.44	2.00	0.00	0.48	0.00	30.53	115.94	2.00	0.00	0.48	0.00
30.62	38.39	2.00	0.00	0.48	0.00	30.66	33.20	2.00	0.00	0.48	0.00
30.75	27.66	2.00	0.00	0.48	0.00	30.81	26.26	2.00	0.00	0.48	0.00
30.85	24.81	2.00	0.00	0.48	0.00	30.93	23.67	0.94	0.00	0.48	0.00
30.98	23.19	0.87	0.00	0.47	0.00	31.07	19.76	0.80	0.00	0.47	0.00
31.11	18.27	0.71	0.00	0.47	0.00	31.20	16.57	0.65	0.00	0.47	0.00
31.28	15.95	0.61	0.00	0.47	0.00	31.33	15.41	0.59	0.00	0.47	0.00
31.38	14.80	0.57	0.00	0.47	0.00	31.46	14.44	0.55	0.00	0.47	0.00
31.52	14.30	0.55	0.00	0.47	0.00	31.59	14.48	0.55	0.00	0.46	0.00
31.65	14.46	0.55	0.00	0.46	0.00	31.70	14.44	0.56	0.00	0.46	0.00
31.78	15.08	0.57	0.00	0.46	0.00	31.87	15.84	0.60	0.00	0.46	0.00
31.91	16.22	0.62	0.00	0.46	0.00	31.97	16.86	0.64	0.00	0.46	0.00
32.06	17.10	0.65	0.00	0.46	0.00	32.09	17.15	0.66	0.00	0.46	0.00
32.18	17.84	0.67	0.00	0.45	0.00	32.22	18.29	0.70	0.00	0.45	0.00
32.31	19.05	0.72	0.00	0.45	0.00	32.35	19.16	0.70	0.00	0.45	0.00
32.44	17.10	0.66	0.00	0.45	0.00	32.49	16.24	0.62	0.00	0.45	0.00
32.58	15.76	0.59	0.00	0.45	0.00	32.63	15.54	0.58	0.00	0.45	0.00
32.73	15.07	0.57	0.00	0.45	0.00	32.76	15.06	0.56	0.00	0.44	0.00
32.83	15.04	0.56	0.00	0.44	0.00	32.88	15.03	0.60	0.00	0.44	0.00
32.97	18.17	0.67	0.00	0.44	0.00	33.01	20.81	2.00	0.00	0.44	0.00
33.08	27.16	2.00	0.00	0.44	0.00	33.15	34.14	2.00	0.00	0.44	0.00
33.24	100.05	2.00	0.00	0.44	0.00	33.28	101.35	2.00	0.00	0.44	0.00
33.34	102.64	2.00	0.00	0.43	0.00	33.42	103.70	0.15	0.98	0.43	0.01
33.50	106.17	0.15	0.96	0.43	0.01	33.54	107.69	0.15	0.95	0.43	0.01
33.60	109.74	0.16	0.93	0.43	0.01	33.68	118.09	0.17	0.88	0.43	0.01
33.77	133.60	0.22	0.79	0.43	0.01	33.80	135.66	0.22	0.78	0.43	0.00
33.90	146.28	0.28	0.73	0.43	0.01	33.95	140.54	0.25	0.75	0.42	0.00
34.00	139.61	0.24	0.75	0.42	0.00	34.07	139.37	0.24	0.75	0.42	0.01
34.25	142.97	0.26	0.73	0.42	0.02	34.29	146.74	2.00	0.00	0.42	0.00
34.34	155.85	2.00	0.00	0.42	0.00	34.38	144.73	2.00	0.00	0.42	0.00
34.41	157.29	2.00	0.00	0.42	0.00	34.47	159.48	2.00	0.00	0.42	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
34.55	152.38	2.00	0.00	0.41	0.00	34.60	152.09	2.00	0.00	0.41	0.00
34.68	134.23	2.00	0.00	0.41	0.00	34.74	125.48	2.00	0.00	0.41	0.00
34.78	116.81	2.00	0.00	0.41	0.00	34.87	37.19	2.00	0.00	0.41	0.00
34.92	32.52	2.00	0.00	0.41	0.00	35.02	23.73	2.00	0.00	0.41	0.00
35.09	21.14	0.79	0.00	0.41	0.00	35.14	20.10	0.73	0.00	0.40	0.00
35.20	19.02	0.69	0.00	0.40	0.00	35.27	18.36	0.66	0.00	0.40	0.00
35.32	17.72	0.63	0.00	0.40	0.00	35.37	16.71	0.60	0.00	0.40	0.00
35.49	15.49	0.56	0.00	0.40	0.00	35.53	15.05	0.54	0.00	0.40	0.00
35.59	14.66	0.52	0.00	0.40	0.00	35.67	13.91	0.49	0.00	0.40	0.00
35.71	13.17	0.47	0.00	0.39	0.00	35.80	12.90	0.46	0.00	0.39	0.00
35.84	13.26	0.48	0.00	0.39	0.00	35.93	14.70	0.57	0.00	0.39	0.00
36.03	20.62	2.00	0.00	0.39	0.00	36.09	29.74	2.00	0.00	0.39	0.00
36.13	106.64	2.00	0.00	0.39	0.00	36.19	125.53	2.00	0.00	0.39	0.00
36.24	139.99	2.00	0.00	0.39	0.00	36.29	147.85	2.00	0.00	0.38	0.00
36.41	165.07	2.00	0.00	0.38	0.00	36.50	164.28	0.44	0.59	0.38	0.01
36.55	166.64	0.47	0.59	0.38	0.00	36.59	168.25	0.50	0.58	0.38	0.00
36.65	169.98	0.53	0.57	0.38	0.00	36.71	171.29	0.55	0.53	0.38	0.00
36.76	171.92	0.56	0.52	0.38	0.00	36.81	173.11	0.59	0.52	0.38	0.00
36.98	170.77	0.54	0.56	0.37	0.01	37.03	170.37	0.53	0.56	0.37	0.00
37.09	168.12	0.50	0.57	0.37	0.00	37.16	165.47	0.45	0.57	0.37	0.00
37.21	162.56	0.42	0.58	0.37	0.00	37.26	160.60	0.39	0.58	0.37	0.00
37.34	157.61	0.36	0.59	0.37	0.01	37.38	156.01	0.35	0.59	0.37	0.00
37.43	143.29	0.26	0.64	0.37	0.00	37.47	144.97	0.27	0.63	0.36	0.00
37.53	142.70	0.25	0.64	0.36	0.00	37.64	138.77	0.24	0.65	0.36	0.01
37.69	137.07	0.23	0.65	0.36	0.00	37.73	135.18	0.22	0.66	0.36	0.00
37.82	131.99	0.21	0.67	0.36	0.01	37.87	131.32	0.21	0.67	0.36	0.00
37.95	128.62	0.20	0.68	0.36	0.01	38.04	126.47	0.19	0.68	0.36	0.01
38.07	125.88	0.19	0.69	0.35	0.00	38.15	124.74	0.19	0.69	0.35	0.01
38.22	123.99	0.18	0.69	0.35	0.01	38.26	123.77	0.18	0.69	0.35	0.00
38.34	123.18	0.18	0.69	0.35	0.01	38.41	123.69	0.18	0.69	0.35	0.01
38.46	123.62	0.18	0.68	0.35	0.00	38.55	124.81	0.19	0.68	0.35	0.01
38.59	125.05	0.19	0.67	0.35	0.00	38.69	128.23	0.20	0.66	0.34	0.01
38.75	130.00	0.20	0.65	0.34	0.00	38.79	133.11	0.21	0.63	0.34	0.00
38.88	136.01	2.00	0.00	0.34	0.00	38.93	135.49	2.00	0.00	0.34	0.00
38.98	135.09	2.00	0.00	0.34	0.00	39.05	133.86	2.00	0.00	0.34	0.00
39.14	125.07	2.00	0.00	0.34	0.00	39.19	119.36	2.00	0.00	0.34	0.00
39.24	112.71	2.00	0.00	0.33	0.00	39.31	42.82	2.00	0.00	0.33	0.00
39.41	31.21	2.00	0.00	0.33	0.00	39.46	27.40	2.00	0.00	0.33	0.00
39.53	25.30	2.00	0.00	0.33	0.00	39.59	26.01	2.00	0.00	0.33	0.00
39.69	29.50	2.00	0.00	0.33	0.00	39.76	32.25	2.00	0.00	0.33	0.00
39.81	100.74	2.00	0.00	0.33	0.00	39.85	111.02	2.00	0.00	0.32	0.00
39.92	122.27	2.00	0.00	0.32	0.00	39.98	130.15	2.00	0.00	0.32	0.00
40.07	127.25	2.00	0.00	0.32	0.00	40.11	145.29	2.00	0.00	0.32	0.00
40.19	140.14	2.00	0.00	0.32	0.00	40.26	137.11	2.00	0.00	0.32	0.00
40.30	135.75	0.22	0.58	0.32	0.00	40.39	133.90	0.21	0.58	0.32	0.01
40.43	134.43	0.22	0.58	0.31	0.00	40.51	134.51	0.22	0.57	0.31	0.01
40.60	134.21	0.22	0.57	0.31	0.01	40.67	136.70	0.23	0.56	0.31	0.00
40.72	137.11	0.23	0.56	0.31	0.00	40.78	138.84	0.23	0.55	0.31	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
40.82	141.03	0.24	0.54	0.31	0.00	40.95	143.72	0.26	0.53	0.31	0.01
40.99	145.19	0.27	0.53	0.31	0.00	41.03	146.12	0.27	0.52	0.30	0.00
41.12	147.02	0.28	0.52	0.30	0.01	41.21	147.85	0.28	0.51	0.30	0.01
41.28	148.36	0.29	0.51	0.30	0.00	41.34	148.42	0.29	0.51	0.30	0.00
41.39	148.32	0.29	0.50	0.30	0.00	41.45	147.60	0.28	0.51	0.30	0.00
41.52	146.98	0.28	0.50	0.30	0.00	41.56	145.95	0.27	0.51	0.30	0.00
41.62	140.80	0.24	0.52	0.29	0.00	41.73	142.08	0.25	0.51	0.29	0.01
41.78	136.92	0.23	0.53	0.29	0.00	41.84	139.07	0.24	0.52	0.29	0.00
41.91	144.32	0.26	0.50	0.29	0.00	41.96	149.79	0.29	0.48	0.29	0.00
42.00	154.49	0.33	0.47	0.29	0.00	42.13	159.70	0.38	0.46	0.29	0.01
42.18	161.24	0.40	0.45	0.29	0.00	42.24	161.53	0.40	0.45	0.28	0.00
42.29	161.42	0.40	0.45	0.28	0.00	42.36	160.81	0.39	0.45	0.28	0.00
42.40	159.22	0.37	0.45	0.28	0.00	42.53	155.00	0.33	0.46	0.28	0.01
42.58	152.33	0.31	0.46	0.28	0.00	42.64	149.12	0.29	0.47	0.28	0.00
42.69	145.04	0.27	0.48	0.28	0.00	42.75	140.44	0.24	0.49	0.28	0.00
42.80	134.72	0.22	0.50	0.27	0.00	42.88	128.57	0.20	0.52	0.27	0.00
42.91	96.14	0.13	0.66	0.27	0.00	43.01	119.06	0.17	0.55	0.27	0.01
43.06	115.55	0.16	0.56	0.27	0.00	43.13	115.10	0.16	0.56	0.27	0.00
43.18	113.69	2.00	0.00	0.27	0.00	43.25	114.00	2.00	0.00	0.27	0.00
43.31	121.37	2.00	0.00	0.27	0.00	43.38	132.68	2.00	0.00	0.26	0.00
43.44	139.83	2.00	0.00	0.26	0.00	43.52	138.05	2.00	0.00	0.26	0.00
43.57	133.26	2.00	0.00	0.26	0.00	43.68	124.17	2.00	0.00	0.26	0.00
43.71	124.14	2.00	0.00	0.26	0.00	43.81	118.21	2.00	0.00	0.26	0.00
43.84	115.94	2.00	0.00	0.26	0.00	43.92	111.45	0.16	0.55	0.26	0.01
43.97	44.09	1.40	0.00	0.25	0.00	44.06	41.22	1.30	0.00	0.25	0.00
44.12	37.42	1.20	0.00	0.25	0.00	44.20	34.64	1.13	0.00	0.25	0.00
44.24	33.66	1.08	0.00	0.25	0.00	44.33	32.67	1.05	0.00	0.25	0.00
44.37	32.55	1.05	0.00	0.25	0.00	44.46	32.90	1.05	0.00	0.25	0.00
44.50	33.14	1.06	0.00	0.25	0.00	44.59	33.77	1.07	0.00	0.24	0.00
44.63	34.10	2.00	0.00	0.24	0.00	44.72	38.25	2.00	0.00	0.24	0.00
44.77	112.66	2.00	0.00	0.24	0.00	44.82	129.25	2.00	0.00	0.24	0.00
44.90	173.25	2.00	0.00	0.24	0.00	44.96	163.85	2.00	0.00	0.24	0.00
45.06	157.55	2.00	0.00	0.24	0.00	45.11	145.92	2.00	0.00	0.24	0.00
45.16	144.84	0.26	0.40	0.23	0.00	45.25	144.51	0.26	0.40	0.23	0.00
45.29	150.25	0.30	0.39	0.23	0.00	45.40	154.58	0.33	0.38	0.23	0.00
45.43	161.58	0.40	0.36	0.23	0.00	45.48	163.96	0.43	0.36	0.23	0.00
45.59	168.04	0.49	0.35	0.23	0.00	45.64	168.15	0.49	0.35	0.23	0.00
45.69	169.26	0.51	0.34	0.23	0.00	45.78	171.21	0.54	0.34	0.22	0.00
45.82	170.96	0.54	0.34	0.22	0.00	45.87	167.03	0.47	0.34	0.22	0.00
46.02	149.88	0.30	0.37	0.22	0.01	46.07	145.50	2.00	0.00	0.22	0.00
46.12	153.25	2.00	0.00	0.22	0.00	46.21	147.91	2.00	0.00	0.22	0.00
46.22	143.98	2.00	0.00	0.22	0.00	46.27	149.16	2.00	0.00	0.22	0.00
46.35	138.63	2.00	0.00	0.21	0.00	46.44	125.43	2.00	0.00	0.21	0.00
46.48	118.77	2.00	0.00	0.21	0.00	46.53	115.06	2.00	0.00	0.21	0.00
46.62	117.85	2.00	0.00	0.21	0.00	46.66	124.28	2.00	0.00	0.21	0.00
46.75	137.57	2.00	0.00	0.21	0.00	46.79	143.90	2.00	0.00	0.21	0.00
46.88	152.18	2.00	0.00	0.21	0.00	46.95	153.64	2.00	0.00	0.20	0.00
47.01	156.33	2.00	0.00	0.20	0.00	47.06	159.01	2.00	0.00	0.20	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
47.13	162.96	2.00	0.00	0.20	0.00	47.19	166.95	2.00	0.00	0.20	0.00
47.26	170.85	2.00	0.00	0.20	0.00	47.32	174.11	0.60	0.27	0.20	0.00
47.41	178.11	0.70	0.21	0.20	0.00	47.45	178.22	0.70	0.21	0.20	0.00
47.54	178.72	0.71	0.21	0.19	0.00	47.59	177.58	0.68	0.21	0.19	0.00
47.66	176.82	0.66	0.21	0.19	0.00	47.72	175.63	0.63	0.26	0.19	0.00
47.77	175.18	0.62	0.26	0.19	0.00	47.85	173.77	0.59	0.26	0.19	0.00
47.94	172.60	0.57	0.26	0.19	0.00	47.97	171.86	0.55	0.26	0.19	0.00
48.07	169.47	0.51	0.28	0.19	0.00	48.12	167.58	0.48	0.28	0.18	0.00
48.19	166.02	0.46	0.28	0.18	0.00	48.25	163.34	0.42	0.28	0.18	0.00
48.30	160.87	0.39	0.29	0.18	0.00	48.40	154.56	0.33	0.29	0.18	0.00
48.45	151.17	0.30	0.30	0.18	0.00	48.56	143.28	2.00	0.00	0.18	0.00
48.60	140.72	2.00	0.00	0.18	0.00	48.64	138.23	2.00	0.00	0.18	0.00
48.70	134.14	2.00	0.00	0.17	0.00	48.77	131.14	2.00	0.00	0.17	0.00
48.83	118.23	2.00	0.00	0.17	0.00	48.91	117.38	2.00	0.00	0.17	0.00
48.96	113.67	2.00	0.00	0.17	0.00	49.02	108.91	2.00	0.00	0.17	0.00
49.09	40.97	2.00	0.00	0.17	0.00	49.19	33.10	2.00	0.00	0.17	0.00
49.23	30.69	2.00	0.00	0.17	0.00	49.31	25.99	2.00	0.00	0.16	0.00
49.36	23.90	2.00	0.00	0.16	0.00	49.45	20.15	0.70	0.00	0.16	0.00
49.49	23.70	0.63	0.00	0.16	0.00	49.55	17.28	2.00	0.00	0.16	0.00
49.62	23.45	2.00	0.00	0.16	0.00	49.71	36.79	2.00	0.00	0.16	0.00
49.75	41.74	2.00	0.00	0.16	0.00	49.81	110.10	2.00	0.00	0.16	0.00
49.89	111.07	2.00	0.00	0.15	0.00	49.94	117.22	2.00	0.00	0.15	0.00
50.02	123.73	2.00	0.00	0.15	0.00	50.12	140.25	2.00	0.00	0.15	0.00
50.19	134.25	2.00	0.00	0.15	0.00	50.24	129.41	2.00	0.00	0.15	0.00
50.28	125.13	2.00	0.00	0.15	0.00	50.35	120.73	2.00	0.00	0.15	0.00
50.41	117.23	2.00	0.00	0.15	0.00	50.46	115.69	2.00	0.00	0.14	0.00
50.58	119.54	2.00	0.00	0.14	0.00	50.64	124.42	2.00	0.00	0.14	0.00
50.69	131.65	2.00	0.00	0.14	0.00	50.75	142.70	2.00	0.00	0.14	0.00
50.81	153.44	2.00	0.00	0.14	0.00	50.86	154.95	2.00	0.00	0.14	0.00
50.96	157.92	2.00	0.00	0.14	0.00	51.03	140.28	2.00	0.00	0.14	0.00
51.07	146.11	2.00	0.00	0.13	0.00	51.13	151.88	2.00	0.00	0.13	0.00
51.21	154.57	0.33	0.22	0.13	0.00	51.25	157.91	0.36	0.21	0.13	0.00
51.32	162.74	0.41	0.20	0.13	0.00	51.38	166.92	0.47	0.20	0.13	0.00
51.48	172.91	0.57	0.17	0.13	0.00	51.55	175.00	0.62	0.17	0.13	0.00
51.60	175.43	0.63	0.17	0.13	0.00	51.65	173.23	0.58	0.17	0.12	0.00
51.78	166.06	0.46	0.19	0.12	0.00	51.82	164.38	0.43	0.19	0.12	0.00
51.89	164.40	0.43	0.19	0.12	0.00	51.95	167.33	0.48	0.18	0.12	0.00
52.00	173.22	0.58	0.16	0.12	0.00	52.04	181.13	0.78	0.10	0.12	0.00
52.11	159.77	0.38	0.19	0.12	0.00	52.18	191.35	1.23	0.03	0.12	0.00
52.24	198.58	1.77	0.00	0.11	0.00	52.33	201.25	2.00	0.00	0.11	0.00
52.42	197.14	1.64	0.00	0.11	0.00	52.46	194.12	1.40	0.00	0.11	0.00
52.51	193.08	1.33	0.02	0.11	0.00	52.62	186.00	0.96	0.05	0.11	0.00
52.67	182.93	0.84	0.09	0.11	0.00	52.72	181.91	0.81	0.09	0.11	0.00
52.77	179.85	0.74	0.11	0.11	0.00	52.84	178.98	0.72	0.11	0.10	0.00
52.94	175.91	0.64	0.14	0.10	0.00	53.04	172.62	0.57	0.14	0.10	0.00
53.10	170.89	0.54	0.15	0.10	0.00	53.16	168.23	0.49	0.15	0.10	0.00
53.21	166.38	0.46	0.15	0.10	0.00	53.27	164.83	0.44	0.15	0.10	0.00
53.34	164.77	0.44	0.15	0.10	0.00	53.38	165.83	0.45	0.15	0.10	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
53.43	164.30	0.43	0.15	0.09	0.00	53.50	162.91	0.42	0.15	0.09	0.00
53.56	163.33	0.42	0.14	0.09	0.00	53.66	160.44	0.39	0.14	0.09	0.00
53.72	157.60	0.36	0.14	0.09	0.00	53.78	151.96	0.31	0.15	0.09	0.00
53.82	145.05	0.27	0.15	0.09	0.00	53.89	137.63	0.23	0.16	0.09	0.00
53.97	125.14	0.19	0.17	0.09	0.00	54.04	113.46	0.16	0.18	0.08	0.00
54.08	108.39	0.15	0.18	0.08	0.00	54.16	97.77	0.14	0.20	0.08	0.00
54.21	100.42	0.14	0.19	0.08	0.00	54.27	105.51	0.15	0.18	0.08	0.00
54.35	112.40	0.16	0.17	0.08	0.00	54.44	115.90	0.17	0.16	0.08	0.00
54.48	118.59	0.17	0.16	0.08	0.00	54.55	120.98	0.18	0.15	0.08	0.00
54.62	124.32	0.19	0.15	0.07	0.00	54.70	121.85	0.18	0.14	0.07	0.00
54.75	118.31	0.17	0.15	0.07	0.00	54.80	110.13	0.16	0.15	0.07	0.00
54.88	109.25	0.16	0.15	0.07	0.00	54.97	115.35	0.17	0.14	0.07	0.00
55.01	115.15	0.17	0.14	0.07	0.00	55.05	126.37	0.19	0.13	0.07	0.00
55.12	123.71	0.19	0.13	0.07	0.00	55.19	139.27	0.24	0.12	0.06	0.00
55.27	140.89	0.25	0.11	0.06	0.00	55.34	142.81	0.26	0.11	0.06	0.00
55.39	142.63	0.26	0.11	0.06	0.00	55.49	145.99	0.27	0.10	0.06	0.00
55.54	145.63	0.27	0.10	0.06	0.00	55.58	145.17	0.27	0.10	0.06	0.00
55.67	144.32	0.26	0.10	0.06	0.00	55.75	141.30	0.25	0.10	0.06	0.00
55.80	139.83	0.24	0.10	0.05	0.00	55.84	140.19	0.24	0.09	0.05	0.00
55.93	138.60	0.24	0.09	0.05	0.00	55.98	138.26	0.24	0.09	0.05	0.00
56.06	137.70	0.23	0.09	0.05	0.00	56.11	131.66	0.21	0.09	0.05	0.00
56.21	140.83	0.25	0.08	0.05	0.00	56.37	160.01	0.38	0.07	0.04	0.00
56.40	163.37	0.42	0.07	0.04	0.00	56.43	165.78	0.45	0.07	0.04	0.00
56.48	166.66	0.47	0.07	0.04	0.00	56.52	167.57	0.48	0.06	0.04	0.00
56.59	167.82	0.48	0.06	0.04	0.00	56.64	167.70	0.48	0.06	0.04	0.00
56.76	164.37	0.44	0.06	0.04	0.00	56.78	163.43	0.42	0.06	0.04	0.00
56.85	160.03	0.39	0.06	0.04	0.00	56.90	158.41	0.37	0.06	0.04	0.00
56.96	153.83	2.00	0.00	0.03	0.00	57.03	148.59	2.00	0.00	0.03	0.00
57.10	149.42	2.00	0.00	0.03	0.00	57.17	163.61	2.00	0.00	0.03	0.00
57.25	165.10	2.00	0.00	0.03	0.00	57.29	169.36	2.00	0.00	0.03	0.00
57.35	147.69	2.00	0.00	0.03	0.00	57.43	126.41	2.00	0.00	0.03	0.00
57.51	43.97	2.00	0.00	0.03	0.00	57.57	33.55	2.00	0.00	0.02	0.00
57.65	26.12	2.00	0.00	0.02	0.00	57.70	22.64	0.69	0.00	0.02	0.00
57.78	19.32	0.61	0.00	0.02	0.00	57.83	18.90	0.58	0.00	0.02	0.00
57.91	19.20	0.58	0.00	0.02	0.00	57.96	19.56	0.56	0.00	0.02	0.00
58.04	16.37	0.58	0.00	0.02	0.00	58.09	21.32	0.58	0.00	0.02	0.00
58.17	20.22	0.60	0.00	0.01	0.00	58.22	18.29	0.56	0.00	0.01	0.00
58.28	16.75	0.54	0.00	0.01	0.00	58.35	18.17	0.51	0.00	0.01	0.00
58.40	15.98	0.53	0.00	0.01	0.00	58.50	18.05	0.55	0.00	0.01	0.00
58.60	20.58	0.60	0.00	0.01	0.00	58.63	20.99	0.63	0.00	0.01	0.00
58.71	21.20	0.64	0.00	0.00	0.00	58.75	21.08	0.64	0.00	0.00	0.00
58.80	20.76	0.64	0.00	0.00	0.00	58.88	21.90	0.68	0.00	0.00	0.00
59.01	24.75	0.72	0.00	0.00	0.00	59.05	24.27	0.73	0.00	0.00	0.00
59.07	22.99	0.67	0.00	0.00	0.00	59.16	18.96	0.59	0.00	0.00	0.00
59.21	16.60	0.51	0.00	0.00	0.00	59.27	15.09	0.46	0.00	0.00	0.00
59.32	14.53	0.44	0.00	0.00	0.00	59.41	14.93	0.45	0.00	0.00	0.00
59.45	15.62	0.46	0.00	0.00	0.00	59.55	15.82	0.48	0.00	0.00	0.00
59.60	16.47	0.49	0.00	0.00	0.00	59.66	16.92	0.50	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
59.76	16.81	0.50	0.00	0.00	0.00	59.80	16.40	0.49	0.00	0.00	0.00
59.85	15.74	0.46	0.00	0.00	0.00	59.94	13.79	0.43	0.00	0.00	0.00
59.98	13.39	0.40	0.00	0.00	0.00	60.05	13.04	0.38	0.00	0.00	0.00
60.16	12.40	0.37	0.00	0.00	0.00	60.20	12.20	0.36	0.00	0.00	0.00
60.25	12.20	0.36	0.00	0.00	0.00	60.34	12.73	0.37	0.00	0.00	0.00
60.39	12.97	0.38	0.00	0.00	0.00	60.46	13.46	0.40	0.00	0.00	0.00
60.50	13.80	0.41	0.00	0.00	0.00	60.59	13.85	0.41	0.00	0.00	0.00
60.64	13.74	0.41	0.00	0.00	0.00	60.74	14.23	0.42	0.00	0.00	0.00
60.77	14.43	0.42	0.00	0.00	0.00	60.83	14.27	0.43	0.00	0.00	0.00
60.95	14.31	0.42	0.00	0.00	0.00	60.98	14.24	0.42	0.00	0.00	0.00
61.06	14.20	0.42	0.00	0.00	0.00	61.11	13.86	0.41	0.00	0.00	0.00
61.20	13.46	0.40	0.00	0.00	0.00	61.24	13.31	0.39	0.00	0.00	0.00
61.30	13.20	0.39	0.00	0.00	0.00	61.38	13.24	0.38	0.00	0.00	0.00
61.42	12.85	0.37	0.00	0.00	0.00	61.51	12.12	0.36	0.00	0.00	0.00
61.55	11.97	0.35	0.00	0.00	0.00	61.64	12.16	0.35	0.00	0.00	0.00
61.69	12.40	0.36	0.00	0.00	0.00	61.77	12.63	0.37	0.00	0.00	0.00
61.86	12.63	0.37	0.00	0.00	0.00	61.89	12.63	0.37	0.00	0.00	0.00
61.95	12.72	0.37	0.00	0.00	0.00	62.04	12.62	0.37	0.00	0.00	0.00
62.08	12.52	0.37	0.00	0.00	0.00	62.17	12.61	0.37	0.00	0.00	0.00
62.21	12.51	0.36	0.00	0.00	0.00	62.29	12.12	0.35	0.00	0.00	0.00
62.36	11.97	0.35	0.00	0.00	0.00	62.45	12.01	0.35	0.00	0.00	0.00
62.48	12.15	0.35	0.00	0.00	0.00	62.56	12.44	0.36	0.00	0.00	0.00
62.60	12.53	0.36	0.00	0.00	0.00	62.70	12.48	0.36	0.00	0.00	0.00
62.74	12.43	0.37	0.00	0.00	0.00	62.82	12.86	0.38	0.00	0.00	0.00
62.87	13.78	0.42	0.00	0.00	0.00	62.97	15.69	0.45	0.00	0.00	0.00
63.02	16.13	0.47	0.00	0.00	0.00	63.09	15.63	0.46	0.00	0.00	0.00
63.14	14.74	0.43	0.00	0.00	0.00	63.26	13.65	0.41	0.00	0.00	0.00
63.31	13.35	0.39	0.00	0.00	0.00	63.35	13.21	0.39	0.00	0.00	0.00
63.40	13.05	0.38	0.00	0.00	0.00	63.49	13.05	0.38	0.00	0.00	0.00
63.53	13.05	0.38	0.00	0.00	0.00	63.58	12.95	0.38	0.00	0.00	0.00
63.66	12.80	0.37	0.00	0.00	0.00	63.76	12.45	0.36	0.00	0.00	0.00
63.82	12.11	0.35	0.00	0.00	0.00	63.88	11.68	0.33	0.00	0.00	0.00
63.93	11.15	0.32	0.00	0.00	0.00	63.99	10.53	0.30	0.00	0.00	0.00
64.06	10.06	0.28	0.00	0.00	0.00	64.16	9.39	0.27	0.00	0.00	0.00
64.23	9.16	0.25	0.00	0.00	0.00	64.28	8.41	0.24	0.00	0.00	0.00
64.34	8.36	0.23	0.00	0.00	0.00	64.39	8.22	0.22	0.00	0.00	0.00
64.48	8.07	0.22	0.00	0.00	0.00	64.52	7.98	0.21	0.00	0.00	0.00
64.61	7.89	0.21	0.00	0.00	0.00	64.65	7.75	0.21	0.00	0.00	0.00
64.70	7.69	0.20	0.00	0.00	0.00	64.80	7.69	0.20	0.00	0.00	0.00
64.85	7.78	0.21	0.00	0.00	0.00	64.92	7.78	0.21	0.00	0.00	0.00
65.00	7.83	0.21	0.00	0.00	0.00	65.07	7.82	0.21	0.00	0.00	0.00
65.13	7.82	0.21	0.00	0.00	0.00	65.18	7.73	0.21	0.00	0.00	0.00
65.25	7.86	0.21	0.00	0.00	0.00	65.31	7.86	0.21	0.00	0.00	0.00
65.40	7.86	0.21	0.00	0.00	0.00	65.45	7.85	0.21	0.00	0.00	0.00
65.53	8.08	0.21	0.00	0.00	0.00	65.62	7.98	0.21	0.00	0.00	0.00
65.68	7.89	0.21	0.00	0.00	0.00	65.75	7.89	0.21	0.00	0.00	0.00
65.84	7.89	0.22	0.00	0.00	0.00	65.91	8.94	0.25	0.00	0.00	0.00
66.02	10.76	0.28	0.00	0.00	0.00	66.08	10.52	0.29	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
66.15	10.05	0.28	0.00	0.00	0.00	66.24	9.30	0.27	0.00	0.00	0.00
66.30	10.09	0.27	0.00	0.00	0.00	66.37	9.34	0.27	0.00	0.00	0.00
66.41	10.13	0.26	0.00	0.00	0.00	66.54	9.24	0.26	0.00	0.00	0.00
66.59	9.01	0.26	0.00	0.00	0.00	66.64	9.61	0.36	0.00	0.00	0.00
66.69	18.61	0.61	0.00	0.00	0.00	66.76	34.47	2.00	0.00	0.00	0.00
66.81	128.90	2.00	0.00	0.00	0.00	66.87	151.67	2.00	0.00	0.00	0.00
66.93	124.98	2.00	0.00	0.00	0.00	67.02	208.41	2.00	0.00	0.00	0.00
67.07	245.91	2.00	0.00	0.00	0.00	67.14	254.00	2.00	0.00	0.00	0.00
67.20	254.00	2.00	0.00	0.00	0.00	67.28	254.00	2.00	0.00	0.00	0.00
67.38	254.00	2.00	0.00	0.00	0.00	67.39	254.00	2.00	0.00	0.00	0.00
67.47	254.00	2.00	0.00	0.00	0.00	67.56	254.00	2.00	0.00	0.00	0.00
67.60	254.00	2.00	0.00	0.00	0.00	67.66	254.00	2.00	0.00	0.00	0.00
67.73	254.00	2.00	0.00	0.00	0.00	67.82	254.00	2.00	0.00	0.00	0.00
67.87	254.00	2.00	0.00	0.00	0.00	67.95	254.00	2.00	0.00	0.00	0.00
68.04	254.00	2.00	0.00	0.00	0.00	68.08	254.00	2.00	0.00	0.00	0.00
68.13	254.00	2.00	0.00	0.00	0.00	68.22	254.00	2.00	0.00	0.00	0.00
68.26	254.00	2.00	0.00	0.00	0.00	68.35	254.00	2.00	0.00	0.00	0.00
68.39	254.00	2.00	0.00	0.00	0.00	68.49	254.00	2.00	0.00	0.00	0.00
68.53	254.00	2.00	0.00	0.00	0.00	68.61	254.00	2.00	0.00	0.00	0.00
68.66	254.00	2.00	0.00	0.00	0.00	68.70	254.00	2.00	0.00	0.00	0.00
68.77	252.56	2.00	0.00	0.00	0.00	68.87	246.98	2.00	0.00	0.00	0.00
68.92	241.69	2.00	0.00	0.00	0.00	68.96	237.72	2.00	0.00	0.00	0.00
69.05	225.51	2.00	0.00	0.00	0.00	69.11	219.98	2.00	0.00	0.00	0.00
69.18	216.76	2.00	0.00	0.00	0.00	69.27	210.52	2.00	0.00	0.00	0.00
69.30	195.19	1.48	0.00	0.00	0.00	69.37	190.30	1.17	0.00	0.00	0.00
69.42	182.86	0.85	0.00	0.00	0.00	69.51	174.40	0.61	0.00	0.00	0.00
69.59	169.05	0.51	0.00	0.00	0.00	69.63	163.81	0.44	0.00	0.00	0.00
69.71	159.91	0.39	0.00	0.00	0.00	69.77	157.65	0.37	0.00	0.00	0.00
69.83	157.14	0.36	0.00	0.00	0.00	69.90	157.70	0.37	0.00	0.00	0.00
69.95	158.57	0.38	0.00	0.00	0.00	70.03	163.12	0.43	0.00	0.00	0.00
70.09	168.11	0.50	0.00	0.00	0.00	70.16	168.29	0.50	0.00	0.00	0.00
70.23	168.31	0.50	0.00	0.00	0.00	70.28	167.41	0.49	0.00	0.00	0.00
70.39	169.99	0.53	0.00	0.00	0.00	70.43	173.09	0.59	0.00	0.00	0.00
70.51	176.92	0.67	0.00	0.00	0.00	70.54	181.37	0.80	0.00	0.00	0.00
70.62	191.83	1.26	0.00	0.00	0.00	70.70	202.69	2.00	0.00	0.00	0.00
70.74	207.00	2.00	0.00	0.00	0.00	70.82	211.07	2.00	0.00	0.00	0.00
70.87	211.54	2.00	0.00	0.00	0.00	70.96	211.64	2.00	0.00	0.00	0.00
71.00	211.61	2.00	0.00	0.00	0.00	71.08	211.70	2.00	0.00	0.00	0.00
71.13	213.40	2.00	0.00	0.00	0.00	71.22	215.76	2.00	0.00	0.00	0.00
71.26	216.69	2.00	0.00	0.00	0.00	71.35	218.36	2.00	0.00	0.00	0.00
71.40	220.34	2.00	0.00	0.00	0.00	71.48	238.11	2.00	0.00	0.00	0.00
71.56	245.30	2.00	0.00	0.00	0.00	71.62	249.14	2.00	0.00	0.00	0.00
71.66	249.39	2.00	0.00	0.00	0.00	71.76	243.37	2.00	0.00	0.00	0.00
71.84	242.47	2.00	0.00	0.00	0.00	71.88	240.78	2.00	0.00	0.00	0.00
71.94	237.90	2.00	0.00	0.00	0.00	71.99	234.30	2.00	0.00	0.00	0.00
72.07	211.21	2.00	0.00	0.00	0.00	72.15	201.53	2.00	0.00	0.00	0.00
72.22	187.25	1.03	0.00	0.00	0.00	72.28	187.30	1.03	0.00	0.00	0.00
72.33	188.97	1.11	0.00	0.00	0.00	72.38	192.77	1.32	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
72.46	199.11	1.81	0.00	0.00	0.00	72.54	213.30	2.00	0.00	0.00	0.00
72.59	190.95	1.21	0.00	0.00	0.00	72.64	199.55	1.85	0.00	0.00	0.00
72.71	177.27	0.68	0.00	0.00	0.00	72.81	214.73	2.00	0.00	0.00	0.00
72.85	226.07	2.00	0.00	0.00	0.00	72.93	251.68	2.00	0.00	0.00	0.00
72.99	254.00	2.00	0.00	0.00	0.00	73.03	254.00	2.00	0.00	0.00	0.00
73.12	254.00	2.00	0.00	0.00	0.00	73.18	254.00	2.00	0.00	0.00	0.00
73.25	254.00	2.00	0.00	0.00	0.00	73.31	254.00	2.00	0.00	0.00	0.00
73.38	254.00	2.00	0.00	0.00	0.00	73.44	254.00	2.00	0.00	0.00	0.00
73.51	254.00	2.00	0.00	0.00	0.00	73.56	254.00	2.00	0.00	0.00	0.00
73.64	254.00	2.00	0.00	0.00	0.00	73.69	254.00	2.00	0.00	0.00	0.00
73.78	254.00	2.00	0.00	0.00	0.00	73.82	254.00	2.00	0.00	0.00	0.00
73.90	254.00	2.00	0.00	0.00	0.00	73.96	254.00	2.00	0.00	0.00	0.00
74.05	254.00	2.00	0.00	0.00	0.00	74.09	254.00	2.00	0.00	0.00	0.00
74.18	254.00	2.00	0.00	0.00	0.00	74.22	254.00	2.00	0.00	0.00	0.00
74.31	254.00	2.00	0.00	0.00	0.00	74.36	254.00	2.00	0.00	0.00	0.00
74.49	254.00	2.00	0.00	0.00	0.00	74.55	254.00	2.00	0.00	0.00	0.00
74.57	254.00	2.00	0.00	0.00	0.00	74.61	254.00	2.00	0.00	0.00	0.00
74.70	254.00	2.00	0.00	0.00	0.00	74.75	254.00	2.00	0.00	0.00	0.00
74.84	254.00	2.00	0.00	0.00	0.00	74.88	254.00	2.00	0.00	0.00	0.00
74.94	254.00	2.00	0.00	0.00	0.00	75.01	254.00	2.00	0.00	0.00	0.00
75.10	253.95	2.00	0.00	0.00	0.00	75.15	252.96	2.00	0.00	0.00	0.00
75.23	250.34	2.00	0.00	0.00	0.00	75.27	248.71	2.00	0.00	0.00	0.00
75.33	244.27	2.00	0.00	0.00	0.00	75.40	239.96	2.00	0.00	0.00	0.00
75.50	234.48	2.00	0.00	0.00	0.00	75.56	232.24	2.00	0.00	0.00	0.00
75.63	229.37	2.00	0.00	0.00	0.00	75.67	226.37	2.00	0.00	0.00	0.00
75.76	217.94	2.00	0.00	0.00	0.00	75.79	216.43	2.00	0.00	0.00	0.00
75.89	215.46	2.00	0.00	0.00	0.00	75.93	215.15	2.00	0.00	0.00	0.00
76.02	213.23	2.00	0.00	0.00	0.00	76.06	211.98	2.00	0.00	0.00	0.00
76.16	208.51	2.00	0.00	0.00	0.00	76.19	206.50	2.00	0.00	0.00	0.00
76.29	200.52	1.95	0.00	0.00	0.00	76.33	198.78	1.78	0.00	0.00	0.00
76.38	194.21	1.42	0.00	0.00	0.00	76.46	191.13	1.23	0.00	0.00	0.00
76.51	189.84	1.16	0.00	0.00	0.00	76.60	188.94	1.11	0.00	0.00	0.00
76.65	186.91	1.02	0.00	0.00	0.00	76.73	184.47	0.92	0.00	0.00	0.00
76.79	180.87	0.79	0.00	0.00	0.00	76.86	179.21	0.74	0.00	0.00	0.00
76.91	178.76	0.73	0.00	0.00	0.00	76.99	176.71	0.68	0.00	0.00	0.00
77.08	173.62	0.61	0.00	0.00	0.00	77.12	171.15	0.56	0.00	0.00	0.00
77.22	167.17	0.49	0.00	0.00	0.00	77.26	165.90	0.47	0.00	0.00	0.00
77.30	164.63	0.45	0.00	0.00	0.00	77.39	162.18	0.42	0.00	0.00	0.00
77.45	160.60	0.41	0.00	0.00	0.00	77.52	158.56	0.38	0.00	0.00	0.00
77.56	157.09	0.37	0.00	0.00	0.00	77.63	155.31	0.35	0.00	0.00	0.00
77.71	152.09	0.33	0.00	0.00	0.00	77.77	144.66	0.28	0.00	0.00	0.00
77.82	145.78	0.29	0.00	0.00	0.00	77.92	146.74	0.29	0.00	0.00	0.00
77.97	145.90	0.29	0.00	0.00	0.00	78.05	144.29	0.28	0.00	0.00	0.00
78.10	143.17	0.27	0.00	0.00	0.00	78.16	142.54	0.27	0.00	0.00	0.00
78.23	141.11	0.26	0.00	0.00	0.00	78.32	138.89	0.25	0.00	0.00	0.00
78.36	137.63	0.25	0.00	0.00	0.00	78.45	133.30	0.23	0.00	0.00	0.00
78.49	132.27	0.22	0.00	0.00	0.00	78.57	129.47	0.22	0.00	0.00	0.00
78.62	128.39	0.21	0.00	0.00	0.00	78.75	125.46	0.20	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
78.79	125.23	0.20	0.00	0.00	0.00	78.82	124.17	0.20	0.00	0.00	0.00
78.90	121.70	0.19	0.00	0.00	0.00	78.95	120.04	0.19	0.00	0.00	0.00
79.05	118.23	0.19	0.00	0.00	0.00	79.08	117.03	0.18	0.00	0.00	0.00
79.15	114.78	0.18	0.00	0.00	0.00	79.24	111.89	0.17	0.00	0.00	0.00
79.28	110.88	0.17	0.00	0.00	0.00	79.38	108.62	0.17	0.00	0.00	0.00
79.44	107.54	0.16	0.00	0.00	0.00	79.49	106.56	0.16	0.00	0.00	0.00
79.54	105.63	0.16	0.00	0.00	0.00	79.63	101.27	2.00	0.00	0.00	0.00
79.68	101.81	2.00	0.00	0.00	0.00	79.77	112.43	2.00	0.00	0.00	0.00
79.82	128.16	2.00	0.00	0.00	0.00	79.87	135.05	2.00	0.00	0.00	0.00
80.01	100.29	2.00	0.00	0.00	0.00	80.08	30.35	2.00	0.00	0.00	0.00
80.12	25.48	2.00	0.00	0.00	0.00	80.17	23.45	2.00	0.00	0.00	0.00
80.21	22.20	2.00	0.00	0.00	0.00	80.26	20.66	0.57	0.00	0.00	0.00
80.36	16.71	0.51	0.00	0.00	0.00	80.41	15.32	0.44	0.00	0.00	0.00
80.45	14.69	0.42	0.00	0.00	0.00	80.51	14.55	0.42	0.00	0.00	0.00
80.60	14.95	0.43	0.00	0.00	0.00	80.65	15.86	2.00	0.00	0.00	0.00
80.75	24.23	2.00	0.00	0.00	0.00	80.87	101.65	2.00	0.00	0.00	0.00
80.91	101.47	2.00	0.00	0.00	0.00	80.97	103.42	2.00	0.00	0.00	0.00
81.09	34.05	2.00	0.00	0.00	0.00	81.14	26.43	2.00	0.00	0.00	0.00
81.18	23.45	2.00	0.00	0.00	0.00	81.24	21.23	2.00	0.00	0.00	0.00
81.33	17.47	0.52	0.00	0.00	0.00	81.39	15.35	0.44	0.00	0.00	0.00
81.44	13.67	0.41	0.00	0.00	0.00	81.52	14.12	0.39	0.00	0.00	0.00
81.57	13.75	0.39	0.00	0.00	0.00	81.65	13.26	0.37	0.00	0.00	0.00
81.71	12.59	0.35	0.00	0.00	0.00	81.79	11.83	0.33	0.00	0.00	0.00
81.88	11.43	0.32	0.00	0.00	0.00	81.91	11.21	0.31	0.00	0.00	0.00
82.02	11.12	0.31	0.00	0.00	0.00	82.03	11.29	0.31	0.00	0.00	0.00
82.11	11.77	0.32	0.00	0.00	0.00	82.19	11.99	0.33	0.00	0.00	0.00
82.24	11.94	0.33	0.00	0.00	0.00	82.30	12.16	0.35	0.00	0.00	0.00
82.41	13.84	0.38	0.00	0.00	0.00	82.45	14.38	0.41	0.00	0.00	0.00
82.50	15.00	0.41	0.00	0.00	0.00	82.58	14.50	0.42	0.00	0.00	0.00
82.63	14.50	0.41	0.00	0.00	0.00	82.72	14.49	0.41	0.00	0.00	0.00
82.76	14.49	0.45	0.00	0.00	0.00	82.85	17.95	0.49	0.00	0.00	0.00
82.90	19.15	0.54	0.00	0.00	0.00	82.98	18.82	0.53	0.00	0.00	0.00
83.03	17.61	0.50	0.00	0.00	0.00	83.09	15.64	0.46	0.00	0.00	0.00
83.17	14.73	0.43	0.00	0.00	0.00	83.20	15.00	0.43	0.00	0.00	0.00
83.29	15.85	0.45	0.00	0.00	0.00	83.36	16.57	0.46	0.00	0.00	0.00
83.43	15.97	0.47	0.00	0.00	0.00	83.48	16.40	0.45	0.00	0.00	0.00
83.60	14.61	0.45	0.00	0.00	0.00	83.65	16.23	0.47	0.00	0.00	0.00
83.71	18.57	0.55	0.00	0.00	0.00	83.77	22.27	2.00	0.00	0.00	0.00
83.82	33.04	2.00	0.00	0.00	0.00	83.87	116.40	2.00	0.00	0.00	0.00
83.99	169.44	2.00	0.00	0.00	0.00	84.04	162.46	2.00	0.00	0.00	0.00
84.08	163.58	2.00	0.00	0.00	0.00	84.13	127.92	2.00	0.00	0.00	0.00
84.21	146.55	2.00	0.00	0.00	0.00	84.26	147.61	2.00	0.00	0.00	0.00
84.35	154.74	0.35	0.00	0.00	0.00	84.39	156.80	0.37	0.00	0.00	0.00
84.46	154.12	0.35	0.00	0.00	0.00	84.52	149.14	0.31	0.00	0.00	0.00
84.61	139.74	0.26	0.00	0.00	0.00	84.65	146.57	0.29	0.00	0.00	0.00
84.74	144.74	0.28	0.00	0.00	0.00	84.79	153.54	0.34	0.00	0.00	0.00
84.87	150.12	0.32	0.00	0.00	0.00	84.92	158.15	0.39	0.00	0.00	0.00
85.01	149.06	0.31	0.00	0.00	0.00	85.06	152.74	0.34	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
85.14	150.48	0.32	0.00	0.00	0.00	85.19	149.36	0.31	0.00	0.00	0.00
85.28	146.58	0.30	0.00	0.00	0.00	85.31	146.47	0.29	0.00	0.00	0.00
85.41	143.34	0.28	0.00	0.00	0.00	85.45	142.85	0.27	0.00	0.00	0.00
85.54	144.64	0.28	0.00	0.00	0.00	85.62	147.64	0.30	0.00	0.00	0.00
85.64	147.97	0.30	0.00	0.00	0.00	85.72	151.63	0.33	0.00	0.00	0.00
85.77	152.54	0.34	0.00	0.00	0.00	85.84	154.25	0.35	0.00	0.00	0.00
85.94	156.73	0.37	0.00	0.00	0.00	85.98	157.52	0.38	0.00	0.00	0.00
86.07	162.86	0.44	0.00	0.00	0.00	86.11	163.95	0.45	0.00	0.00	0.00
86.18	168.32	0.52	0.00	0.00	0.00	86.26	171.98	0.58	0.00	0.00	0.00
86.31	173.13	0.60	0.00	0.00	0.00	86.38	173.60	0.61	0.00	0.00	0.00
86.42	175.74	0.66	0.00	0.00	0.00	86.51	176.11	0.67	0.00	0.00	0.00
86.55	178.24	0.73	0.00	0.00	0.00	86.63	181.30	0.82	0.00	0.00	0.00
86.68	181.43	0.82	0.00	0.00	0.00	86.77	184.80	0.94	0.00	0.00	0.00
86.87	188.44	1.10	0.00	0.00	0.00	86.98	194.70	1.46	0.00	0.00	0.00
87.03	192.39	1.31	0.00	0.00	0.00	87.08	197.56	1.68	0.00	0.00	0.00
87.15	197.54	1.68	0.00	0.00	0.00	87.23	197.75	1.70	0.00	0.00	0.00
87.29	195.19	1.50	0.00	0.00	0.00	87.34	191.41	1.25	0.00	0.00	0.00
87.43	191.87	1.28	0.00	0.00	0.00	87.48	186.76	1.02	0.00	0.00	0.00
87.57	177.14	0.70	0.00	0.00	0.00	87.61	165.83	0.48	0.00	0.00	0.00
87.69	152.98	0.34	0.00	0.00	0.00	87.74	137.98	0.25	0.00	0.00	0.00
87.82	128.61	0.22	0.00	0.00	0.00	87.86	127.77	0.21	0.00	0.00	0.00
87.96	124.05	0.20	0.00	0.00	0.00	88.01	128.17	0.22	0.00	0.00	0.00
88.09	127.90	0.22	0.00	0.00	0.00	88.14	126.97	0.21	0.00	0.00	0.00
88.22	126.40	0.21	0.00	0.00	0.00	88.27	127.19	0.21	0.00	0.00	0.00
88.36	128.42	0.22	0.00	0.00	0.00	88.40	128.72	0.22	0.00	0.00	0.00
88.48	127.51	0.21	0.00	0.00	0.00	88.53	123.77	0.20	0.00	0.00	0.00
88.61	119.46	0.19	0.00	0.00	0.00	88.67	116.02	0.18	0.00	0.00	0.00
88.75	114.10	2.00	0.00	0.00	0.00	88.79	116.83	2.00	0.00	0.00	0.00
88.91	105.16	2.00	0.00	0.00	0.00	88.94	103.98	2.00	0.00	0.00	0.00
89.01	96.81	2.00	0.00	0.00	0.00	89.06	95.68	2.00	0.00	0.00	0.00
89.13	92.86	2.00	0.00	0.00	0.00	89.19	32.78	2.00	0.00	0.00	0.00
89.28	29.25	2.00	0.00	0.00	0.00	89.32	26.82	2.00	0.00	0.00	0.00
89.40	25.19	2.00	0.00	0.00	0.00	89.44	23.09	2.00	0.00	0.00	0.00
89.53	21.58	2.00	0.00	0.00	0.00	89.57	19.50	0.56	0.00	0.00	0.00
89.66	17.59	0.52	0.00	0.00	0.00	89.71	17.86	2.00	0.00	0.00	0.00
89.79	27.25	2.00	0.00	0.00	0.00	89.84	106.04	2.00	0.00	0.00	0.00
89.97	137.86	2.00	0.00	0.00	0.00	90.00	125.67	2.00	0.00	0.00	0.00
90.03	123.52	2.00	0.00	0.00	0.00	90.10	115.85	2.00	0.00	0.00	0.00
90.18	110.80	2.00	0.00	0.00	0.00	90.24	106.64	2.00	0.00	0.00	0.00
90.32	105.48	2.00	0.00	0.00	0.00	90.36	107.05	2.00	0.00	0.00	0.00
90.50	102.10	2.00	0.00	0.00	0.00	90.54	101.14	2.00	0.00	0.00	0.00
90.58	99.32	2.00	0.00	0.00	0.00	90.63	36.03	2.00	0.00	0.00	0.00
90.71	34.15	2.00	0.00	0.00	0.00	90.76	33.81	2.00	0.00	0.00	0.00
90.85	32.54	2.00	0.00	0.00	0.00	90.89	32.61	2.00	0.00	0.00	0.00
90.98	37.28	2.00	0.00	0.00	0.00	91.02	102.45	2.00	0.00	0.00	0.00
91.13	118.77	2.00	0.00	0.00	0.00	91.22	123.08	2.00	0.00	0.00	0.00
91.25	123.57	2.00	0.00	0.00	0.00	91.30	124.76	2.00	0.00	0.00	0.00
91.37	126.58	2.00	0.00	0.00	0.00	91.46	130.36	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
91.51	125.45	2.00	0.00	0.00	0.00	91.55	120.79	2.00	0.00	0.00	0.00
91.63	116.57	2.00	0.00	0.00	0.00	91.68	109.51	2.00	0.00	0.00	0.00
91.77	106.97	0.17	0.00	0.00	0.00	91.81	101.01	0.16	0.00	0.00	0.00
91.90	99.01	2.00	0.00	0.00	0.00	91.95	101.49	2.00	0.00	0.00	0.00
92.05	99.95	2.00	0.00	0.00	0.00	92.12	103.72	2.00	0.00	0.00	0.00
92.17	103.59	2.00	0.00	0.00	0.00	92.21	101.35	2.00	0.00	0.00	0.00
92.30	98.17	2.00	0.00	0.00	0.00	92.34	95.50	2.00	0.00	0.00	0.00
92.41	93.26	2.00	0.00	0.00	0.00	92.48	91.85	2.00	0.00	0.00	0.00
92.53	89.89	2.00	0.00	0.00	0.00	92.60	28.09	2.00	0.00	0.00	0.00
92.72	23.90	2.00	0.00	0.00	0.00	92.74	20.45	2.00	0.00	0.00	0.00
92.81	23.12	0.62	0.00	0.00	0.00	92.86	21.87	0.61	0.00	0.00	0.00
92.92	19.24	0.60	0.00	0.00	0.00	93.00	21.80	0.57	0.00	0.00	0.00
93.08	19.55	2.00	0.00	0.00	0.00	93.13	21.68	2.00	0.00	0.00	0.00
93.26	25.77	2.00	0.00	0.00	0.00	93.30	26.52	2.00	0.00	0.00	0.00
93.39	27.49	2.00	0.00	0.00	0.00	93.48	32.02	2.00	0.00	0.00	0.00
93.53	103.72	2.00	0.00	0.00	0.00	93.58	108.37	2.00	0.00	0.00	0.00
93.66	113.16	2.00	0.00	0.00	0.00	93.70	112.05	2.00	0.00	0.00	0.00
93.79	97.44	2.00	0.00	0.00	0.00	93.87	25.16	2.00	0.00	0.00	0.00
93.92	19.89	2.00	0.00	0.00	0.00	93.97	16.31	0.46	0.00	0.00	0.00
94.04	13.03	0.39	0.00	0.00	0.00	94.14	13.45	0.38	0.00	0.00	0.00
94.16	14.73	0.40	0.00	0.00	0.00	94.23	14.86	0.36	0.00	0.00	0.00
94.36	10.34	0.30	0.00	0.00	0.00	94.40	9.06	0.23	0.00	0.00	0.00
94.45	8.33	0.21	0.00	0.00	0.00	94.50	7.64	0.19	0.00	0.00	0.00
94.58	7.36	0.18	0.00	0.00	0.00	94.62	7.96	0.20	0.00	0.00	0.00
94.71	9.62	0.24	0.00	0.00	0.00	94.75	10.73	0.28	0.00	0.00	0.00
94.90	11.39	0.30	0.00	0.00	0.00	94.94	11.47	0.31	0.00	0.00	0.00
94.98	11.60	0.31	0.00	0.00	0.00	95.03	11.68	0.31	0.00	0.00	0.00
95.11	11.55	0.31	0.00	0.00	0.00	95.15	11.34	0.30	0.00	0.00	0.00
95.24	10.84	0.29	0.00	0.00	0.00	95.29	10.51	0.27	0.00	0.00	0.00
95.38	9.64	0.25	0.00	0.00	0.00	95.42	9.27	0.24	0.00	0.00	0.00
95.51	9.11	0.23	0.00	0.00	0.00	95.55	9.35	0.24	0.00	0.00	0.00
95.65	10.16	0.25	0.00	0.00	0.00	95.68	9.35	0.27	0.00	0.00	0.00
95.74	11.90	0.31	0.00	0.00	0.00	95.82	13.24	0.35	0.00	0.00	0.00
95.87	14.00	0.39	0.00	0.00	0.00	95.94	15.24	0.42	0.00	0.00	0.00
96.00	16.66	0.46	0.00	0.00	0.00	96.07	17.89	0.50	0.00	0.00	0.00
96.14	19.03	2.00	0.00	0.00	0.00	96.22	20.27	2.00	0.00	0.00	0.00
96.28	22.67	2.00	0.00	0.00	0.00	96.36	26.54	2.00	0.00	0.00	0.00
96.39	28.78	2.00	0.00	0.00	0.00	96.49	98.93	2.00	0.00	0.00	0.00
96.53	99.76	2.00	0.00	0.00	0.00	96.60	101.60	2.00	0.00	0.00	0.00
96.66	99.72	2.00	0.00	0.00	0.00	96.74	97.74	2.00	0.00	0.00	0.00
96.80	96.44	2.00	0.00	0.00	0.00	96.87	96.04	2.00	0.00	0.00	0.00
96.93	96.17	2.00	0.00	0.00	0.00	97.02	35.20	2.00	0.00	0.00	0.00
97.06	36.37	2.00	0.00	0.00	0.00	97.13	38.88	2.00	0.00	0.00	0.00
97.19	106.66	2.00	0.00	0.00	0.00	97.28	123.36	2.00	0.00	0.00	0.00
97.32	143.12	2.00	0.00	0.00	0.00	97.39	161.44	2.00	0.00	0.00	0.00
97.46	162.99	2.00	0.00	0.00	0.00	97.54	171.37	2.00	0.00	0.00	0.00
97.59	189.90	2.00	0.00	0.00	0.00	97.65	211.79	2.00	0.00	0.00	0.00
97.72	231.58	2.00	0.00	0.00	0.00	97.78	249.71	2.00	0.00	0.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (in)
97.85	254.00	2.00	0.00	0.00	0.00	97.92	254.00	2.00	0.00	0.00	0.00
97.97	254.00	2.00	0.00	0.00	0.00	98.07	254.00	2.00	0.00	0.00	0.00
98.11	254.00	2.00	0.00	0.00	0.00	98.20	254.00	2.00	0.00	0.00	0.00
98.25	254.00	2.00	0.00	0.00	0.00	98.32	254.00	2.00	0.00	0.00	0.00
98.39	254.00	2.00	0.00	0.00	0.00	98.47	254.00	2.00	0.00	0.00	0.00
98.51	254.00	2.00	0.00	0.00	0.00	98.60	254.00	2.00	0.00	0.00	0.00
98.64	254.00	2.00	0.00	0.00	0.00	98.70	254.00	2.00	0.00	0.00	0.00
98.82	224.06	2.00	0.00	0.00	0.00	98.85	227.43	2.00	0.00	0.00	0.00
98.90	212.14	2.00	0.00	0.00	0.00	98.98	248.41	2.00	0.00	0.00	0.00
99.05	250.81	2.00	0.00	0.00	0.00	99.12	254.00	2.00	0.00	0.00	0.00
99.16	254.00	2.00	0.00	0.00	0.00	99.27	254.00	2.00	0.00	0.00	0.00
99.34	254.00	2.00	0.00	0.00	0.00	99.39	254.00	2.00	0.00	0.00	0.00
99.43	254.00	2.00	0.00	0.00	0.00	99.50	254.00	2.00	0.00	0.00	0.00
99.56	254.00	2.00	0.00	0.00	0.00	99.67	254.00	2.00	0.00	0.00	0.00
99.74	254.00	2.00	0.00	0.00	0.00	99.78	254.00	2.00	0.00	0.00	0.00
99.85	254.00	2.00	0.00	0.00	0.00	99.91	254.00	2.00	0.00	0.00	0.00
99.96	254.00	2.00	0.00	0.00	0.00	100.01	245.84	2.00	0.00	0.00	0.00
100.09	227.74	2.00	0.00	0.00	0.00	100.15	207.95	2.00	0.00	0.00	0.00
100.22	189.11	2.00	0.00	0.00	0.00	100.31	162.91	2.00	0.00	0.00	0.00
100.35	143.27	2.00	0.00	0.00	0.00						

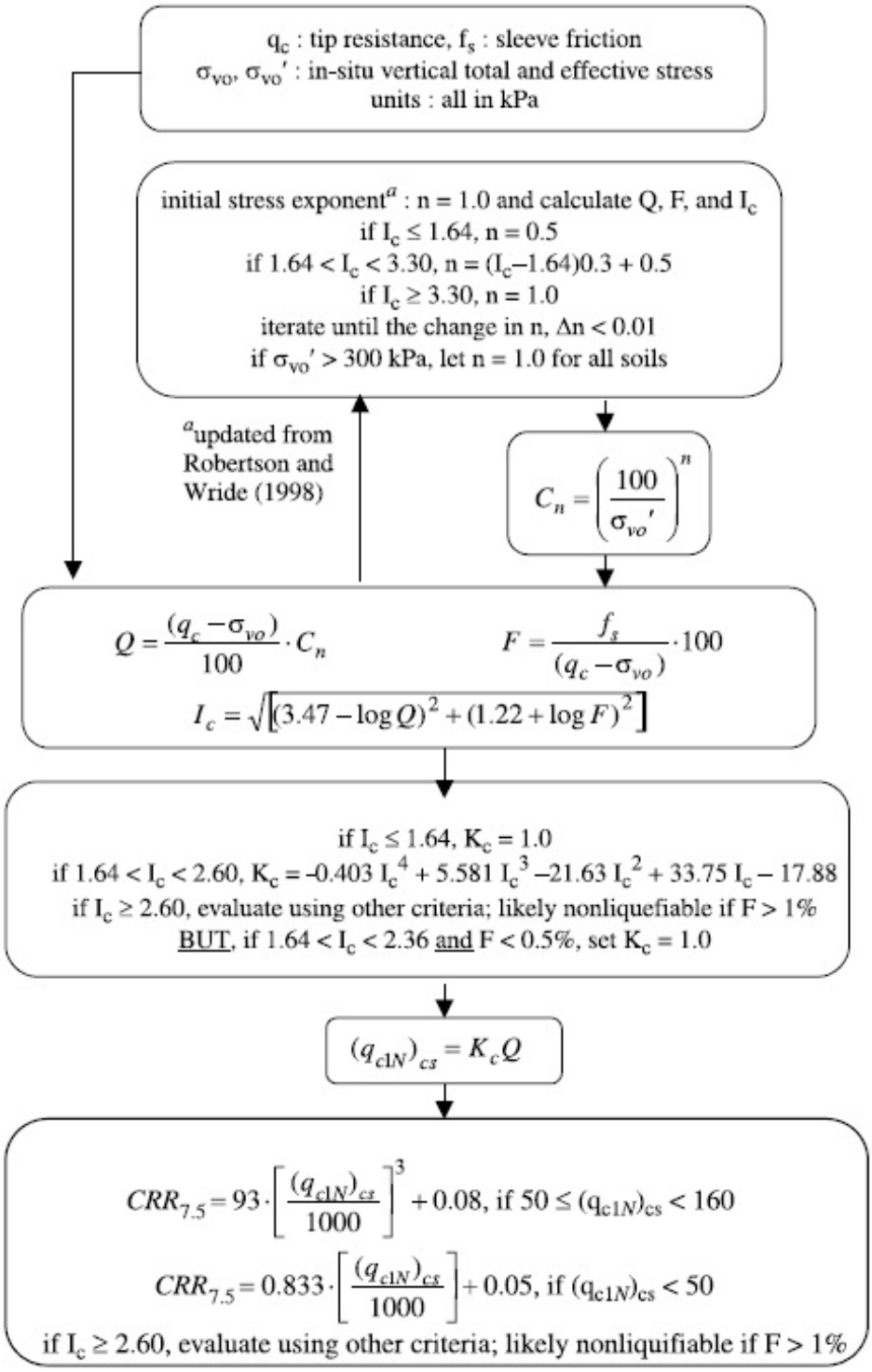
Total estimated settlement: 0.85

Abbreviations

$Q_{tn,cs}$: Equivalent clean sand normalized cone resistance
FS: Factor of safety against liquefaction
e_v (%): Post-liquefaction volumentric strain
DF: e_v depth weighting factor
Settlement: Calculated settlement

Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

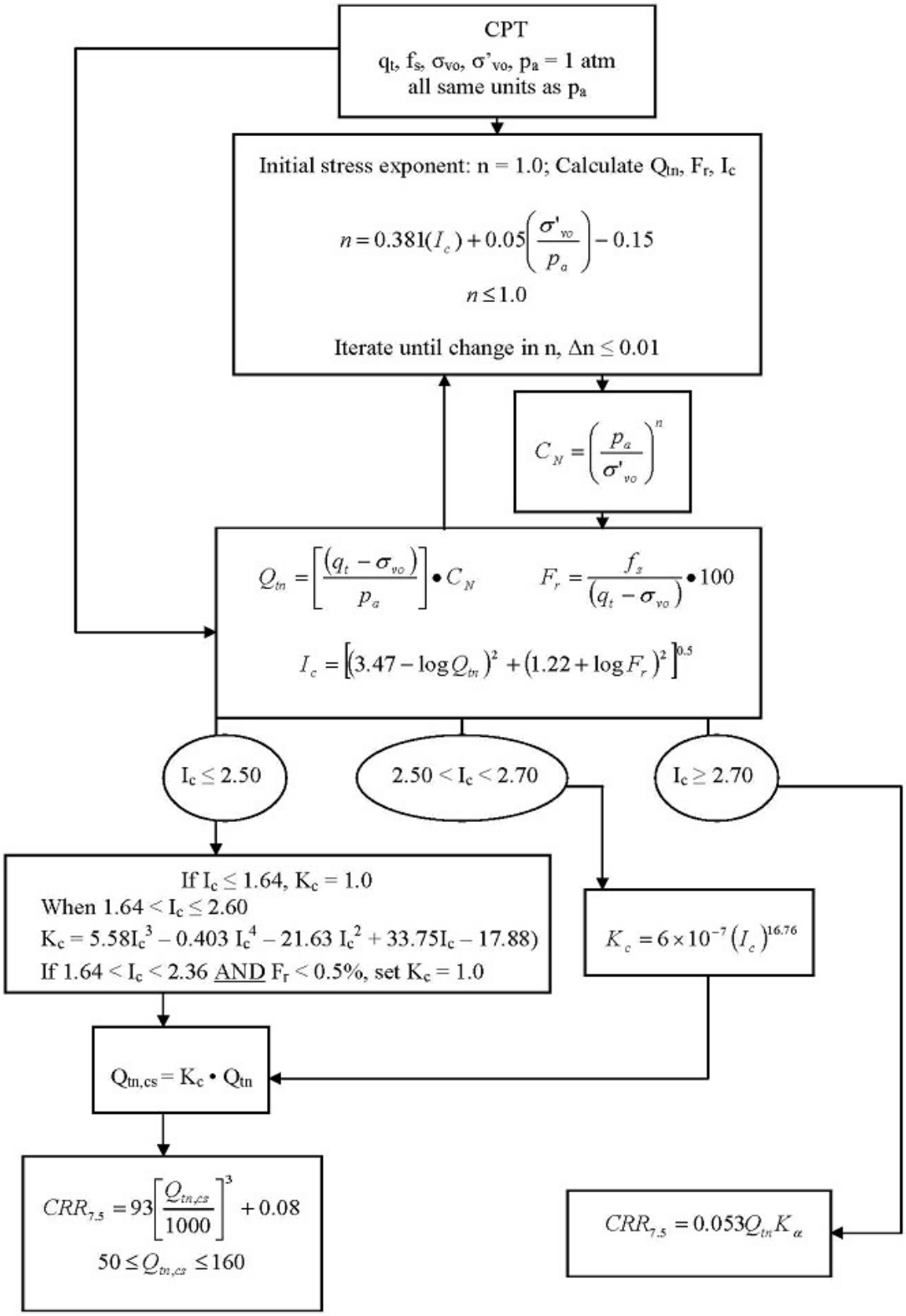
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:



[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

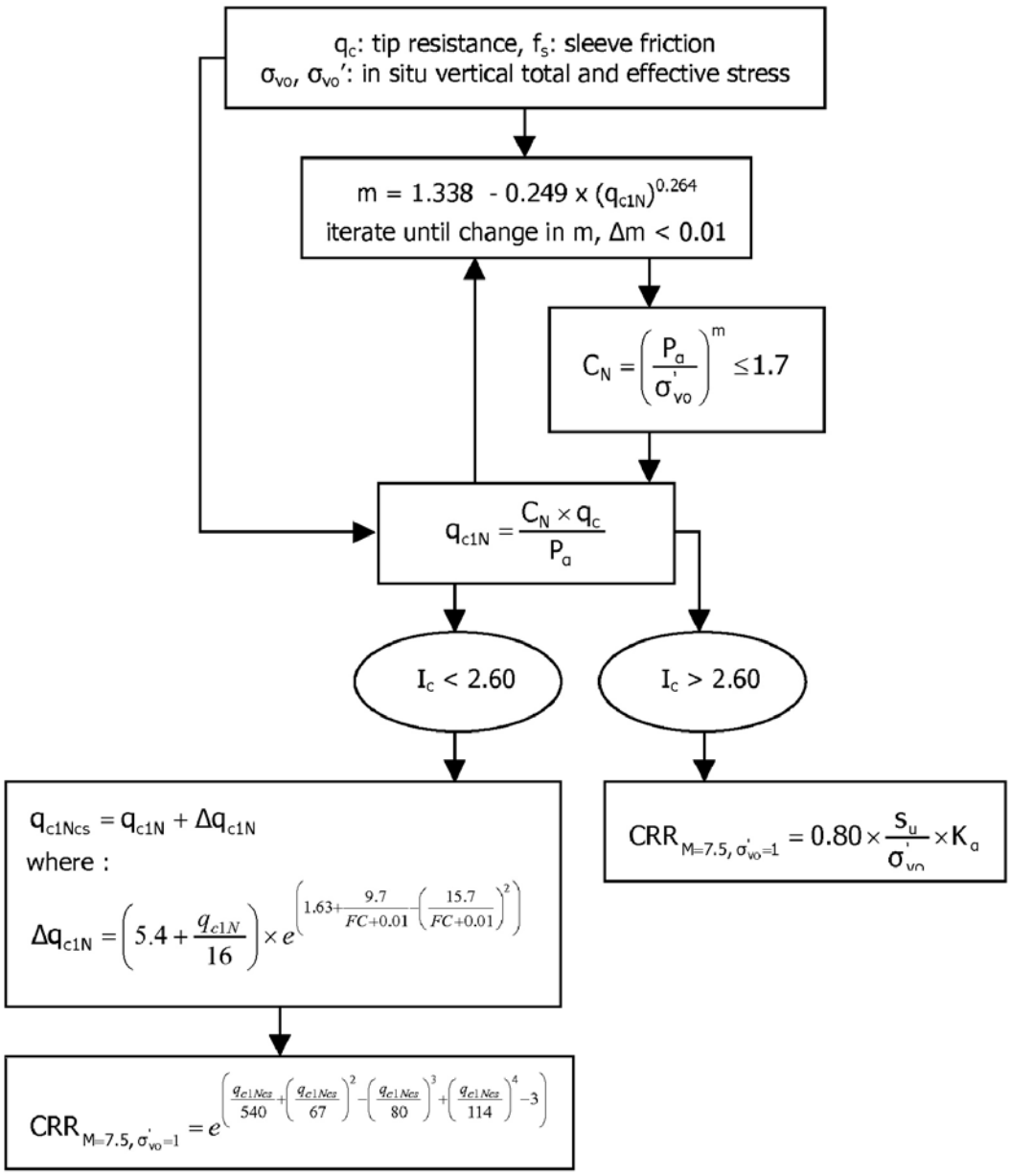
Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:

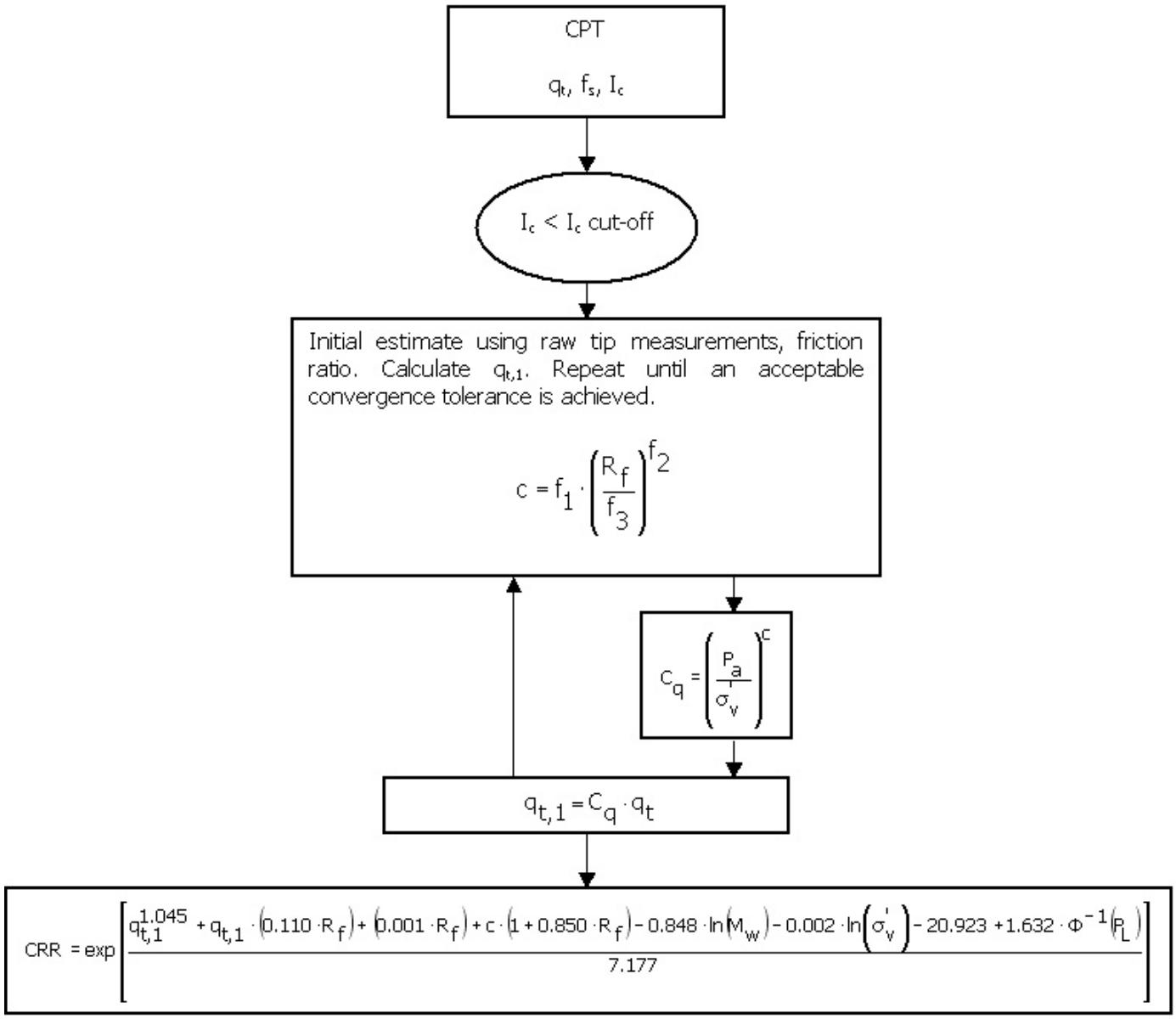


[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)



Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)



Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)

$$FS_{liq} = \frac{CRR_{M=7.5,\sigma'_v=1atm}}{CSR_{M=7.5,\sigma'_v=1atm}}$$

$$CSR_{M=7.5,\sigma'_v=1atm} = 0.65 \frac{\sigma_v}{\sigma'_v} \frac{a_{max}}{g} r_d \frac{1}{MSF} \frac{1}{K_\sigma}$$

$$r_d = \exp\left[\alpha(z) + \beta(z) \cdot M\right]$$

$$\alpha(z) = -1.012 - 1.126 \sin\left(\frac{z}{11.73} + 5.133\right)$$

$$\beta(z) = 0.106 + 0.118 \sin\left(\frac{z}{11.28} + 5.142\right)$$

$$K_\sigma = 1 - C_\sigma \ln\left(\frac{\sigma'_v}{P_a}\right) \le 1.1$$

$$C_\sigma = \frac{1}{37.3 - 8.27\left(q_{c1Ncs}\right)^{0.264}} \le 0.3$$

$$MSF = 1 + \left(MSF_{max} - 1\right)\left(8.64 \exp\left(\frac{-M}{4}\right) - 1.325\right)$$

$$MSF_{max} = 1.09 + \left(\frac{q_{c1Ncs}}{180}\right)^3 \le 2.2$$

σ'_v *and* σ_v *at start of earthquake shaking*

$$CRR_{M=7.5,\sigma'_v=1atm} = \exp\left(\frac{q_{c1Ncs}}{113} + \left(\frac{q_{c1Ncs}}{1000}\right)^2 - \left(\frac{q_{c1Ncs}}{140}\right)^3 + \left(\frac{q_{c1Ncs}}{137}\right)^4 - 2.80\right)$$

$$q_{c1Ncs} = q_{c1N} + \Delta q_{c1N}$$

$$\Delta q_{c1N} = \left(11.9 + \frac{q_{c1N}}{14.6}\right) \exp\left(1.63 - \frac{9.7}{FC+2} - \left(\frac{15.7}{FC+2}\right)^2\right)$$

$$q_{c1N} = C_{Ne} \frac{q_c}{P_a}$$

$$C_{Ne} = \left(\frac{P_a}{\sigma'_v}\right)^m \le 1.7$$

$$m = 1.338 - 0.249\left(q_{c1Ncs}\right)^{0.264} \quad with \quad 0.264 \le m \le 0.782$$

$$FC = 80\left(I_C + C_{FC}\right) - 137 \quad with \quad 0\% \le FC \le 100\%$$

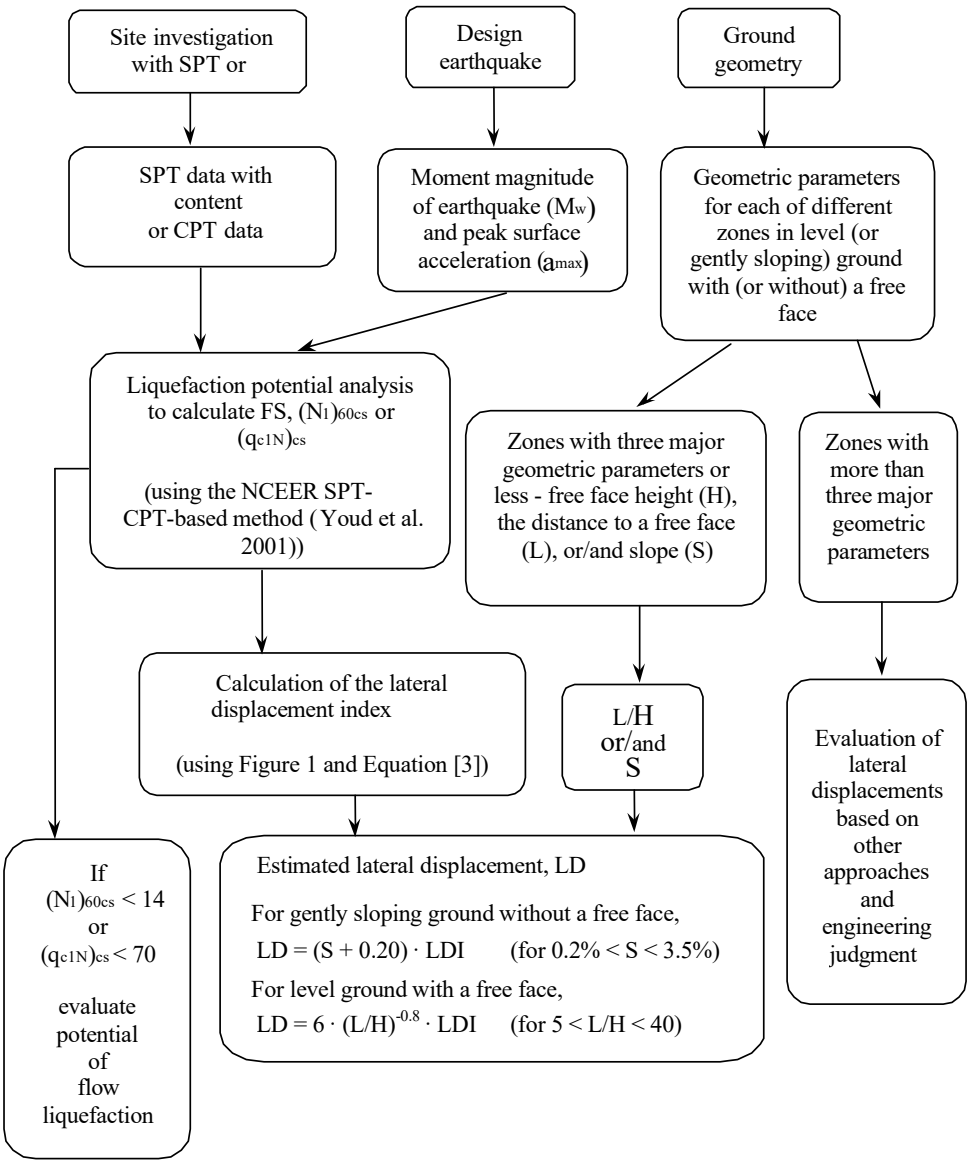
$$I_c = \left[\left(3.47 - \log\left(Q\right)\right)^2 + \left(1.22 + \log\left(F\right)\right)^2\right]^{0.5}$$

$$Q = \left(\frac{q_c - \sigma_{vc}}{P_a}\right)\left(\frac{P_a}{\sigma'_{vc}}\right)^n \; with \; 0.5 \le n \le 1.0 \; per \; Robertson \; \& \; Wride \; (1998)$$

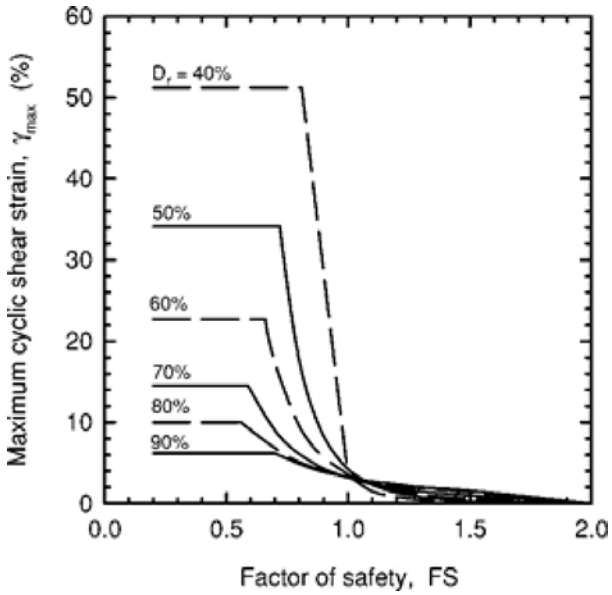
$$F = \left(\frac{f_s}{q_c - \sigma_{vc}}\right) \cdot 100\%$$

σ'_v *at time of CPT sounding*

Procedure for the evaluation of liquefaction-induced lateral spreading displacements



[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



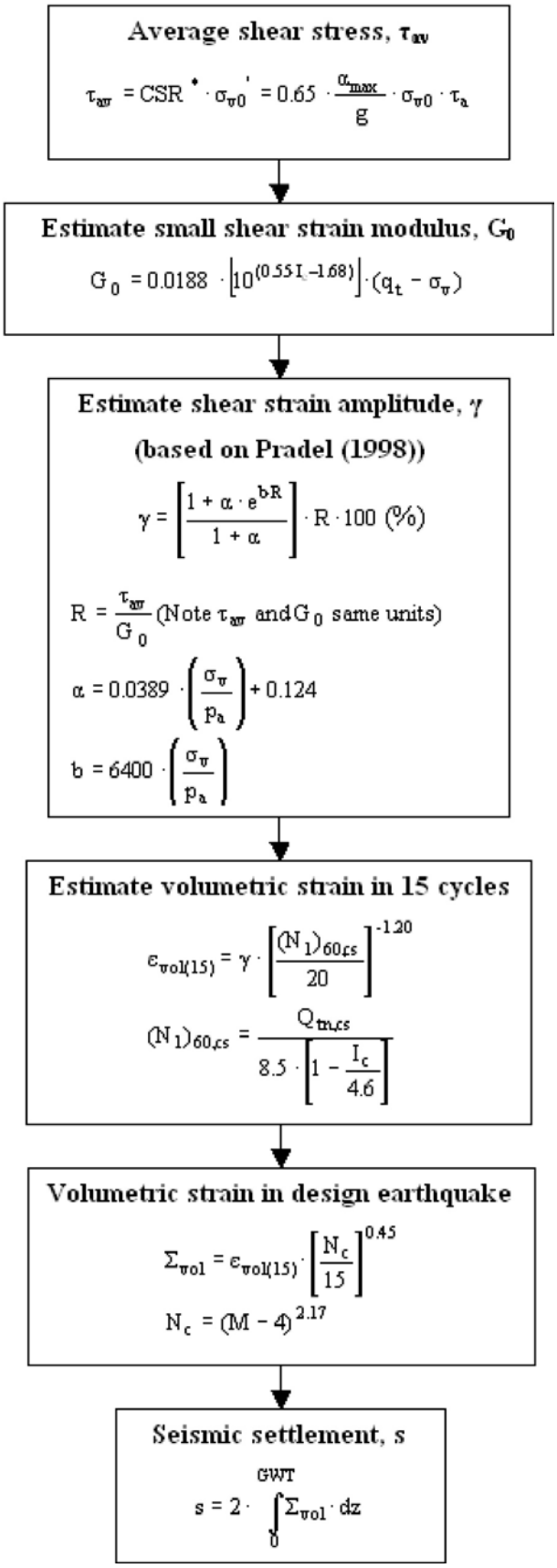
[1] **Figure 1**

$$LDI = \int_0^{z_{max}} \gamma_{max} dz$$

[1] **Equation [3]**

[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

Procedure for the estimation of seismic induced settlements in dry sands



Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA

Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methology developed by Iwasaki (1982) and is adopted by AFPS.

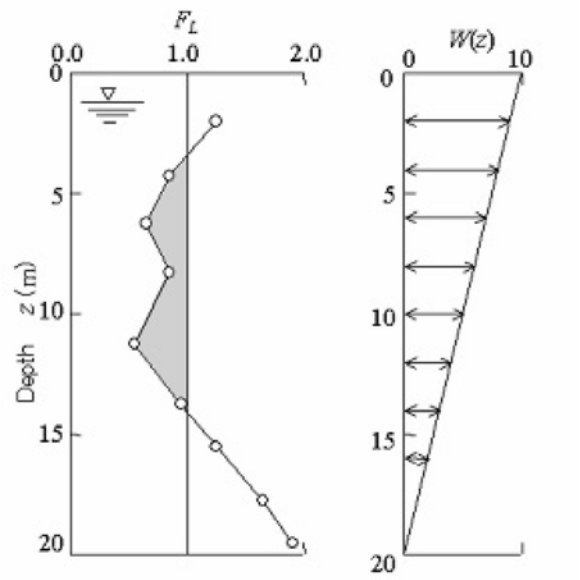
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\mathbf{LPI} = \int_0^{20} (10 - 0{,}5z) \times F_L \times dz$$

where:
F_L = 1 - F.S. when F.S. less than 1
F_L = 0 when F.S. greater than 1
z depth of measurment in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- LPI = 0 : Liquefaction risk is very low
- 0 < LPI <= 5 : Liquefaction risk is low
- 5 < LPI <= 15 : Liquefaction risk is high
- LPI > 15 : Liquefaction risk is very high



Graphical presentation of the LPI calculation procedure

Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε_shear) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

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Appendix D

Pile Capacity Analyses - Summary Outputs

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VERTICAL ANALYSIS SUMMARY OUTPUT
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Date: 11/11/2020 File: K:\31-Geotech\2020\20-31-295, KBK Enterprises, 501-601 E Compton Blvd, Compton\Report\Pile Analysis\CIDH\SSA-CIDH-24in.alp 1.0

Title 1: 24-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

---

* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	24	452.4	75.4	16286.0	3000	0.471	0.0	4	4	0.5	Concrete (smooth)
100.0	24	452.4	75.4							Pile Tip	

Note: Mix = % of Inside material/Outside material

Group Type: 0
Top Type: 2

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3	Silty Sand (SM)	
8.0	50	24	0.3	50	2	1	Soft Clay	
35.0	50	30	0.29	60	75	4	Sand/Gravel	
50.0	70	29	0.46	80	80	4	Silty Sand	
60.0	50	24	0.3	49.8	1.5	1	Soft Clay	
65.0	63	39.0	0.00	120	75	4	Silty Sand (SM)	
80.0	64	24	0.3	150	0.95	1	Soft Clay	

90.0 61 39 0.00 120 75 4 Silty Sand

Surcharge Pressure on ground: 0 -kp/f2

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

TOTAL LOADS:
Vertical Load, Q: 0.0 -kp
Vertical Load with Load Factor, Q: 0.0 -kp
Vertical Load with Load factor and Pile Cap, Q= 0.0 -kp
Load Factor for Vertical Load and Torsion= 1.0
Vertical Loads Supported by Pile Cap: 0 %
Load Factor for Vertical Loads: 1.0

PILE PROFILE:
Pile Length, L= 100.0 -ft
Top Height, H= -15 -ft
Slope Angle, As= 0
Batter Angle, Ab= 0.00 Batter Factor, Kbat= 1.00

*To consider the influence of different soils below the pile tip, bearing stratum is defined
from pile tip extending to 4 Diameter of pile, which is 8.0-ft (Input Page F, Item 3)

SINGLE PILE:
Kdown= 0.7 Kup= 0.4 Ka= 1.00

Single Pile Vertical Analysis:
Total Ultimate Capacity (Down)= 415.429-kp Total Ultimate Capacity (Up)= 387.707-kp
Total Allowable Capacity (Down)= 207.714-kp Total Allowable Capacity (Up)= 189.281-kp

Weight above Ground= 0.00 Total Weight= 27.44-kp *Soil Weight is not included
Side Resistance (Down)= 415.429-kp Side Resistance (Up)= 360.269-kp
Tip Resistance (Down)= 0.000-kp Tip Resistance (Up)= 0.000-kp
Negative Friction, Qneg= -41.130-kp, which has been subtracted from Total Ultimate Capacity (Down)
Negative friction does not affect Total Ultimate Capacity (Up)

At Work Load= 0.00-kp, Settlement= 0.00000-in
At Work Load= 0.00-kp, Secant Stiffness Kqx= 99999.00-kp/-in
At Allowable Settlement= 1.000000-in, Capacity= 385.91-kp
Work Load, 0.00-kp, OK with the Capacity at Allowable Settlement= 1.00000-in, Capacity= 385.91-kp
Work Load, 0.00-kp, OK with the Allowable Capacity (Down)= 207.71-kp

---

FACTOR OF SAFETY:

FSside	FStip	FSuplif	FSweight
2.0	3.0	2.0	3.0

Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.
1 1 1 1 1

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Title 1: 18-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

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* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* % Side	Out Side	In Side	Other Par.	Type
0.0	30	706.9	94.2	39760.8	3000	0.736	0.0	4	4	0.5	Concrete (smooth)
100.0	30	706.9	94.2								Pile Tip

Note: Mix = % of Inside material/Outside material

Group Type: 0
Top Type: 2

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	50	24	0.3	50	2	1		Soft Clay
35.0	50	30	0.29	60	75	4		Sand/Gravel
50.0	70	29	0.46	80	80	4		Silty Sand
60.0	50	24	0.3	49.8	1.5	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)
80.0	64	24	0.3	150	0.95	1		Soft Clay

90.0 61 39 0.00 120 75 4 Silty Sand

Surcharge Pressure on ground: 0 -kp/f2

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

TOTAL LOADS:
Vertical Load, Q: 0.0 -kp
Vertical Load with Load Factor, Q: 0.0 -kp
Vertical Load with Load factor and Pile Cap, Q= 0.0 -kp
Load Factor for Vertical Load and Torsion= 1.0
Vertical Loads Supported by Pile Cap: 0 %
Load Factor for Vertical Loads: 1.0

PILE PROFILE:
Pile Length, L= 100.0 -ft
Top Height, H= -15 -ft
Slope Angle, As= 0
Batter Angle, Ab= 0.00 Batter Factor, Kbat= 1.00

*To consider the influence of different soils below the pile tip, bearing stratum is defined
from pile tip extending to 4 Diameter of pile, which is 10.0-ft (Input Page F, Item 3)

SINGLE PILE:
Kdown= 0.7 Kup= 0.4 Ka= 1.00

Single Pile Vertical Analysis:
Total Ultimate Capacity (Down)= 602.866-kp Total Ultimate Capacity (Up)= 540.892-kp
Total Allowable Capacity (Down)= 301.433-kp Total Allowable Capacity (Up)= 263.300-kp

Weight above Ground= 0.00 Total Weight= 42.88-kp *Soil Weight is not included
Side Resistance (Down)= 602.866-kp Side Resistance (Up)= 498.015-kp
Tip Resistance (Down)= 0.000-kp Tip Resistance (Up)= 0.000-kp
Negative Friction, Qneg= -51.385-kp, which has been subtracted from Total Ultimate Capacity (Down)
Negative friction does not affect Total Ultimate Capacity (Up)

At Work Load= 0.00-kp, Settlement= 0.00000-in
At Work Load= 0.00-kp, Secant Stiffness Kqx= 99999.00-kp/-in
At Allowable Settlement= 1.000000-in, Capacity= 566.14-kp
Work Load, 0.00-kp, OK with the Capacity at Allowable Settlement= 1.00000-in, Capacity= 566.14-kp
Work Load, 0.00-kp, OK with the Allowable Capacity (Down)= 301.43-kp

---

FACTOR OF SAFETY:

FSside	FStip	FSuplif	FSweight
2.0	3.0	2.0	3.0

Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.
1 1 1 1 1

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Title 1: 24-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

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* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	24	452.4	75.4	16286.0	3000	0.471	0.0	4	4	0.5	Concrete (smooth)
100.0	24	452.4	75.4								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 2

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	120	75	4		Sand/Gravel
50.0	70	29	0.46	120	80	4		Silty Sand
60.0	50	24	0.3	125	1.5	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0	64	24	0.3	150	0.95	1	Soft Clay
90.0	61	39	0.00	120	75	4	Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
- Load Factor for Vertical Loads: 1.0
- Load Factor for Lateral Loads: 1.0
- Loads Supported by Pile Cap: 0 %
- Shear Condition: Static

SINGLE PILE:
- (with Load Factor)
- Vertical Load= 210.00 -kp
- Shear= 33.00 -kp
- Moment= 0.00 -kp-f

Results:
- Top Deflection, yt= 0.48900-in
- Max. Moment, M= 111.67-kp-f
- Top Deflection Slope, St= -0.00434

- Top Deflection, 0.4890-in, OK with the Allowable Deflection= 1.00-in

Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

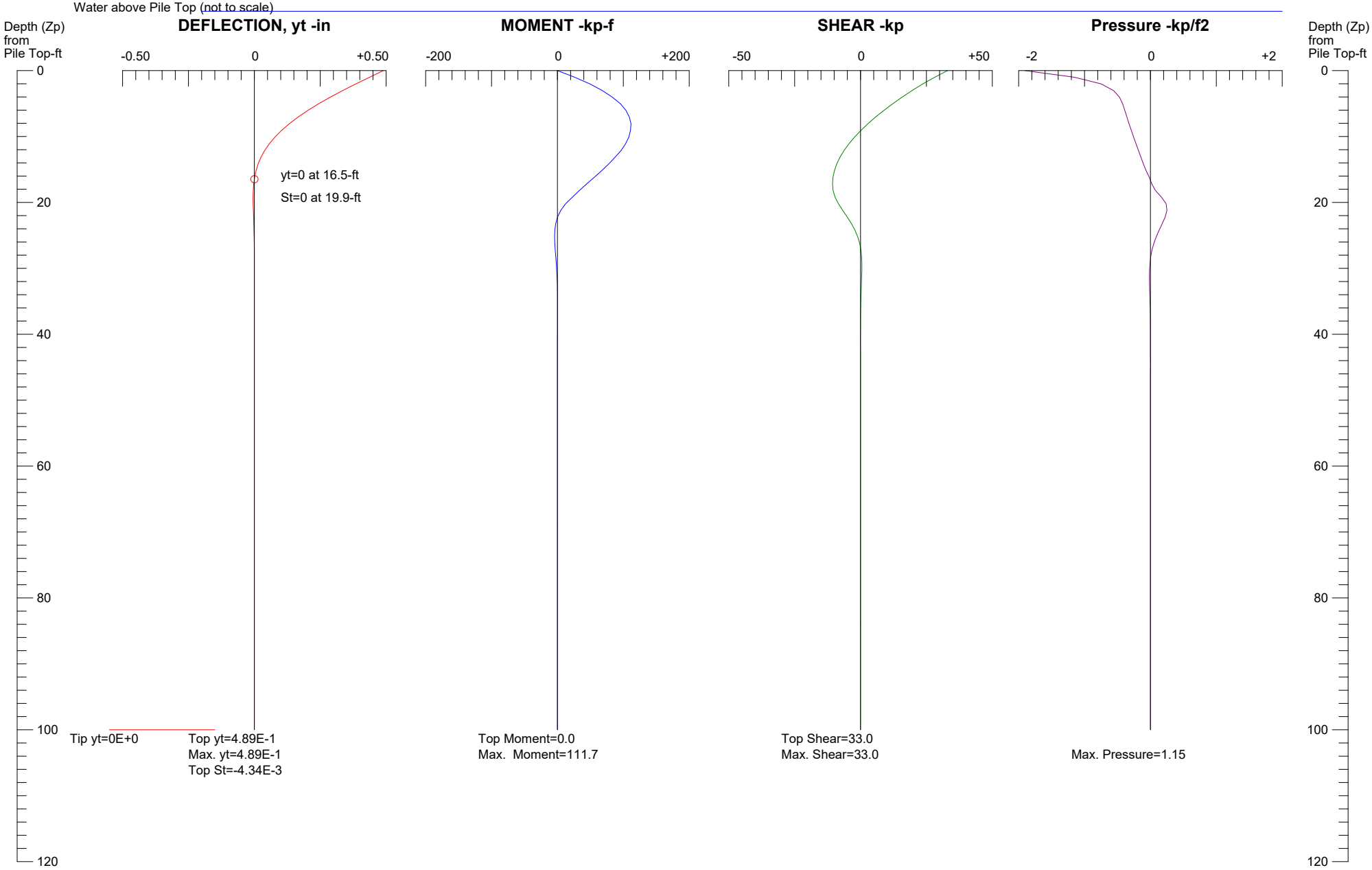
The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Single Pile, Khead=2, Kbc=1

Pile below Ground (not to scale)

Water above Pile Top (not to scale)



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24-in CIDH Pile-Free Head

Figure D-1

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Title 1: 24-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

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* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	24	452.4	75.4	16286.0	3000	0.471	0.0	4	4	0.5	Concrete (smooth)
100.0	24	452.4	75.4								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 5

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	150	75	4		Sand/Gravel
50.0	70	29	0.46	150	80	4		Silty Sand
60.0	50	24	0.3	130	0.9	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0	64	24	0.3	150	0.95	1	Soft Clay
90.0	61	39	0.00	120	75	4	Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
Load Factor for Vertical Loads: 1.0
Load Factor for Lateral Loads: 1.0
Loads Supported by Pile Cap: 0 %
Shear Condition: Static

SINGLE PILE:
(with Load Factor)
Vertical Load= 210.00 -kp
Shear= 57.00 -kp
Slope Restrain, St= 0.00 -in/-in

Results:
Top Deflection, yt= 0.50100-in
Max. Moment, M= -292.50-kp-f
Top Deflection Slope, St= 0.00000

Top Deflection, 0.5010-in, OK with the Allowable Deflection= 1.00-in

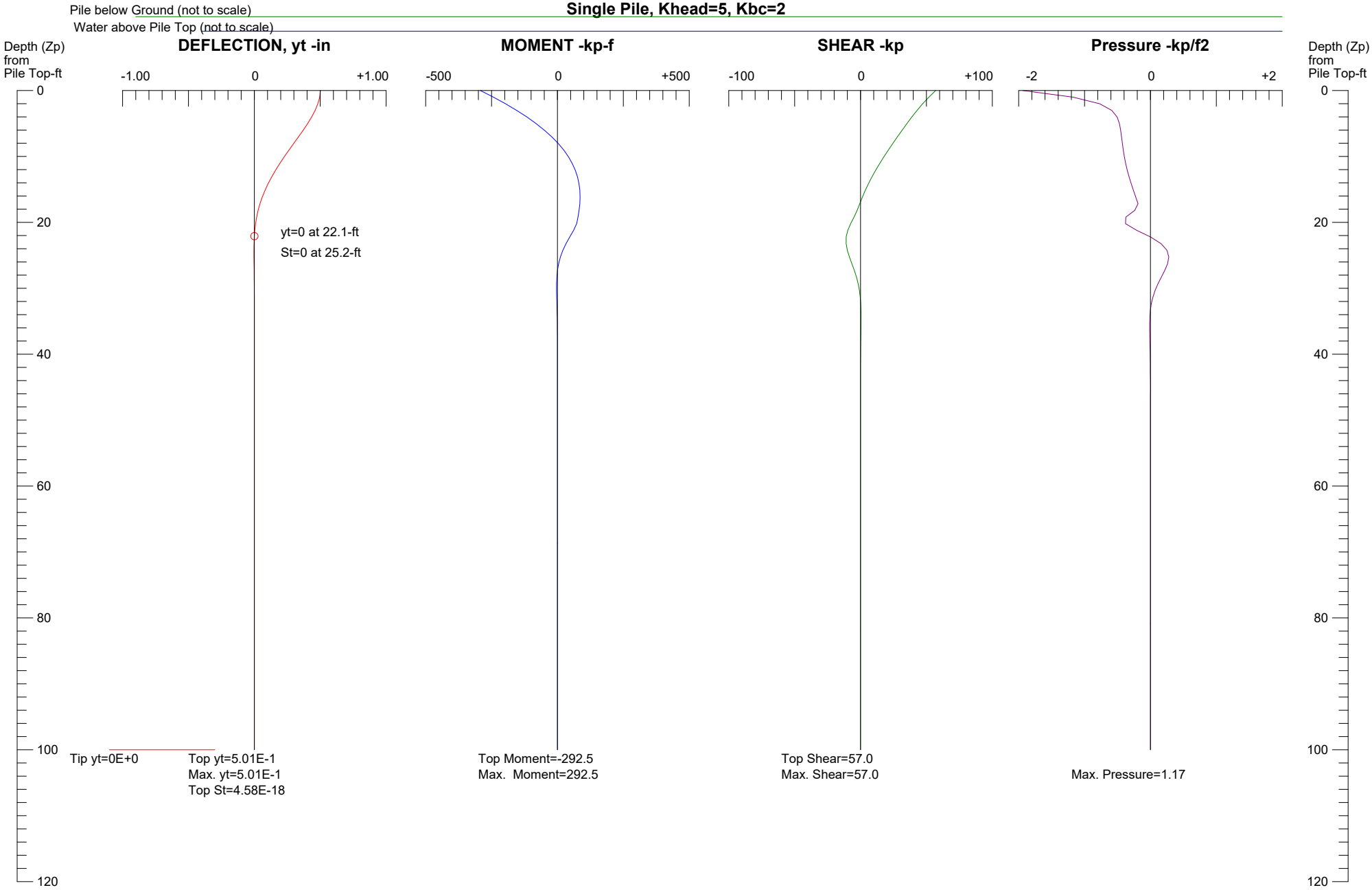
Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Single Pile, Khead=5, Kbc=2



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24-in CIDH Pile-Fixed Head

Figure D-2

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Title 1: 30-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

---

* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	30	706.9	94.2	39760.8	3000	0.736	0.0	4	4	0.5	Concrete (smooth)
100.0	30	706.9	94.2								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 2

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr	Nspt - %	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	150	75	4		Sand/Gravel
50.0	70	29	0.46	150	80	4		Silty Sand
60.0	50	24	0.3	130	0.9	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0	64	24	0.3	150	0.95	1	Soft Clay
90.0	61	39	0.00	120	75	4	Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
Load Factor for Vertical Loads: 1.0
Load Factor for Lateral Loads: 1.0
Loads Supported by Pile Cap: 0 %
Shear Condition: Static

SINGLE PILE:
(with Load Factor)
Vertical Load= 210.00 -kp
Shear= 44.00 -kp
Moment= 0.00 -kp-f

Results:
Top Deflection, yt= 0.50100-in
Max. Moment, M= 189.17-kp-f
Top Deflection Slope, St= -0.00366

Top Deflection, 0.5010-in, OK with the Allowable Deflection= 1.00-in

Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

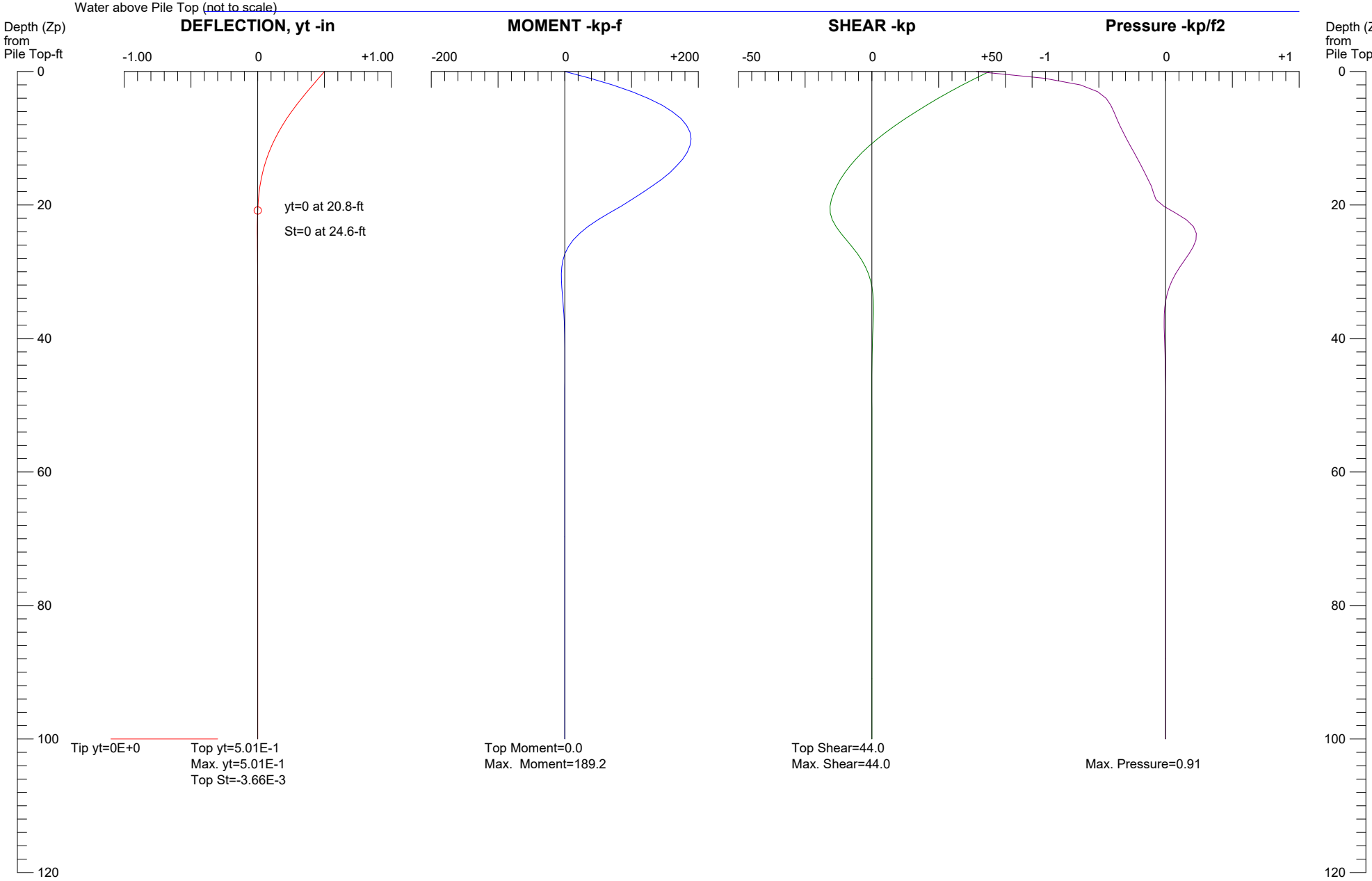
The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Pile below Ground (not to scale)

Water above Pile Top (not to scale)

Single Pile, Khead=2, Kbc=1



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30-in CIDH Pile-Free Head

Figure D-3

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Title 1: 30-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

---

* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	30	706.9	94.2	39760.8	3000	0.736	0.0	4	4	0.5	Concrete (smooth)
100.0	30	706.9	94.2								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 5

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	150	75	4		Sand/Gravel
50.0	70	29	0.46	150	80	4		Silty Sand
60.0	50	24	0.3	130	0.9	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0	64	24	0.3	150	0.95	1	Soft Clay
90.0	61	39	0.00	120	75	4	Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
- Load Factor for Vertical Loads: 1.0
- Load Factor for Lateral Loads: 1.0
- Loads Supported by Pile Cap: 0 %
- Shear Condition: Static

SINGLE PILE:
- (with Load Factor)
- Vertical Load= 210.00 -kp
- Shear= 82.00 -kp
- Slope Restrain, St= 0.00 -in/-in

Results:
- Top Deflection, yt= 0.50500-in
- Max. Moment, M= -533.33-kp-f
- Top Deflection Slope, St= 0.00000

- Top Deflection, 0.5050-in, OK with the Allowable Deflection= 1.00-in

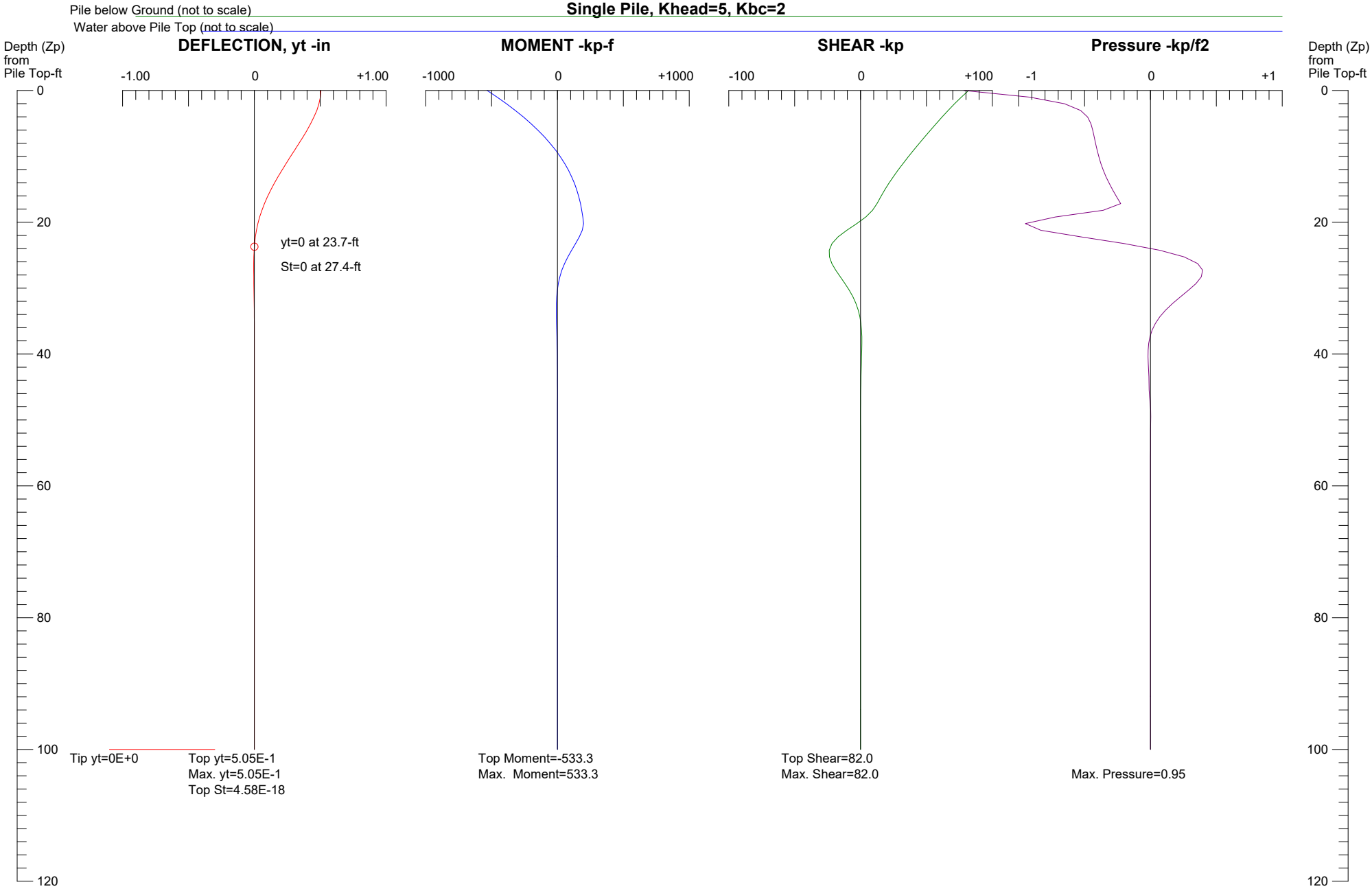
Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Single Pile, Khead=5, Kbc=2



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30-in CIDH Pile-Fixed Head

Figure D-4

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Title 1: 24-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

---

* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	24	452.4	75.4	16286.0	3000	0.471	0.0	4	4	0.5	Concrete (smooth)
100.0	24	452.4	75.4								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 2

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	120	75	4		Sand/Gravel
50.0	70	29	0.46	120	80	4		Silty Sand
60.0	50	24	0.3	125	1.5	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0	64	24	0.3	150	0.95	1	Soft Clay
90.0	61	39	0.00	120	75	4	Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
Load Factor for Vertical Loads: 1.0
Load Factor for Lateral Loads: 1.0
Loads Supported by Pile Cap: 0 %
Shear Condition: Static

SINGLE PILE:
(with Load Factor)
Vertical Load= 210.00 -kp
Shear= 44.00 -kp
Moment= 0.00 -kp-f

Results:
Top Deflection, yt= 0.98800-in
Max. Moment, M= 176.67-kp-f
Top Deflection Slope, St= -0.00765

Top Deflection, 0.9880-in, OK with the Allowable Deflection= 1.00-in

Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

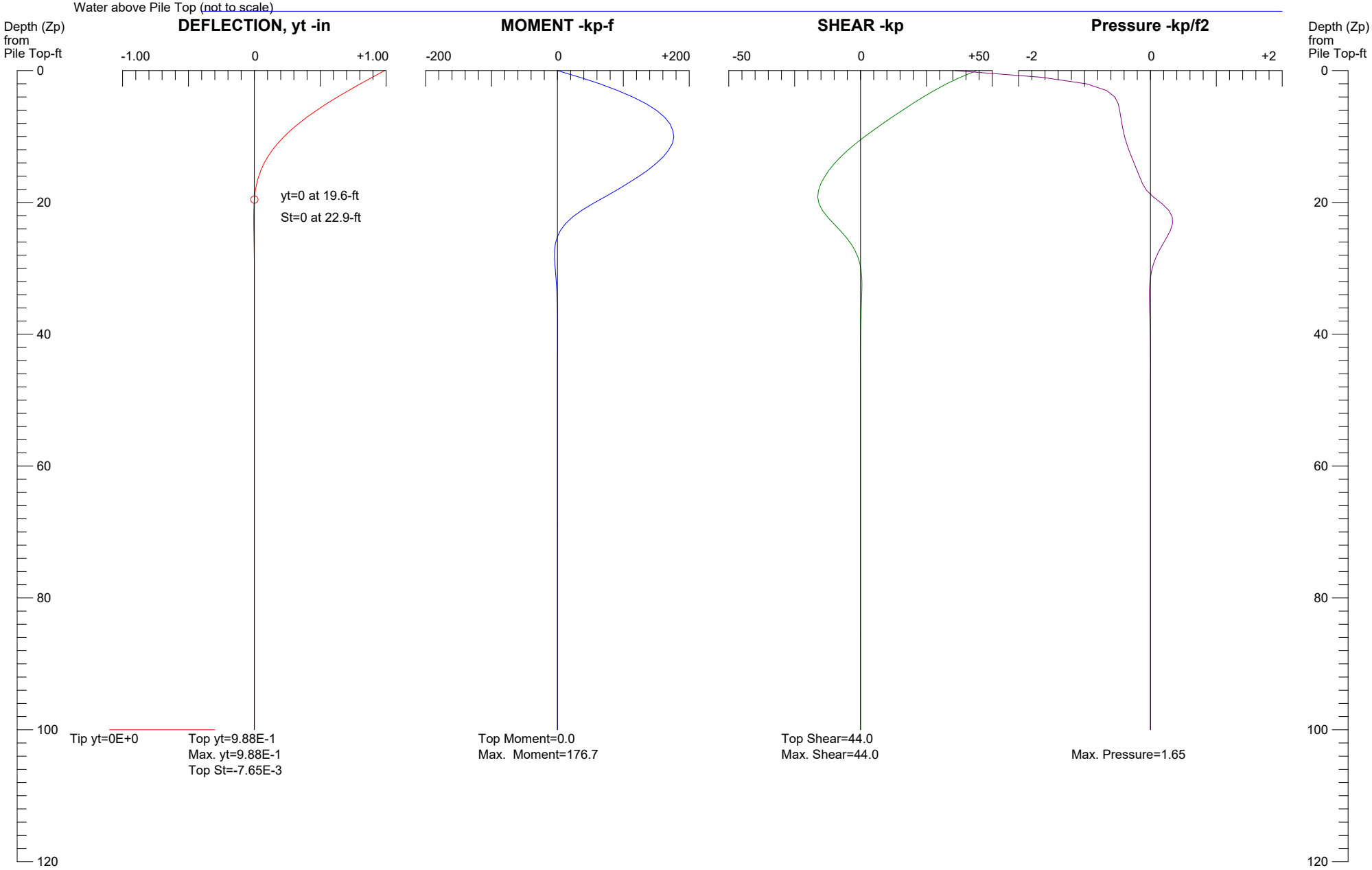
Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Pile below Ground (not to scale)
Water above Pile Top (not to scale)

Single Pile, Khead=2, Kbc=1



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24-in CIDH Pile-Free Head

Figure D-5

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Title 1: 24-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

---

* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	24	452.4	75.4	16286.0	3000	0.471	0.0	4	4	0.5	Concrete (smooth)
100.0	24	452.4	75.4								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 5

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	150	75	4		Sand/Gravel
50.0	70	29	0.46	150	80	4		Silty Sand
60.0	50	24	0.3	130	0.9	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0	64	24	0.3	150	0.95	1	Soft Clay
90.0	61	39	0.00	120	75	4	Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
- Load Factor for Vertical Loads: 1.0
- Load Factor for Lateral Loads: 1.0
- Loads Supported by Pile Cap: 0 %
- Shear Condition: Static

SINGLE PILE:
- (with Load Factor)
- Vertical Load= 210.00 -kp
- Shear= 74.00 -kp
- Slope Restrain, St= 0.00 -in/-in

Results:
- Top Deflection, yt= 0.99400-in
- Max. Moment, M= -454.17-kp-f
- Top Deflection Slope, St= 0.00000

- Top Deflection, 0.9940-in, OK with the Allowable Deflection= 1.00-in

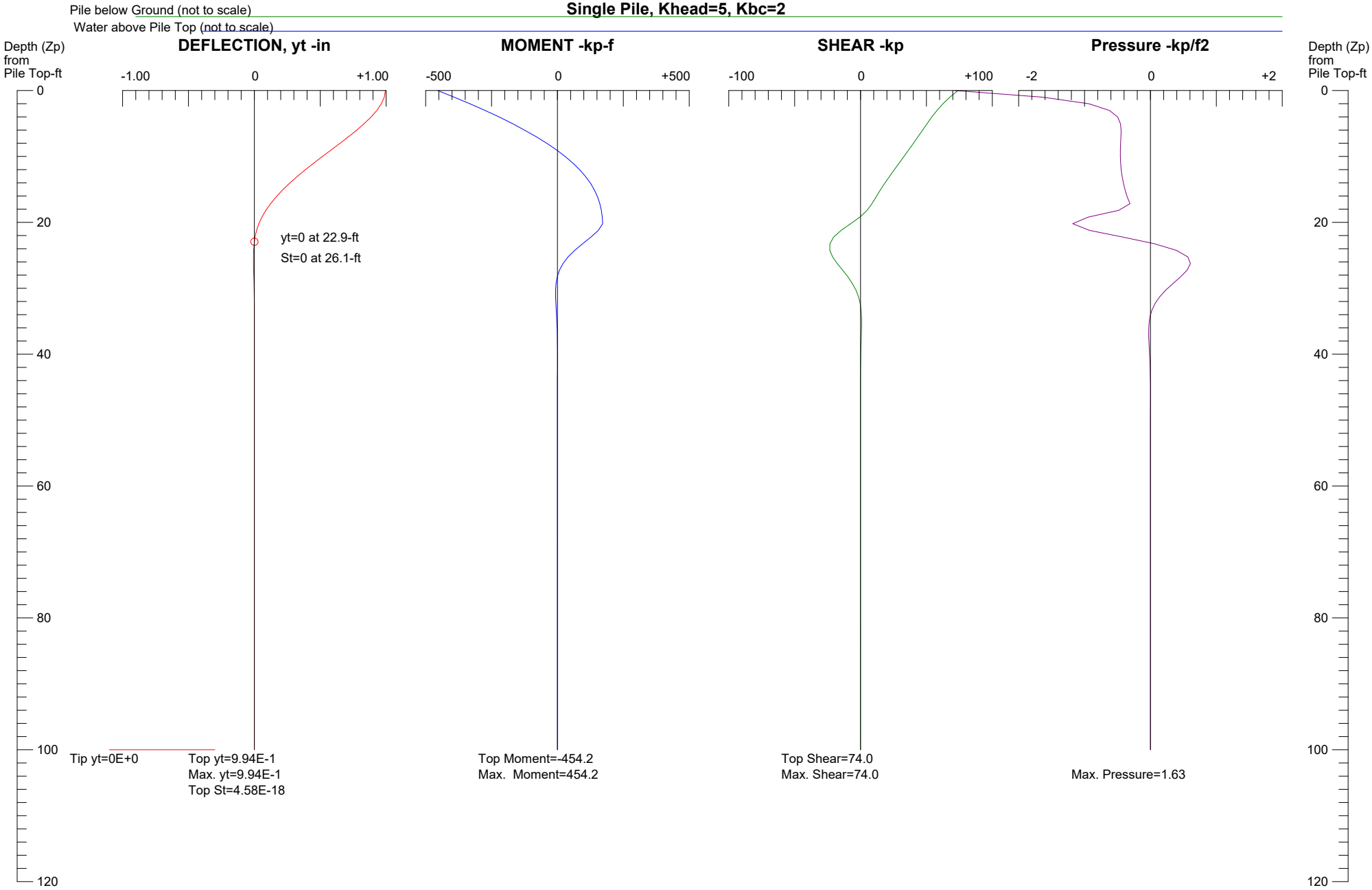
Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Single Pile, Khead=5, Kbc=2



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24-in CIDH Pile-Fixed Head

Figure D-6

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Title 1: 30-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

---

* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	30	706.9	94.2	39760.8	3000	0.736	0.0	4	4	0.5	Concrete (smooth)
100.0	30	706.9	94.2								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 2

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	150	75	4		Sand/Gravel
50.0	70	29	0.46	150	80	4		Silty Sand
60.0	50	24	0.3	130	0.9	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0	64	24	0.3	150	0.95	1	Soft Clay
90.0	61	39	0.00	120	75	4	Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
- Load Factor for Vertical Loads: 1.0
- Load Factor for Lateral Loads: 1.0
- Loads Supported by Pile Cap: 0 %
- Shear Condition: Static

SINGLE PILE:
- (with Load Factor)
- Vertical Load= 210.00 -kp
- Shear= 61.00 -kp
- Moment= 0.00 -kp-f

Results:
- Top Deflection, yt= 1.01000-in
- Max. Moment, M= 311.67-kp-f
- Top Deflection Slope, St= -0.00661

- !!! Top Deflection, 1.0100-in, Exceeds the Allowable Deflection= 1.00-in

Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

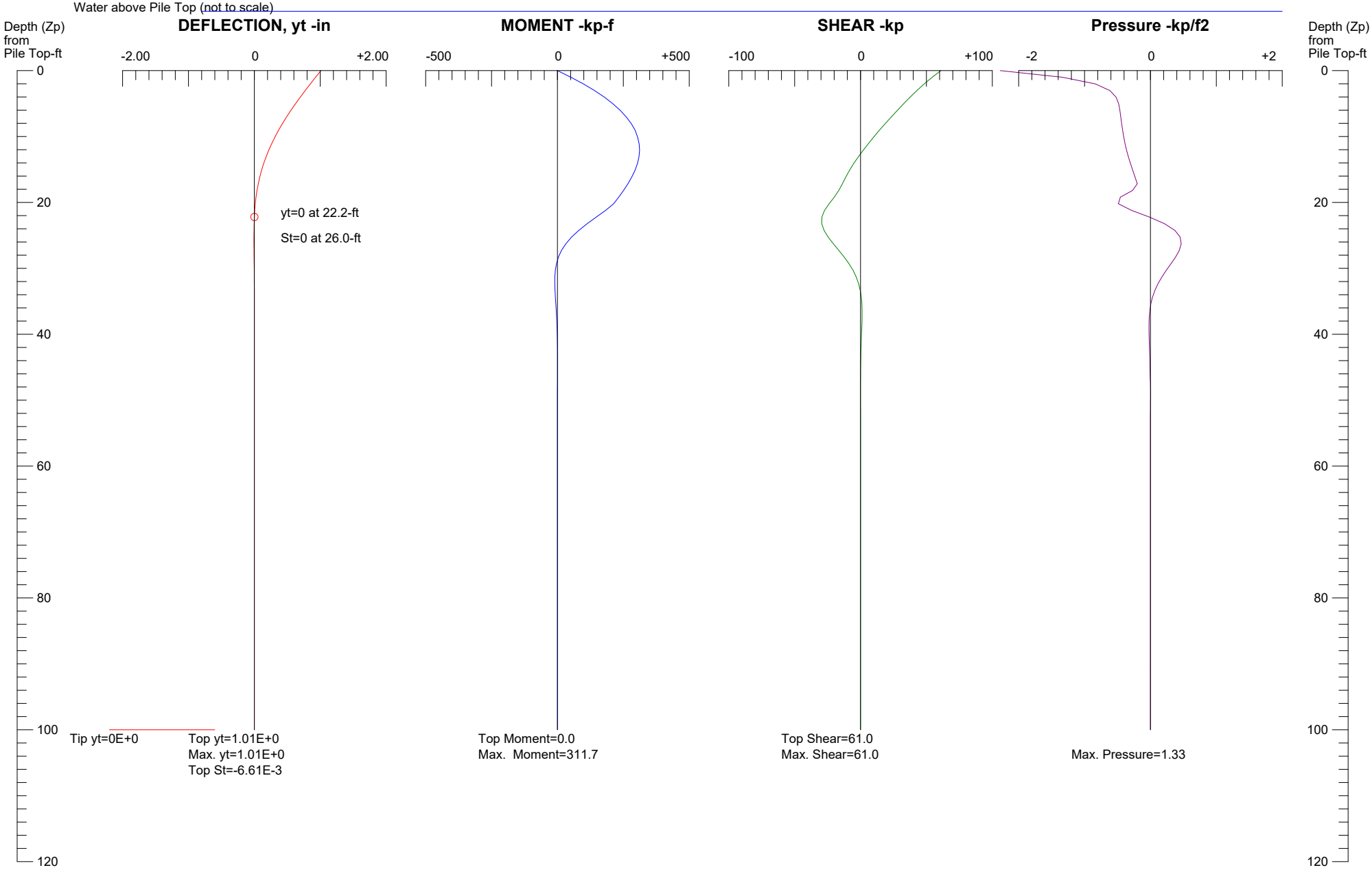
The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Single Pile, Khead=2, Kbc=1

Pile below Ground (not to scale)

Water above Pile Top (not to scale)



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30-in CIDH Pile-Free Head

Figure D-7

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Title 1: 30-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

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* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	30	706.9	94.2	39760.8	3000	0.736	0.0	4	4	0.5	Concrete (smooth)
100.0	30	706.9	94.2								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 5

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	150	75	4		Sand/Gravel
50.0	70	29	0.46	150	80	4		Silty Sand
60.0	50	24	0.3	130	0.9	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0 64 24 0.3 150 0.95 1 Soft Clay
90.0 61 39 0.00 120 75 4 Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
Load Factor for Vertical Loads: 1.0
Load Factor for Lateral Loads: 1.0
Loads Supported by Pile Cap: 0 %
Shear Condition: Static

SINGLE PILE:
(with Load Factor)
Vertical Load= 210.00 -kp
Shear= 116.00 -kp
Slope Restrain, St= 0.00 -in/-in

Results:
Top Deflection, yt= 0.99700-in
Max. Moment, M= -883.33-kp-f
Top Deflection Slope, St= 0.00000

Top Deflection, 0.9970-in, OK with the Allowable Deflection= 1.00-in

Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

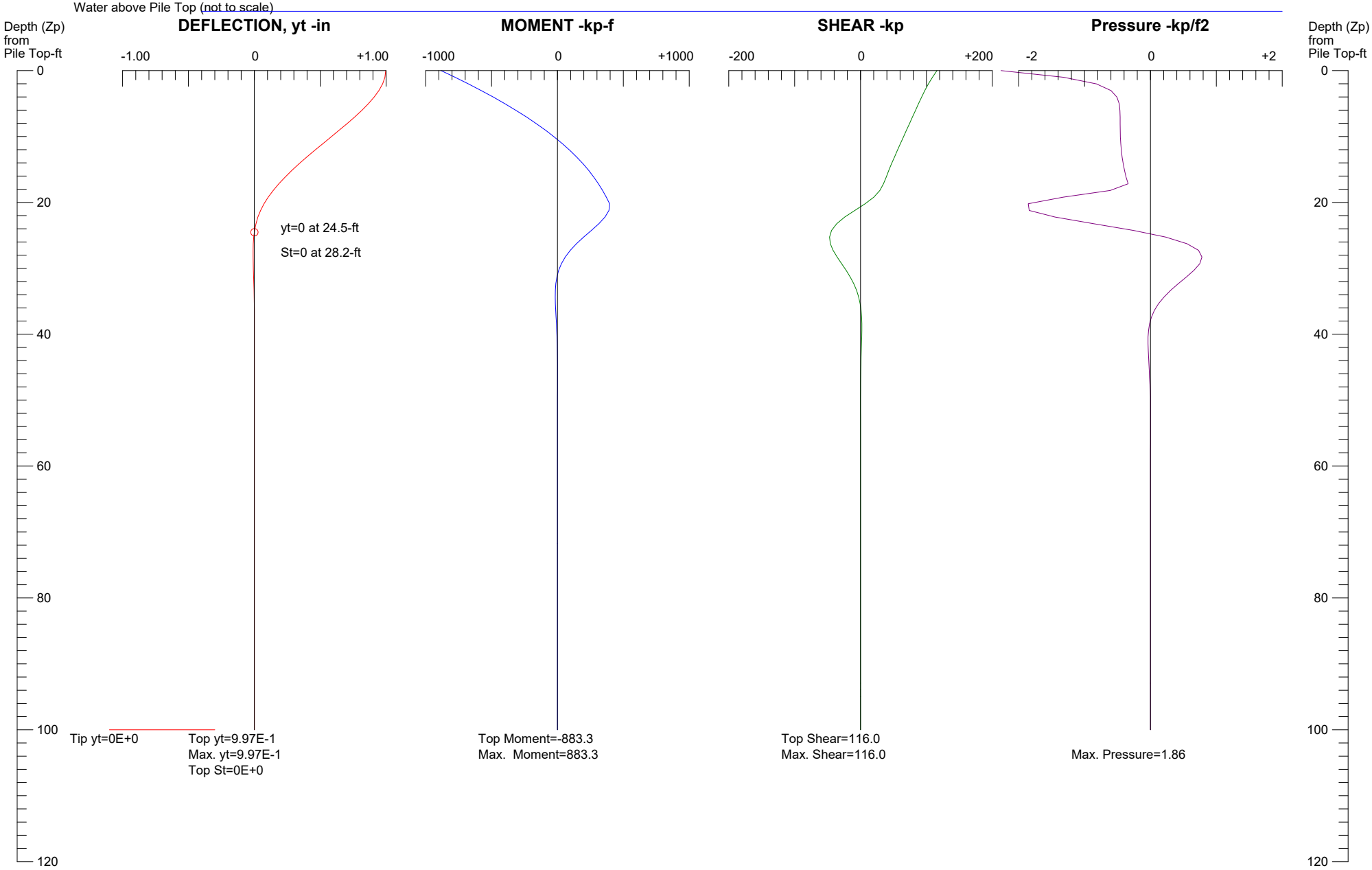
The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Single Pile, Khead=5, Kbc=2

Pile below Ground (not to scale)

Water above Pile Top (not to scale)



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30-in CIDH Pile-Fixed Head

Figure D-8

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Title 1: 24-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

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* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	24	452.4	75.4	16286.0	3000	0.471	0.0	4	4	0.5	Concrete (smooth)
100.0	24	452.4	75.4								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 2

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr %	Nspt -	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	150	75	4		Sand/Gravel
50.0	70	29	0.46	150	80	4		Silty Sand
60.0	50	24	0.3	130	0.9	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0	64	24	0.3	150	0.95	1	Soft Clay
90.0	61	39	0.00	120	75	4	Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
- Load Factor for Vertical Loads: 1.0
- Load Factor for Lateral Loads: 1.0
- Loads Supported by Pile Cap: 0 %
- Shear Condition: Static

SINGLE PILE:
- (with Load Factor)
- Vertical Load= 210.00 -kp
- Shear= 45.00 -kp
- Moment= 0.00 -kp-f

Results:
- Top Deflection, yt= 1.23000-in
- Max. Moment, M= 200.83-kp-f
- Top Deflection Slope, St= -0.00908

- !!! Top Deflection, 1.2300-in, Exceeds the Allowable Deflection= 1.00-in

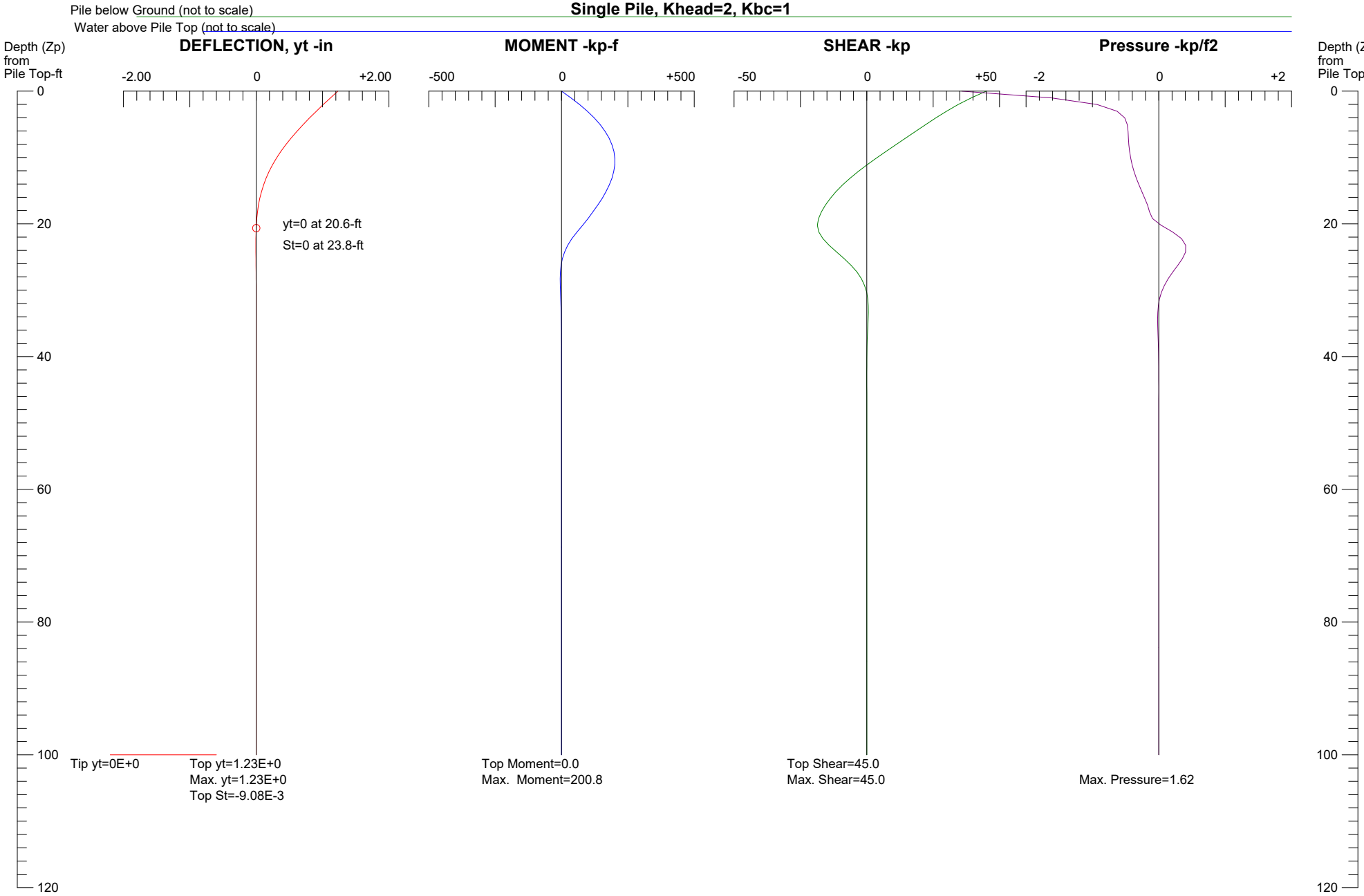
Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Single Pile, Khead=2, Kbc=1



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24-in CIDH Pile-Free Head

Figure D-9

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Title 1: 24-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

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* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	24	452.4	75.4	16286.0	3000	0.471	0.0	4	4	0.5	Concrete (smooth)
100.0	24	452.4	75.4								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 5

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	150	75	4		Sand/Gravel
50.0	70	29	0.46	150	80	4		Silty Sand
60.0	50	24	0.3	130	0.9	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0	64	24	0.3	150	0.95	1	Soft Clay
90.0	61	39	0.00	120	75	4	Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
- Load Factor for Vertical Loads: 1.0
- Load Factor for Lateral Loads: 1.0
- Loads Supported by Pile Cap: 0 %
- Shear Condition: Static

SINGLE PILE:
- (with Load Factor)
- Vertical Load= 210.00 -kp
- Shear= 82.50 -kp
- Slope Restrain, St= 0.00 -in/-in

Results:
- Top Deflection, yt= 1.96000-in
- Max. Moment, M= -687.50-kp-f
- Top Deflection Slope, St= 0.00000

- !!! Top Deflection, 1.9600-in, Exceeds the Allowable Deflection= 1.00-in

Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

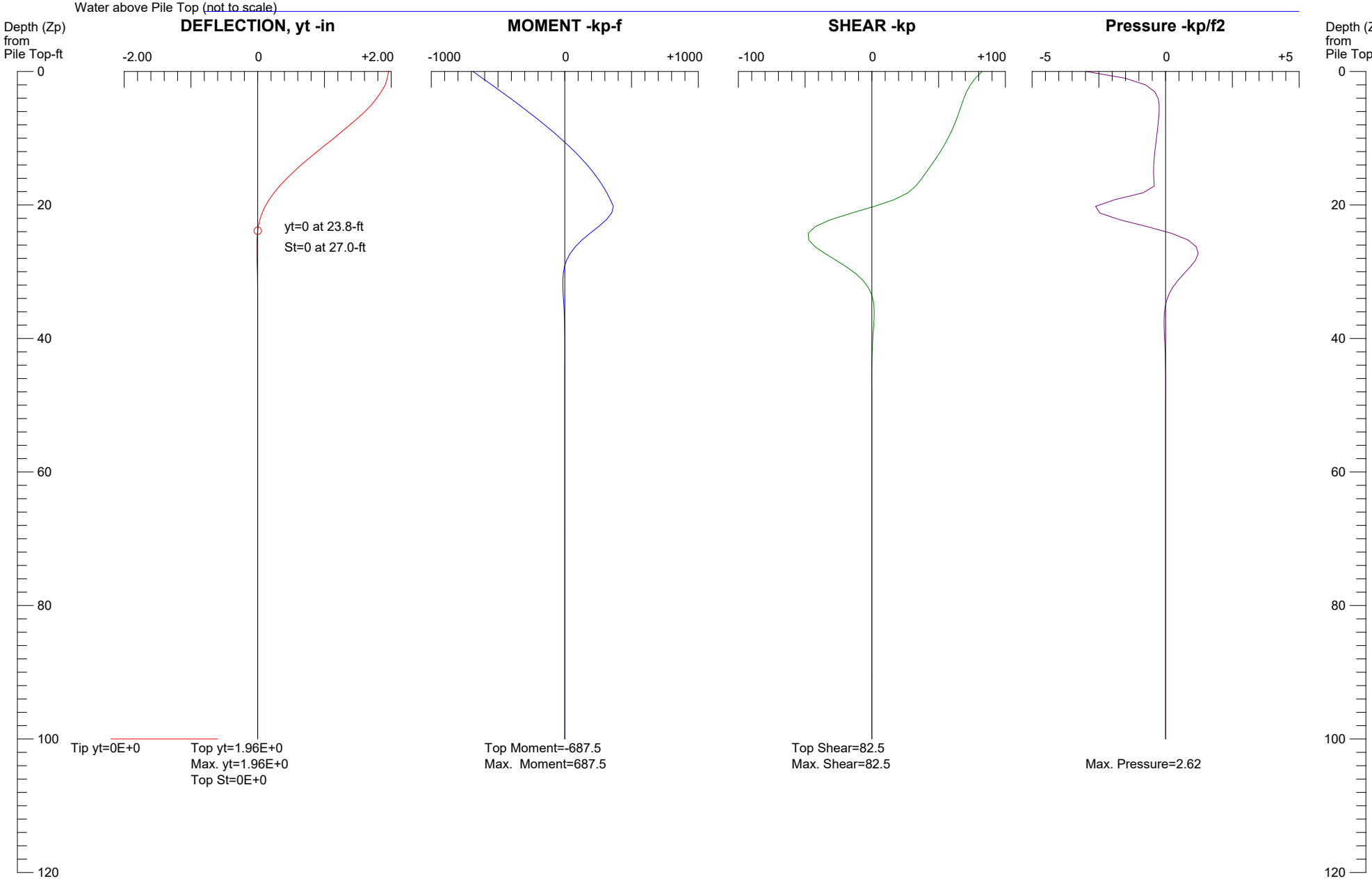
The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Single Pile, Khead=5, Kbc=2

Pile below Ground (not to scale)

Water above Pile Top (not to scale)



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24-in CIDH Pile-Fixed Head

Figure D-10

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Title 1: 30-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

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* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	30	706.9	94.2	39760.8	3000	0.736	0.0	4	4	0.5	Concrete (smooth)
100.0	30	706.9	94.2								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 2

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	150	75	4		Sand/Gravel
50.0	70	29	0.46	150	80	4		Silty Sand
60.0	50	24	0.3	130	0.9	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0	64	24	0.3	150	0.95	1	Soft Clay
90.0	61	39	0.00	120	75	4	Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
Load Factor for Vertical Loads: 1.0
Load Factor for Lateral Loads: 1.0
Loads Supported by Pile Cap: 0 %
Shear Condition: Static

SINGLE PILE:
(with Load Factor)
Vertical Load= 210.00 -kp
Shear= 70.00 -kp
Moment= 0.00 -kp-f

Results:
Top Deflection, yt= 1.91000-in
Max. Moment, M= 502.50-kp-f
Top Deflection Slope, St= -0.01130

!!! Top Deflection, 1.9100-in, Exceeds the Allowable Deflection= 1.00-in

Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

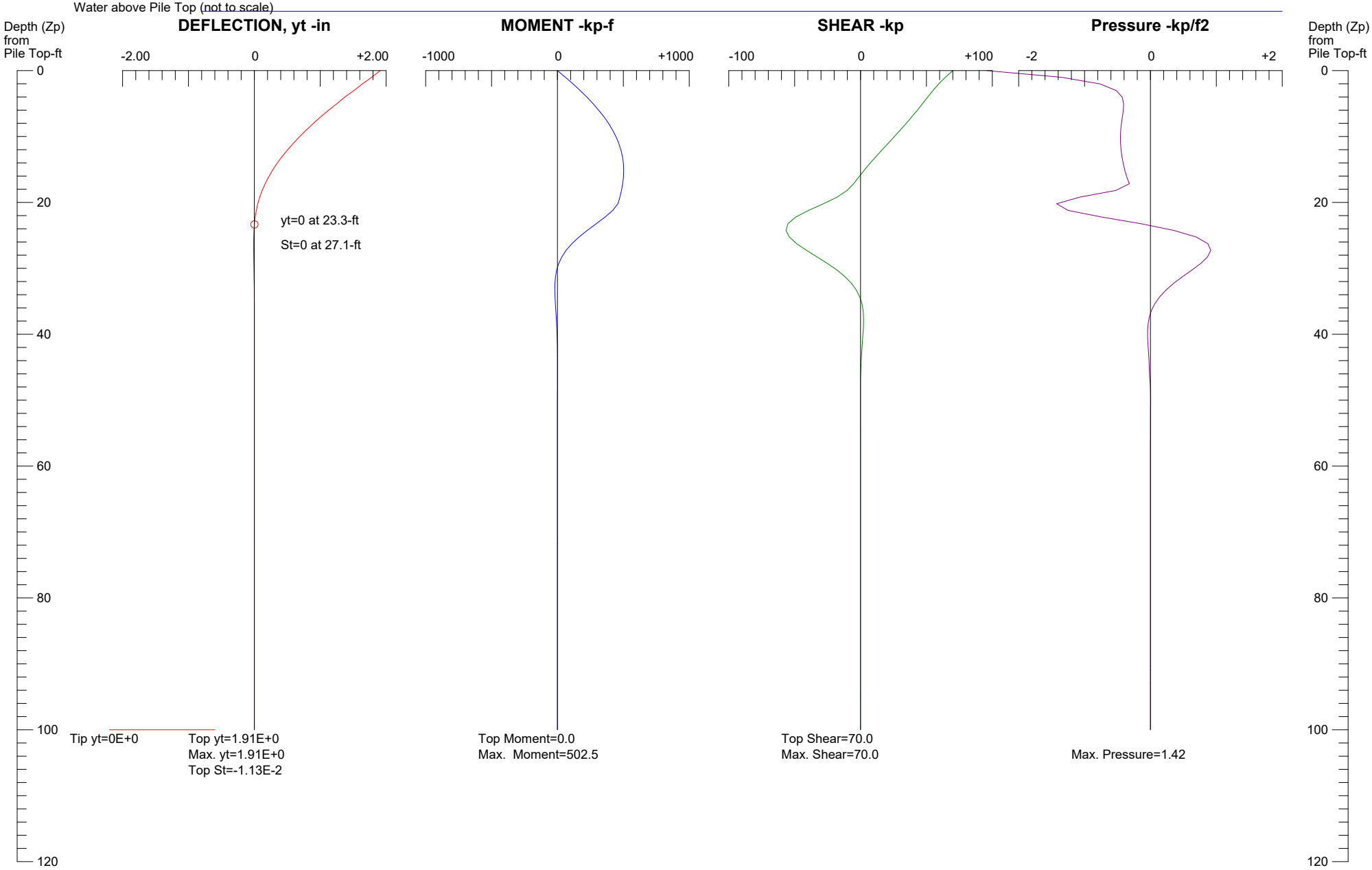
The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Pile below Ground (not to scale)

Water above Pile Top (not to scale)

Single Pile, Khead=2, Kbc=1



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30-in CIDH Pile-Free Head

Figure D-11

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Title 1: 30-in CIDH Pile
Title 2:

ALLPILE INPUT DATA:

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* Pile Type Page *
Unit: English
Diameter more than 24in (61cm). For bell section, select "Belled" in Diameter Variation (Pile Section Screen, Item 4).
Recommendation: 2 to 4 in Item 3 of Page F.
Pile Type: Drilled Shaft (dia >24 in. or 61 cm)

* Pile Profile *
Foundation Depth: 100.0 -ft
Top Height: -15 -ft
Slope Angle: 0
Pile Angle: 0

* Pile Properties *

Zs -ft	Width -in	Area -in2	Perim. -in	I -in4	E -kp/i2	Weight -kp/f	Mix* %	Out Side	In Side	Other Par.	Type
0.0	30	706.9	94.2	39760.8	3000	0.736	0.0	4	4	0.5	Concrete (smooth)
100.0	30	706.9	94.2								Pile Tip

Note: Mix = % of Inside material/Outside material
Other Pra. = Crack deduction (%) for concrete pile

Group Type: 0
Top Type: 5

Water Table: 8 -ft
No Elevation Input

* Soil Properties *

Zs -ft	Gamma -lb/f3	Phi o	C -kp/f2	K -lb/i3	E50/Dr - %	Nspt	Type	Soil
0.0	105.0	30	0.29	125.0	50	3		Silty Sand (SM)
8.0	67.2	24	0.3	125	0.85	2		Stiff Clay
35.0	62.7	30	0.3	150	75	4		Sand/Gravel
50.0	70	29	0.46	150	80	4		Silty Sand
60.0	50	24	0.3	130	0.9	1		Soft Clay
65.0	63	39.0	0.00	120	75	4		Silty Sand (SM)

80.0 64 24 0.3 150 0.95 1 Soft Clay
90.0 61 39 0.00 120 75 4 Silty Sand

* Zero Tip Resistance *
The tip resistance is zero

* Negative Friction *
Negative Friction Start: 0 -ft End: 35 -ft with Factor: 0.5

ALLPILE ANALYSIS AND RESULTS:

FACTORS AND CONDITIONS:
Load Factor for Vertical Loads: 1.0
Load Factor for Lateral Loads: 1.0
Loads Supported by Pile Cap: 0 %
Shear Condition: Static

SINGLE PILE:
(with Load Factor)
Vertical Load= 210.00 -kp
Shear= 152.00 -kp
Slope Restrain, St= 0.00 -in/-in

Results:
Top Deflection, yt= 2.00000-in
Max. Moment, M= -1466.67-kp-f
Top Deflection Slope, St= 0.00000

!!! Top Deflection, 2.0000-in, Exceeds the Allowable Deflection= 1.00-in

Note: If the program cannot find a result or the result exceeds the upper limit. The result will be displayed as 99999.

Notes:
Q - Vertical Load at pile top
P - Lateral Shear Load at pile top
M - Moment at pile top
Xtop - Pile top total settlement
yt - Pile top deflection
St - Pile top deflection slope (deflection/unit length)

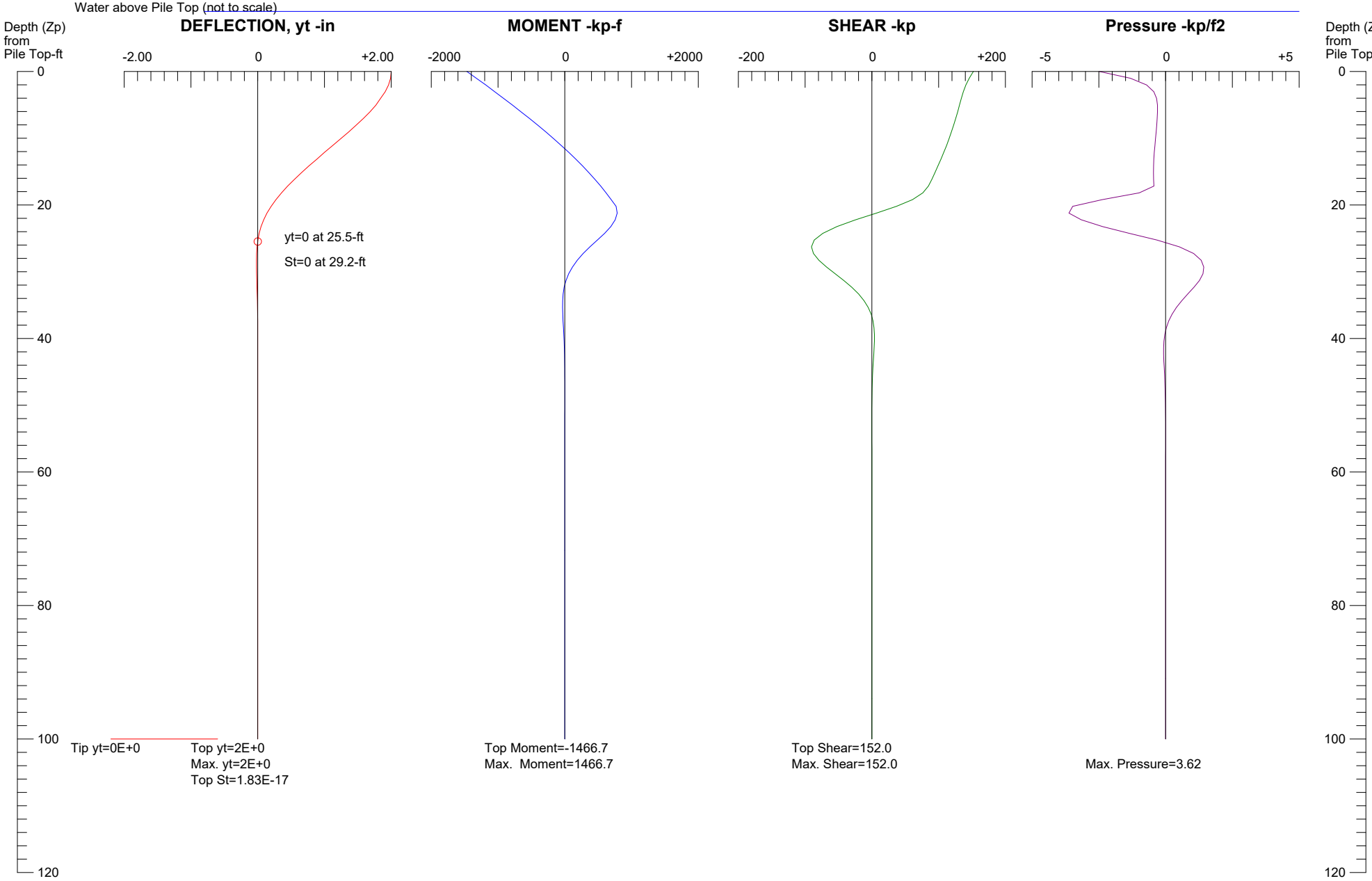
The Max. Moment calculated by program is an internal moment of shaft due to the loading. Engineers have to check whether the pile has enough moment capacity to resist the Max. Moment with adequate factor of safety. If not, the pile may be damaged under the loading.
1 1 1 1 1

PILE DEFLECTION & FORCE vs DEPTH

Pile below Ground (not to scale)

Water above Pile Top (not to scale)

Single Pile, Khead=5, Kbc=2



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30-in CIDH Pile-Fixed Head

Figure D-12

Appendix E

Earthwork Specification

APPENDIX E: EARTHWORK SPECIFICATIONS

Scope of Work

The work includes all labor, supplies and construction equipment required to construct the building pads in a good, workman-like manner, as shown on the drawings and herein specified. The major items of work covered in this section include the following:

- Site Inspection
- Authority of Geotechnical Engineer
- Site Clearing
- Excavations
- Preparation of Fill Areas
- Placement and Compaction of Fill
- Observation and Testing

Site Inspection

- The Contractor shall carefully examine the site and make all inspections necessary, in order to determine the full extent of the work required to make the completed work conform to the drawings and specifications. The Contractor shall satisfy himself as to the nature and location of the work, ground surface and the characteristics of equipment and facilities needed prior to and during prosecution of the work. The Contractor shall satisfy himself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered. Any inaccuracies or discrepancies between the actual field conditions and the drawings, or between the drawings and specifications must be brought to the Owner's attention in order to clarify the exact nature of the work to be performed.

- This G*eotechnical Study Report* by Converse Consultants may be used as a reference to the surface and subsurface conditions on this project. The information presented in this report is intended for use in design and is subject to confirmation of the conditions encountered during construction. The exploration logs and related information depict subsurface conditions only at the particular time and location designated on the boring logs. Subsurface conditions at other locations may differ from conditions encountered at the exploration locations. In addition, the passage of time may result in a change in subsurface conditions at the exploration locations. Any review of this information shall not relieve the Contractor from performing such independent investigation and evaluation to satisfy himself as to the nature of the surface and subsurface conditions to be encountered and the procedures to be used in performing his work.

Authority of the Geotechnical Engineer

- The Geotechnical Engineer will observe the placement of compacted fill and will take sufficient tests to evaluate the uniformity and degree of compaction of filled ground.

- As the Owner's representative, the Geotechnical Engineer will (a) have the authority to cause the removal and replacement of loose, soft, disturbed and other unsatisfactory soils and uncontrolled fill; (b) have the authority to approve the preparation of native ground to receive fill material; and (c) have the authority to approve or reject soils proposed for use in building areas.

- The Civil Engineer and/or Owner will decide all questions regarding (a) the interpretation of the drawings and specifications, (b) the acceptable fulfillment of the contract on the part of the Contractor and (c) the matters of compensation.

Site Clearing

- Clearing and grubbing shall consist of the removal from building areas to be graded of all existing structures, pavements, utilities, trees, roots, grass and vegetation.

- Organic and inorganic materials resulting from the clearing and grubbing operations shall be hauled away from the areas to be graded.

Excavations

- Based on observations made during our field explorations, the surficial soils can be excavated with conventional earthwork equipment.

Preparation of Fill Areas

- All organic material, organic soils, incompetent alluvium, undocumented fill soils and debris should be removed from the proposed building areas.

- Over-excavation depth and lateral extend should follow the report.

- The subgrade in all areas to receive fill shall be scarified to a minimum depth of 6.0 inches, the soil moisture adjusted within three percent (3%) above optimum, and then compacted to at least ninety percent (90%) of the laboratory maximum dry density as determined by ASTM Standard D1557 test method.

- Compacted fill may be placed on native soils that have been properly scarified and re-compacted as discussed above.

- All areas to receive compacted fill will be observed and approved by the Geotechnical Engineer before the placement of fill.

Placement and Compaction of Fill

- Compacted fill placed for the support of footings, slabs-on-grade, exterior concrete flatwork, and driveways will be considered structural fill. Structural fill may consist of approved on-site soils or imported fill that meets the criteria indicated below.

- Fill consisting of selected on-site earth materials or imported soils approved by the Geotechnical Engineer shall be placed in layers on approved earth materials. Soils used as compacted structural fill shall have the following characteristics:

    - All fill soil particles shall not exceed 3.0 inches in nominal size and shall be free of organic matter and miscellaneous inorganic debris and inert rubble.

    - Imported fill materials shall have an Expansion Index (EI) less than 20. All imported fill should be compacted to at least ninety percent (90%) of the laboratory maximum dry density (ASTM Standard D1557) at about to three percent (3%) above optimum moisture.

    - Fill soils shall be evenly spread in maximum 8-inch lifts, watered or dried as necessary, mixed and compacted to at least the density specified below. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Engineer.

    - All fill placed at the site shall be compacted to at least ninety percent (90%) of the laboratory maximum dry density as determined by ASTM Standard D1557 test method. The on-site soils shall be moisture conditioned at approximate three percent (3%) above the optimum moisture content.

- Representative samples of materials being used, as compacted fill will be analyzed in the laboratory by the Geotechnical Engineer to obtain information on their physical properties. Maximum laboratory density of each soil type used in the compacted fill will be determined by the ASTM Standard D1557 compaction method.

- Fill materials shall not be placed, spread or compacted during unfavorable weather conditions. When site grading is interrupted by heavy rain, filling operations shall not resume until the Geotechnical Engineer approves the moisture and density conditions of the previously placed fill.

- It shall be the Grading Contractor's obligation to take all measures deemed necessary during grading to provide erosion control devices in order to protect slope areas and adjacent properties from storm damage and flood hazard originating on this project. It shall be the contractor's responsibility to maintain slopes in their as-graded form until all slopes are in satisfactory compliance with

job specifications, all berms have been properly constructed, and all associated drainage devices meet the requirements of the Civil Engineer.

Trench Backfill

The following specifications are recommended to provide a basis for quality control during the placement of trench backfill.

- Trench excavations to receive backfill shall be free of trash, debris or other unsatisfactory materials at the time of backfill placement.

- Trench backfill shall be compacted to a minimum relative compaction of ninety percent (90%) as per ASTM Standard D1557 test method.

- Rocks larger than 1.0 inch should not be placed within 12.0 inches of the top of the pipeline or within the upper 12.0 inches of pavement or structure subgrade. No more than thirty percent (30%) of the backfill volume shall be larger than 3/4-inches in largest dimension. Rocks shall be well mixed with finer soil.

- The pipe design engineer should select bedding material for the pipe. Bedding materials generally should have a Sand Equivalent (SE) greater than or equal to 30, as determined by the ASTM Standard D2419 test method.

- Trench backfill shall be compacted by mechanical methods, such as sheepsfoot, vibrating or pneumatic rollers, or mechanical tampers, to achieve the density specified herein. The backfill materials shall be brought to between optimum and three percent (3%) above optimum, then placed in horizontal layers. The thickness of uncompacted layers should not exceed 8.0 inches. Each layer shall be evenly spread, moistened or dried as necessary, and then tamped or rolled until the specified density has been achieved.

- The contractor shall select the equipment and processes to be used to achieve the specified density without damage to adjacent ground and completed work.

- The field density of the compacted soil shall be measured by the ASTM Standard D1556 or ASTM Standard D2922 test methods or equivalent.

- Observation and field tests should be performed by Converse during construction to confirm that the required degree of compaction has been obtained. Where compaction is less than that specified, additional compactive effort shall be made with adjustment of the moisture content as necessary, until the specified compaction is obtained.

- It should be the responsibility of the Contractor to maintain safe conditions during cut and/or fill operations.

- Trench backfill shall not be placed, spread or rolled during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until field tests by the project's geotechnical consultant indicate that the moisture content and density of the fill are as previously specified.

Observation and Testing

- During the progress of grading, the Geotechnical Engineer will provide observation of the fill placement operations.

- Field density tests will be made during grading to provide an opinion on the degree of compaction being obtained by the contractor. Where compaction of less than specified herein is indicated, additional compactive effort with adjustment of the moisture content shall be made as necessary, until the required degree of compaction is obtained

- A sufficient number of field density tests will be performed to provide an opinion to the degree of compaction achieved. In general, density tests will be performed on each one-foot lift of fill, but not less than one for each 500 cubic yards of fill placed.

Appendix F

Guide Specifications for Drilled Pile Installation

APPENDIX F: GUIDE SPECIFICATIONS FOR DRILLED PILE INSTALLATION

It should be the responsibility of the contractor to select proper construction equipment and method to correctly install the piles based on his own interpretation of the information presented in this report. The following recommendations are provided as a guide for preparing plans and specifications and for quality control:

- Prior to starting any foundation work, staking should be checked by the project Civil/Structural Engineer. Variations in the alignment from the vertical greater than 1/4-inch per foot of length should not be permitted. Any pile installed having a center more than three (3) inches off plan centerline will require structural analysis.

- Some variations in the final pile tip elevations should be expected. The actual tip elevation should be determined by the project geotechnical engineer during excavation based on observation of the actual field conditions.

- Based on the subsurface soil characteristics, caving during excavations is likely to occur within the sandy material layer. Casing, or other methods approved by the project geotechnical consultant, should be used to support the sides of the pile excavation. Casing should be used at the discretion of the contractor. Casing should be advanced as drilling proceeds by drilling with a flight or bucket auger smaller in diameter than the inside of the casing. Occasional hammering may be required to advance the casing with the excavation. Casing should be pulled as the concrete is being poured, while always maintaining a head of concrete inside the casing. Drilling fluids should not be used to support the sides of the excavation without prior approval by the project geotechnical consultants. The contractor should have equipment on-site with sufficient pulling capacity to pull the casing at the proper time. The casing should have outside diameter not less than the specified diameter of the pile.

- In the event that the pile excavation becomes bell-shaped and cannot be advanced due to severe caving, the caved region may be filled with sand and Portland Cement slurry. Drilling may continue when the slurry has reached its initial set. In this case, it may be prudent to utilize casing or other special methods to facilitate continued drilling after the slurry has set. Sufficient space should be provided in the pier-reinforcing cage during fabrication to allow insertion of a concrete pump pipe or tremie tube for concrete placement.

- The bottoms of the excavations should be cleaned of any loose cuttings before placing concrete. All applicable state and federal OSHA safety regulations must be satisfied during construction.

- The reinforcing bars in the piles should have a minimum concrete cover of 3 inches. Sufficient space should be provided in the reinforcing cage to allow insertion of a concrete tremie tube for concrete placement.

- The reinforcing cage must be carefully placed in uncased holes to prevent gouging of the sides. This will cause loose material to fall into the hole. The cage of reinforcing steel should be placed to the depth required by the plans, and adequately supported at the top.

- Pile shafts spaced closer than six (6) diameters center-to-center shall be drilled and filled with concrete alternatively, allowing at least 12 hours after concrete placement in one shaft before drilling of an adjacent shaft.

- All piles should be concreted immediately after drilling and clean out. Concrete should be placed through a tremie to prevent segregation and unnecessary splashing on the reinforcing steel. The concrete should be directed towards the center of the pile. Free fall of concrete should not exceed three (3) feet.

- The concrete should be flowable, non-segregating concrete with slump near the maximum allowable to obtain satisfactory consolidation without vibration, and to facilitate filling of all voids outside the casing. Concrete should not exhibit rapid slump loss. The slump for uncased drilled piles should be determined by the structural engineer. When casing is withdrawn, the minimum slump should be 6.0-in for specially designed concrete with retard to prevent arching of concrete during casing withdrawal, or setting of the concrete until after the casing is withdrawn, should be used. The slump can be 8±1 inches for concrete placed under groundwater determined by the structural engineer.

- Casing should be pulled as the concrete is being poured, while always maintaining a head of concrete inside the casing. The bottom of the casing should be maintained not more than five (5) feet nor less than one (1) foot below the top of the concrete during withdrawal and placing operations.

- Place concrete in pile in one continuous operation. Care should be taken to ensure that the concrete in the hole is dense and homogeneous. After the hole has been filled with concrete, the top 10 feet or the length of the reinforcing, whichever is greater should be vibrated.

- Drilled pile installation shall be performed under continuous observation by the project geotechnical consultant to confirm that the subsurface soils are similar to the soils encountered during our field study, which have formed the basis of our pier design recommendations. Further, the soils consultant should confirm that the dimensions of the installed piers are at least as large as those indicated on the foundation plan, and that pier installation has been performed as specified in this report. The contractor shall provide access and necessary facilities, including droplights, at his expense, to accommodate pier observations.

- Drilled pile installation shall be performed such that compliance with all safety rules and requirements is achieved. Drilling equipment, casing, reinforcement, and other items required for installation shall be kept at a safe distance from all overhead power lines and utilities.

Appendix G

California Environmental Quality Act (CEQA Checklist)

a) Would the proposed project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: (i) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. No, review of the California Geologic Survey (CGS) Earthquake Zones of Required Investigation, South Gate Quadrangle (1999), does not show any known earthquake fault traces on or near the project site. The closest known active fault surface trace is for the Newport-Inglewood fault located approximately 2.5 miles west of the project site on the Inglewood Quadrangle.
ii) strong seismic ground shaking? Yes, strong seismic ground shaking is anticipated at the project site. Strong seismic ground shaking will be mitigated by deep foundation design and structure designs.
iii) seismic-related ground failure, including liquefaction? Yes, the project site is located with a mapped CGS liquefaction hazard zone. The liquefaction hazard potential will be mitigated by deep pile foundation designs for support of the structures.
iv) landslides? No. The CGS has not mapped any potential landslide areas on or near the project site. The ground surface is relatively flat with no slopes or embankments.
b) Result in substantial soil erosion or the loss of topsoil? No. The ground surfaces will covered with the building structures and mitigated with hard scape areas and walkways with drainage control devices and non-erosive landscaping.
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? No, provided the geotechnical recommendations presented in the soil report are implemented for project design and construction.
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? No. The onsite soils in Boring BH-2, 0-5 feet depth, were sampled and tested in the laboratory with an expansion index (EI) of 1.6 (Very Low). Additional expansion index testing is recommended during excavation and grading to verify the expansion potential of the fill soil materials.
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? The project will be connected to public sewers. Onsite sewage disposal with septic tanks or alternative waste water disposal systems are not planned for the project site.
f) Would implementation of the Proposed Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? No, not to our knowledge.